

WELCOME



This catalog applies to students beginning their RRCC studies from Fall Semester 2010 through Summer Semester 2011.

The catalog contains comprehensive information about Red Rocks Community College, the degrees and certificates it offers, and the requirements a student must satisfy before receiving a degree or certificate. This publication describes admissions and registration procedures, information on tuition and fees, financial aid, and services offered by the college.

Information in this catalog is subject to change. For general college information, go to RRCC's Web site at www.rrcc.edu.

The programs, policies, statements, and procedures contained in this publication are subject to change or correction by the College without prior notice. Red Rocks Community College reserves the right to withdraw courses; revise the academic calendar; or change curriculum graduation procedures, requirements, and policies that apply to students at any time. Changes will become effective whenever the proper authorities so determine. This publication is not intended to be a contract between the student and Red Rocks Community College. However, students are bound by the policies, procedures, standards, and requirements stated herein, so long as they are in effect.

College 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

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FALL 2010 – SUMMER 2011 ACADEMIC CALENDAR

The following is a condensed academic calendar. For a complete calendar, please see the current schedule of courses or visit www.rccc.edu/schedule/calendar.htm

Fall 2010

Fall Registration begins	April 5
15-week weekend classes begin	August 20
15-week classes begin (other classes begin throughout the fall)	August 23
No classes after 5:00 p.m.	September 3
Labor Day weekend; no classes (both campuses closed)	September 4–6
All-College Development Day; no classes	October 19
Fall Break; no classes	November 24–28
Thanksgiving Holiday (both campuses closed)	November 25, 27–28
Fall Session ends	December 12

Spring 2011

Spring Registration begins	November 8
15-week weekend classes begin	January 14
Martin Luther King Day Holiday; no classes	January 17
15-week classes begin (other classes begin throughout the spring)	January 18
Spring Break; no classes	March 14–March 20
All-College Development Day; no classes	April 19
Easter weekend; no classes (both campuses closed)	April 23–24
Spring Session ends	May 11
Graduation Ceremony	May 14

Summer 2011

Summer Registration begins	April 4
Interim May Day Sessions begin (one- or two-week sessions)	May 16
No classes after 5:00 p.m.	May 27
Memorial Day Holiday; no classes (both campuses closed)	May 28–30
Full term 8- and 9-week Sessions begin	May 31
No classes after 5:00 p.m.	July 1
Independence Day Holiday; no classes (both campuses closed)	July 2–4
8/9-week Summer Sessions end	August 1

WELCOME FROM THE PRESIDENT



Welcome to Red Rocks Community College. Join us as we celebrate 40 years of excellence!

Originally established in 1969 as the Community College of Denver West campus, Red Rocks Community College has grown from a satellite building with a few hundred students, to two campuses in Lakewood and Arvada with over 14,000 students attending each year.

Although degrees, job titles, and workforce needs have changed over the past 40 years, the focus of RRCC has remained the same—to provide students with high-quality, affordable education within a supportive and inspiring learning environment. And with over 300 programs in areas from Animation to Zoology, RRCC's programs prepare students for rewarding careers.

Welcome to our community. Whether you've chosen Red Rocks Community College to start your career, to move up in your field, or to seek new opportunities, you will find success here.

Dr. Michele Haney
President, Red Rocks Community College

Dr. Michele Haney, RRCC President, has been with Colorado community colleges since 1992. She served as vice president of instruction and student services at Front Range Community College (FRCC) from 1992 to 1995, as vice president of the Westminster campus of FRCC from 1995 to 2000, as chief executive officer of the Boulder County campus of FRCC from 2000 to 2003, and as president of Morgan Community College from 2003 to 2008.

In December of 2008, Dr. Haney accepted the presidency of Red Rocks Community College. During Dr. Haney's time at Red Rocks, the college has experienced record enrollment and has been recognized as a model for training in renewable energy careers.

ABOUT RED ROCKS



Lakewood Campus

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



Arvada Campus

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

The full range of services for students includes an assessment center, academic advising, tutoring, financial aid, a library, a project center, and a student employment center. A bookstore provides new and used text books, snacks, gifts, and school supplies. Students with disabilities can find support and services, including an Assistive Technology lab, at the Office of Special Services.

In addition to academic support, the campus offers extras including a cafeteria and coffee shop, recreational facilities and a fitness center. The Children's Center offers full-day care for children from 18 months to kindergarten entry.

The Arvada 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, take college placement assessment exams, and receive financial aid information.

The LARC is the centerpiece of the campus which houses the computer commons, assessment, online writing support and library services, tutorial services, free GED pre-testing, career resources, and study areas with wireless Internet access. The Arvada Campus is home to the Medical Imaging program (Ultrasound & X-Ray Technology), Wind Energy Technology, Process Technology and Industrial Sciences and Operations.

Courses offered range from accounting to speech, including guaranteed transfer general education courses and basic skills courses in English and mathematics.

RRCC 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.

GUIDE TO CATALOG TERMS

Admission:

People ages 17 and above who want to attend RRCC can apply for entry to the college. The Office of Admissions is directly across from the main entrance of the Lakewood Campus.

Advisors:

RRCC's academic (also referred to as general) advisors help new and continuing students at all stages of their college careers, particularly those seeking certificates, degrees, and/or eventual transfers to four-year colleges or universities. Advising is located next to the Admissions Office on the Lakewood Campus. Advising is also available at the Arvada Campus by appointment.

Faculty advisors also are available to assist students. Many times academic advisors will refer students to faculty advisors for specific information concerning courses and programs. If you are pursuing a certificate or associate of applied science degree, consulting a program area faculty advisor is helpful.

Assessment:

In a community college setting, your reading, writing, and mathematics skills are assessed so that you can 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.

Once you are enrolled in classes, your teachers will assess your 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; and participating in classroom discussions. It is important that YOU assess your own progress so that you can ask questions and seek help when necessary.

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; 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.

Catalog:

The RRCC Catalog lists and describes essential information for all students, advisors, teachers, staff, and administrators. Use the catalog in conjunction 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.

Certificates:

In addition to two-year degrees, you can earn certificates in a variety of specialties. A certificate might require as few as five credits and in some cases can count toward a degree.

College-Level Examination Program® (CLEP):

The College-Level Examination Program® or CLEP gives students the opportunity to demonstrate college-level achievement through taking exams that can lead to credit for designated undergraduate courses. Refer to www.collegeboard.com/student/testing/clep/about.html for complete information and meet with an academic advisor.

College Opportunity Fund (COF):

The state of Colorado will pay a portion of the tuition for Colorado residents attending RRCC or any state-supported or participating private college or university, provided they have enrolled in the COF program. Enroll online by going to www.rrcc.edu and clicking on the link to COF.

Corequisite:

A corequisite 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

GUIDE TO CATALOG TERMS

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.

Credit(s):

A credit is a unit of study. 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

Associate of Applied Science

Meet with a faculty or academic advisor to learn about the requirements for each degree.

Electives:

Students choose an academic course from a list of options.

English as a Second Language (ESL):

Students for whom English is their second language can find assistance in the ESL/Foreign Language Lab located on the Lakewood campus.

Financial Aid:

Tuition assistance is available in four types: scholarships, grants, loans, and work-study agreements. To learn more about financial aid, visit www.rrcc.edu/finaid, or stop by to meet with a financial aid representative.

General Education Courses:

These are courses not directly related to a student's formal preparation for a career but 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):

If a student has not graduated from high school, passing the GED certifies that he or she has high school-level academic skills. RRCC offers a free practice test for the GED at the Lakewood and Arvada campuses.

Grade Point Average (GPA):

GPA refers to your average grade and is determined by dividing the grade points you have earned by the number of credits you have attempted.

Graduation:

Meet with a faculty or an academic advisor BEFORE beginning any program of study; advisors know the requirements and can help you stay on the path to graduation. Upon successful completion of degree or certificate requirements, you can receive recognition for your efforts during annual commencement exercises.

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 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.

1. The graduation audit request form is available from the Admissions Office, or you can find it online at <https://adminps.rrcc.edu/auditrequests/form.htm>.
2. Near the beginning of the semester in which you want to graduate, submit a graduation application form by the date listed in the current semester's schedule. The application form is available online at 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.

GUIDE TO CATALOG TERMS

International Students:

These are students from another country who are admitted to the U.S. on an F1 non-immigrant student visa.

Learning and Resource 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. The LARC offers RRCC students free walk-in tutoring in math, writing, reading, the sciences, accounting, Microsoft applications, and other subjects. Several computers are also available for student use.

Office of Special Services (OSS):

This office coordinates services for RRCC students with documented disabilities so that they have an equal opportunity to pursue their educational goals. Call 303.914.6733 or 303.914.6737 (TTY).

Open-Entry Community College:

Anyone who can benefit from RRCC's instructional programs and courses, including high school graduates, non-graduates, and students 17 years or older who are currently enrolled in high school, are welcome to apply.

Phi Theta Kappa:

RRCC sponsors a chapter of Phi Theta Kappa, the national student honors organization for two-year colleges.

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, such as failing the assignment or course and/or expulsion from the course or college." 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 within course descriptions of this 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 that the state of Colorado requires for students seeking associate of arts (AA) or associate of science (AS) degrees. 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 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 earn grades in the classes you take.

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 or non-attendance.

XXX:

A course numbered XXX means that the course is pending approval by the RRCC Curriculum Committee and CCCS.

NOTES

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
- Communication Studies
- Criminal Justice
- Dance
- Early Childhood Education
- Economics
- Elementary Education
- English and Literature
- Foreign Languages:
 - French
 - German
 - Spanish
- History
- Musical Theatre
- Philosophy
- Political Science
- Psychology
- Secondary Education
- Sociology
- 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
- 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
- Graphic Design/Print Production
- Motion Graphics and Animation
- Video Production
- Outdoor Recreation*

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)

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.

Communication: 3 courses (9 credits)

ENG 121 English Composition I (3)
 ENG 122 English Composition II (3)
 COM 115 Public Speaking
 or
 COM 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 155/156 Integrated Math I/II (3/3)
 (Both must be taken to satisfy math credit.
 Recommended for Teacher Education only.)
 MAT 166 Pre-Calculus (5)
 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 and Expression

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 to Present (3)
 DAN 125 History of Dance I (3)
 MUS 120 Music Appreciation (3)
 MUS 121 Music History I (3)
 MUS 122 Music History II (3)
 MUS 123 Survey of World Music (3)
 MUS 125 History of Jazz (3)
 THE 105 Theatre Appreciation (3)
 THE 211 Development of Theatre I (3)
 THE 212 Development of Theatre II (3)

• Literature and Humanities

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)
 LIT 225 Introduction to Shakespeare (3)
 LIT 268 Celtic Literature (3)

• Ways of Thinking

PHI 111 Introduction to Philosophy (3)
 PHI 112 Ethics (3)
 PHI 113 Logic (3)
 PHI 114 Comparative Religion (3)
 PHI 214 Philosophy of Religion (3)
 PHI 218 Philosophy of the Environment (3)

• Foreign Languages

(Must be intermediate/200-level)
 FL 211 Second Year Foreign Language (3)
 FRE, GER, ITA, JPN, RUS, SPA
 FL 212 Second Year Foreign Language (3)
 FRE, GER, ITA, JPN, RUS, SPA

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 225 Colorado History (3)
 HIS 247 Contemporary World History (3)

• Economic & Political Systems

ECO 101 Economics of Social Issues (3)
 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 125 American State and Local Gov. (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, Cultural & Social Frameworks

ANT 101 Cultural Anthropology (3)
 ANT 107 Introduction to Archaeology (3)
 ANT 111 Physical Anthropology (3)

ANT 215 Indians of North America (3)
 JOU 105 Introduction to Mass Media (3)
 PSY 101 General Psychology I (3)
 PSY 102 General Psychology II (3)
 PSY 205 Psychology of Gender (3)
 PSY 217 Human Sexuality (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 240 Health Psychology (3)
 PSY 249 Abnormal Psychology (3)
 SOC 101 Introduction to Sociology I (3)
 SOC 102 Introduction to Sociology II (3)
 SOC 205 Sociology of Family Dynamics (3)
 SOC 215 Contemporary Social Problems (3)
 SOC 216 Sociology of Gender (3)
 SOC 220 Sociology of Religion (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 w/Lab (5)
 BIO 112 General College Biology II w/Lab (5)
 BIO 201 Anatomy & Physiology I (4)
 BIO 202 Anatomy & Physiology II (4)
 BIO 204 Microbiology (4)
 BIO 208 General College Microbiology (5)
 BIO 220 General Zoology (5)
 BIO 221 Botany: GT-SC1 (5)
 CHE 101 Introduction to Chemistry I (5)
 CHE 102 Introduction to Chemistry II: GT-SC1 (5)
 CHE 111 General College Chemistry I (5)
 CHE 112 General College Chemistry II (5)
 ENV 101 Environmental Science (4)
 GEO 111 Physical Geography (4)
 GEY 111 Physical Geology (4)
 GEY 121 Historical Geology (4)
 MET 150 General Meteorology (4)
 PHY 105 Conceptual Physics (4)
 PHY 107 Energy Science and Technology (4)
 PHY 111 Physics: Algebra-Based I w/Lab (5)
 PHY 112 Physics: Algebra-Based II w/ Lab (5)
 PHY 211 Physics: Calculus-Based I w/Lab (5)
 PHY 212 Physics: Calculus-Based II w/Lab (5)
 SCI 155/156 Integrated Science I/II (4/4) (Both must be taken to satisfy science credit.
 Recommended for Teacher Education only.)

AA • Additional catalog requirements

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	Humanities	HUM-All courses
Anthropology	ANT-All courses	Journalism	JOU-105
Art	ART-All courses	Literature	LIT-All courses
Astronomy	AST-All courses	Management	MAN-226
Biology	BIO-All courses	Marketing	MAR-216
Business	BUS-115, 216, 217 and 226	Mathematics	MAT-All courses 120 and above
Chemistry	CHE-All courses	Meteorology	MET-150
Communication Disorders (May not apply to some 4-year degree programs)	CMD-160, 260, 265, 266, and, 267	Music	MUS-All courses
Communication	COM-All courses	Philosophy	PHI-All courses
Computer Info. Systems	CIS-118, 240, 251, 268	Physical Education (Maximum 3 credits apply toward degree)	PED-All courses
Computer Science	CSC-119, 160, 161, 165, 240, 261	Physical Ed. and Recreation	PER 128, 252, and 253
Criminal Justice (May not apply to some 4-year degree programs)	CRJ-All courses above 109	(May not apply to some 4-year degree programs)	
Dance	DAN-All courses	Physics	PHY-All courses except 105
(Some may transfer as physical education courses.)		Political Science	POS-All courses
Early Childhood Education	ECE-101, 205, 238, 241 and 260	Psychology	PSY-101, 102, 110, 205, 215, 217, 226 227, 235, 238, 240 and 249
Economics	ECO-All courses	Science	SCI-155, 156
Education	EDU-All courses above 200	Sociology	SOC-All courses
English	ENG-All courses above 122	Theatre	THE-All courses
Environmental Science	ENV-101		
Foreign Language	All courses except 101 and 102	Many four-year college transfer guides are available via the CCHE	
Geography	GEO-All courses	Web site at: http://higherred.colorado.gov/Academics/Transfers/Guides/default.html	
Geology	GEY-All courses		
Health and Wellness	HWE-100		
History	HIS-All courses		

Other AA 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.
10. With the approval of a faculty advisor and an instructional vice president, up to three credits of internship may count toward a degree.

Degree Requirements

State-guaranteed general education courses (38-42 credits)
Approved Electives (18-22 credits) 18 Credits must be in approved math or science
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.

Communication: 3 courses - (9 credits)

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

Mathematics: 1 course - (3-5 credits)

MAT 121 College Algebra (4)
 MAT 122 College Trigonometry (3)
 MAT 166 Pre-Calculus (5)
 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 and Expression

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)
 DAN 125 History of Dance I (3)
 MUS 120 Music Appreciation (3)
 MUS 121 Music History I (3)
 MUS 122 Music History II (3)
 MUS 123 Survey of World Music (3)
 MUS 125 History of Jazz (3)
 THE 105 Theatre Appreciation (3)
 THE 211 Development of Theatre I (3)
 THE 212 Development of Theatre II (3)

• Literature & Humanities

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)
 LIT 225 Introduction to Shakespeare (3)
 LIT 268 Celtic Literature (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)
 PHI 218 Philosophy of the Environment (3)

• Foreign Languages

(Must be intermediate/200-level)
 FL 211 Second Year Foreign Language (3)
 FRE, GER, ITA, JPN, RUS, SPA
 FL 212 Second Year Foreign Language (3)
 FRE, GER, ITA, JPN, RUS, SPA

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 225 Colorado History (3)
 HIS 247 Contemporary World History (3)

• Economic & Political Systems

ECO 101 Economics of Social Issues (3)
 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 125 American State and Local 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, Cultural & Social Frameworks

ANT 101 Cultural Anthropology (3)
 ANT 107 Introduction to Archaeology (3)
 ANT 111 Physical Anthropology (3)
 ANT 215 Indians of North America (3)
 JOU 105 Introduction to Mass Media (3)
 PSY 101 General Psychology I (3)
 PSY 102 General Psychology II (3)
 PSY 205 Psychology of Gender (3)
 PSY 217 Human Sexuality (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 240 Health Psychology (3)
 PSY 249 Abnormal Psychology (3)
 SOC 101 Introduction to Sociology I (3)
 SOC 102 Introduction to Sociology II (3)
 SOC 205 Sociology of Family Dynamics (3)
 SOC 215 Contemporary Problems (3)
 SOC 216 Sociology of Gender (3)
 SOC 220 Sociology of Religion (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)
 BIO 204 Microbiology (4)
 BIO 208 General College Microbiology (5)
 BIO 220 General Zoology (5)
 BIO 221 Botany: GT-SC1 (5)
 CHE 111 General College Chemistry I (5)
 CHE 112 General College Chemistry II (5)
 ENV 101 Environmental Science (4)
 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)

AS • Additional catalog requirements

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	Mathematics	MAT-All course above 121
Astronomy	AST-All courses		Except 123, 125, 135, 155, and 156
Biology	BIO-All courses except 105 and 106	Meteorology	MET-150
Chemistry	CHE-All courses	Physics	PHY-All courses except 105 and 107
Computer Info. Systems	CIS-118, 240, 251, 268	Psychology	PSY-235
Communication	COM-All courses		
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*	All courses except 101 and 102		
Geography	GEO-All courses		
Geology	GEY-All courses		
Health and Wellness	HWE-100		

Many four-year college transfer guides are available via the CCHE Web site at: <http://highered.colorado.gov/Academics/Transfers/Guides/default.html>

Other AS degree requirements

1. A minimum of 60 credits is required for the Associate of Science degree.
2. You must complete an additional 18 credits in any of the science or math disciplines listed above. Please meet with 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.
10. With the approval of a faculty advisor and an instructional vice president, up to three credits of internship may count toward a degree.

* Please meet with an advisor for details.

AGS • ASSOCIATE OF GENERAL STUDIES SPECIALIST DEGREE

Degree Requirements

Meet with a faculty advisor from your area of study to review a degree worksheet.

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

Criminal Justice
Graphic Design/Print Production
Motion Graphics and Animation
Video Production
Outdoor Recreation
Outdoor Physical Education

AGS • Additional Catalog Requirements – Specialist Degree

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. Meet with a 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)

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)

Communication - (3 credits)

ENG 121 English Composition I (3)
ENG 122 English Composition II (3)
COM 115 Public Speaking (3)
COM 125 Interpersonal Communication (3)

Mathematics - (3 credits minimum)

Select one course from the following:

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 (5)
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:

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 (3)
FRE, GER, ITA, JPN, RUS, SPA
FL 212 Second Year Foreign Language (3)
FRE, GER, ITA, JPN, RUS, SPA
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)
LIT 225 Introduction to Shakespeare (3)
LIT 268 Celtic Literature (3)
MUS 120 Music Appreciation (3)
MUS 121 Music History I (3)
MUS 122 Music History II (3)
MUS 123 Survey of World Music (3)

MUS 125 History of Jazz (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)
PHI 218 Philosophy of the Environment (3)
THE 105 Theatre Appreciation (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:

ANT 101 Cultural Anthropology (3)
ANT 107 Introduction to Archaeology (3)
ANT 111 Physical Anthropology (3)
ANT 215 Indians of North America (3)
ECO 101 Economics of Social Issues (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 225 Colorado History (3)
HIS 247 Contemporary World History (3)
JOU 105 Introduction to Mass Media (3)
POS 105 Introduction to Political Science (3)
POS 111 American Government (3)
POS 125 American State and Local
Government (3)
POS 205 International Relations (3)
POS 225 Comparative Government (3)
PSY 101 General Psychology I (3)
PSY 102 General Psychology II (3)
PSY 205 Psychology of Gender (3)
PSY 217 Human Sexuality (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 205 Sociology of Family Dynamics (3)
SOC 215 Contemporary Problems (3)
SOC 216 Sociology of Gender (3)

SOC 220 Sociology of Religion (3)
SOC 231 Sociology of Deviant Behavior (3)

Physical and Life Sciences - (4 credits minimum)

Select one course from the following:

AST 101 Astronomy I (4)
AST 102 Astronomy II (4)
BIO 105 Science of Biology (4)
BIO 111 General College Biology I (5)
BIO 112 General College Biology II (5)
BIO 201 Anatomy & Physiology I (4)
BIO 202 Anatomy & Physiology II (4)
BIO 204 Microbiology (4)
BIO 208 General College Microbiology (5)
BIO 220 General Zoology with Lab (5)
CHE 101 Introduction to Chemistry I (5)
CHE 102 Introduction to Chemistry II: GT-SC1 (5)
CHE 111 General College Chemistry I (5)
CHE 112 General College Chemistry II (5)
ENV 101 Environmental Science (4)
GEO 111 Physical Geography (4)
GEY 111 Physical Geology (4)
GEY 121 Historical Geology (4)
MET 150 General Meteorology (4)
PHY 105 Conceptual Physics (4)
PHY 107 Energy Science and Technology (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)

AGS • Additional Catalog Requirements – Generalist Degree

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	Journalism	JOU-105
Art	ART-All courses	Literature	LIT-All courses
Astronomy	AST-All courses	Management	MAN-226
Biology	BIO-All courses	Marketing	MAR-216
Business	BUS-115, 216, 217, and 226	Mathematics	MAT-All courses 120 and above
Chemistry	CHE-All courses	Meteorology	MET-150
Communication Disorders	CMD-160, 260, 265, 266, and, 267 <i>(May not apply to some 4-year degree programs)</i>	Music	MUS-All courses
Communication	COM-All courses	Philosophy	PHI-All courses
Computer Info. Systems	CIS-118, 240, 251, 268	Physical Education	PED-All courses
Computer Science	CSC-119, 160, 161, 165, 240, 261	Physical Ed. and Recreation	PER-128, 252, and 253 <i>(May not apply to some 4-year degree programs)</i>
Criminal Justice	CRJ-All courses above 109	Physics	PHY-All courses
Dance	DAN-All courses	Political Science	POS-All courses
<i>(Some may transfer as Physical Education courses)</i>		Psychology	PSY-101, 102, 110, 205, 215, 217, 226, 227, 235, 238, and 249
Early Childhood Education	ECE-101, 205, 238 and 241	Science	SCI-155, 156
Economics	ECO-All courses	Sociology	SOC-All courses
Education	EDU-All courses above 200	Theatre	THE-All courses
English	ENG-All courses above 122		
Environmental Science	ENV-101		
Foreign Language	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 the CCHE Web site at: <http://higherred.colorado.gov/Academics/Transfers/Guides/default.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.

Degree Requirements

Meet with a faculty advisor for a degree worksheet.

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

Specific program requirements (45-60 credits)

General education requirements (15 credits)

Communication - (3 Credits)

ENG or COM

Mathematics - (3 credits)

MAT 107 and above

Credit from any two of the following three areas (6 credits):

Arts and Humanities - (3 credits)

ART, FRE, GER, HUM, ITA, JPN, LIT, MUS, PHI, SPA, THE

Physical and Life Sciences - (3 credits)

AST, BIO, CHE, ENV, GEY, PHY, SCI

Social and Behavioral Science - (3 credits)

ANT, ECO, GEO, GIS, HIS, POS, PSY, SOC

Electives from any of the above subjects or CIS 118 (3 credits)

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.

AAS • Additional Catalog Requirements

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.)

ASSOCIATE OF APPLIED SCIENCE PROGRAMS

Emphases are available in the following career areas:

Accounting

Accounting Paraprofessional
Accounting Technician

Air Conditioning, Heating and Refrigeration

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

Applied Technology

Auto Collision Technology

(In cooperation with and taught at WarrenTech)

Automotive Customization*

(In cooperation with and taught at WarrenTech)

Automotive Service Technology

(In cooperation with and taught at WarrenTech)

Business

Interdisciplinary
Management and Supervision
Real Estate

Business Technology

Administrative Professional

Carpentry

Computer Information Systems with emphases in:

Cisco Network Associate
Computer Support Technician
Game Arts and Development
Microsoft Web/Windows Developer MCPD
Microsoft Database Administrator MCITP
Microsoft Server Administrator MCITP
Oracle Database Administrator
PC Application Specialist
Programming Specialist
Web Design
Web Development

Construction Technology

Construction Management
Construction Technology Technician
Building Maintenance Technician
Trades Degree

Culinary Arts

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

Early Childhood Education*

Electricity Commercial/Industrial/Residential

Construction Electrician
Maintenance Electrician
Fire Protection Technology
Construction Electrician/IBEW/NECA
Power Technology

Emergency Management and Planning

(CCCOonline)

Emergency Medical Services

Paramedic

Engineering Graphics Technology with emphases in:

Architectural
Mechanical
Civil

Environmental Technology

Introduction to Air Compliance
Introduction to Soil Compliance
Introduction to Water Compliance
Environmental Compliance Operations
Environmental pre Engineering
Environmental Safety

Fine Woodworking

Fire Science Technology

Fire Science Technology
Fire Service Management

Industrial Maintenance Technology

Industrial Maintenance Technology - Mechanical
Industrial Maintenance Technology - Electrical
Electro-Mechanical Industrial Maintenance

Interior Design

Law Enforcement*

Medical Office Technology

Medical Assisting
Medical Office

Multimedia Graphic Design

Graphic Design & Print Production
Video Production
Motion Graphics Animation
Game Arts & Development
Web Design & Development
Professional Photography: Traditional Film
Professional Photography: Digital Photography
Professional Photography: Traditional Film and Digital Photography
3D Design and Animation
Digital Media Journalism
Interactive Training and Simulation*

Plumbing

Plumbing
Plumber/Pipe fitter

Power Equipment and Sports Vehicle Technology

(In cooperation with and taught at WarrenTech)

Power Plant Technology

Precision Machining

(In cooperation with and taught at WarrenTech)

Process Technology

Radiologic Technology

Renewable Energy Technology

Sonography

Diagnostic Cardiac Sonography
Diagnostic Medical Sonography
Vascular Technology

Teacher Education

Paraeducator

Theatre Technology

Water Quality Management

Welding

(In cooperation with and taught at WarrenTech)

Wind Technology

* Pending approval

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

- Bookkeeping Clerk
- Accounting Clerk

Air Conditioning, Heating and Refrigeration

- Air Conditioning
- Level I Refrigeration
- Level II Refrigeration
- Refrigeration
- HVAC Fundamentals
- HVAC Controls Technician
- Forced-Air Heating
- Hydronic Heating
- Building Automation
- Air Conditioning, Heating/Refrigeration Apprenticeship program

Auto Collision Technology

(In cooperation with and taught at WarrenTech)

- NATEF Non-Structural Analysis and Damage Repair
- NATEF Painting and Refinishing
- NATEF Structural Analysis and Damage Repair
- Estimating and Management

Automotive Customization*

(In cooperation with and taught at WarrenTech)

- Hot Rod I*
- Hot Rod II*
- Hot Rod III*
- Hot Rod IV*

Automotive Service Technology

(In cooperation with and taught at WarrenTech)

- 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

Business

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

Business Technology

- Clerical Assistant
- Office Professional

Carpentry

Computer Information Systems

- Cisco Network Associate
- Computer Support Technician
- Game Development
- Microsoft Web/Windows Developer (MCPD)
- Microsoft Database Administrator (MCITP)
- Microsoft Network System Administrator (MCITP)
- Oracle Database Administrator
- PC Applications Specialist
- Programming Specialist
- Web Design
- Web Development

Construction Technology

- Construction Management 1
- Construction Management 2
- Construction Management 3
- Construction Technology Fundamentals
- Construction Technology Technician
- Building Maintenance Technician
- Building Codes
- International Residential Code
- International Plumbing and Mechanical Codes

Cosmetology

(In cooperation with and taught at WarrenTech)

- Cosmetologist
- Hairstylist
- Manicurist
- Esthetician (skin)

Culinary Arts

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

Early Childhood Education

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

Electricity Commercial/Industrial/Residential

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

* Pending approval

CERTIFICATES

Emergency Management and Planning

Emergency Medical Services

Emergency Medical Technician - Basic
Paramedic*

Engineering Graphics Technology

Engineering Graphics Architectural
Engineering Graphics Mechanical
Engineering Graphics Civil
SolidWorks

Environmental Technology

Introduction to Air Compliance
Introduction to Soil Compliance
Introduction to Water Compliance
Environmental Pre Engineering
Environmental Safety Systems

Fine Woodworking

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

Fire Science

Fire Fighter I
Fire Instructor
Fire Officer I
Fire Officer II
Fire Officer III
Driver Operator
Fire Inspector

Holistic Health Professional

Industrial Maintenance Technology

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

Interior Design

Intro to AutoCAD
Revit
Furniture Design
Sustainable Design Applications

Law Enforcement

Basic Law Enforcement Academy

Medical Imaging

Bone Densitometry
Computed Tomography
Diagnostic Cardiac Sonography
Diagnostic Medical Sonography
Magnetic Resonance Imaging
Mammography
Vascular Technology

Medical Office Technology

Medical Assisting
Medical Office

Multimedia Graphics Design

Graphic Design and Print Production
Video Production
Motion Graphics and Animation
Game Arts
Web Design
Advanced Web Design
Professional Photography: Traditional Film
Professional Photography: Digital Photography
Professional Photography: Traditional Film and Digital Photography
3D Design and Animation
Digital Media Journalism
Interactive Training and Simulation*

Nursing

Nurse Aide
RN Refresher Program

Outdoor Recreation

Outdoor Recreation Leadership
Winter Skills Specialist
Water-based Skills Specialist
Mountaineering Skills Specialist
Outdoor Recreation Generalist

Park Ranger Technology

Law Enforcement
Public Safety
Outdoor Recreation
Resource Interpretation

Phlebotomy

Physician Assistant

Plumbing

Basic Plumbing Skills
Colorado Plumbing Code Test Preparation
Residential Plumbing
Residential Plumbing and Heating
Journey-Level Plumbing
International Plumbing and Mechanical Codes

Police *(see Law Enforcement)*

Power Equipment and Sports Vehicle Technology*

Power Equipment Maintenance Technician*
Sports Vehicle Maintenance Technician*

Precision Machining Technology

Lathe Operator
Mill Operator
CNC Lathe Operator
CNC Mill Operator

Process Technology

Introduction to Process Equipment
Introduction to Process Plant Instrumentation
Introduction to Process Plant Safety
Introduction to Process Plant Operations
Introduction to Process Plant Quality Management

Real Estate *(See Business)*

Reflexology

* Pending approval

CERTIFICATES

Renewable Energy Technology

- Grid Tie Entry Level
- Advanced PV Installation
- Solar PV Designer
- Solar Thermal Entry Level
- Solar Thermal Installer
- Solar Thermal Designer
- Post EIC Degree Solar Photovoltaic
- Post HVA Degree Solar Thermal
- Energy Auditing
- Energy Efficiency

Teacher Education

- Paraeducator
- Adult Education and Family Literacy

Theatre Arts

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

Water Quality Management

- Introduction to Water Treatment
- Introduction to Wastewater Treatment
- Laboratory Analysis
- Mathematics in Water Quality
- Education and Experience
- Distribution and Collection Systems
- Advanced Water Treatment Certification
- Advanced Wastewater Treatment
- Certification

Welding

(In cooperation with and taught at WarrenTech)

- OFW and OFC Certificate
- SMAW Certificate
- GMAW Certificate
- FCAW Certificate
- GTAW Certificate

Wind Technology

- Introduction to Wind Energy Technology
- Wind Energy Safety
- Wind Energy Basic Electro-Mechanical
- Wind Energy Advanced Electrical
- Wind Energy Advanced Mechanical

NONCREDIT CONTINUING EDUCATION

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

Rocky Mountain Education Center (RMEC)

The RMEC is located at Red Rocks Community College, Lakewood Colorado campus, is the continuing education department of the community college. The mission of the RMEC 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. The RMEC is one of two Department of Labor's authorized OSHA Training Institutes 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. Specialty programs include Casino Management and Home Inspection. Training options include face-to-face and online delivery. The RMEC is a one-stop training organization dedicated to providing high quality, effective, and affordable training for our customers. As with all of the RMEC programs, training options can be customized to fit your organization's needs, and can be taught at your place of business. Call toll free 800.933.8394 or 303.914.6420.

For more information visit www.rrcc.edu/rmec

ACADEMIC INFORMATION

Like you, RRCC takes your education seriously. It is our great pleasure to recognize the successes of RRCC students.

Academic Integrity

Everyone associated with the college's academic community has a responsibility for establishing, maintaining, and fostering understanding and respect for academic integrity. The following principles are associated with academic integrity:

- Cite (give credit for) words and/or ideas in an academic exercise that are not expressly your own.
- Use information, computer programs, another person's work, study aids and/or other materials only when allowed by the instructor.
- Remove materials from the library, labs, and other college facilities only when an official representative of the college grants permission.
- Use copyrighted materials only with permission.
- Refuse to help another commit an act of academic dishonesty.
- Use only the resources specifically allowed when completing a test or other assignment.

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, such as 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 course. 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

Details of the Student Code of Conduct are found in the most current edition of the RRCC Student Handbook.

ACADEMIC INFORMATION

credit for the course. The college will not award credit for any audited course.

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

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

Z Placeholder. Grade not yet reported.

Academic Probation

If you have completed 13 or more credits with a cumulative GPA of less than 2.0, you will be placed on academic probation. Meet with an advisor at this point. Continued GPA of less than 2.0 after being placed on probation may lead to suspension from enrollment at Red Rocks Community College. You have the right to appeal. For detailed information, see the current edition of the Student Handbook.

Academic Renewal

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 or used for any degree or certificate. The grades and credits will still appear on your permanent academic transcript. Credit hours earned for courses eliminated from your GPA for Academic Renewal will be deducted from your remaining COF stipend eligible hours.

Information: 303.914.6352

Grade Point Average (GPA) Calculation

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

(AHRS) Attempted Credit Hours

Once you register for a course, you are attempting the credit hours assigned to that course. Attempted hours are not used to calculate your GPA.

ACADEMIC INFORMATION

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>	1	0	1	0X1 = 0
Totals		15	11	12	35
GPA =		$\frac{\text{Total QPTS} = 35}{\text{Total QHRS} = 12} = 2.917$			

(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 F=0. The points assigned to the letter grade multiplied by the quality credit hours received for the course give 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.

Graduation 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.**

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. Each registration for the course and each grade received will be listed on the transcript. The highest graded course will be used to calculate the GPA, total credit hour earned, graduation and graduation honors. Removed courses will not be eligible for calculation into the GPA, total credit hours earned, graduation or graduation honors.

In the event that the same grade is earned two or more times for a

ACADEMIC INFORMATION

repeated course, the most recent instance of the duplicate grade will be included in the term and cumulative GPA. All other duplicate grades will be excluded from the term and cumulative GPA. There will be no limitation on the course grades that are eligible to be repeated. All credits removed will still be deducted from the COF stipend eligible hours.

Upon completion of the repeated course a student may request to fill out the 'Repeated Course' form which is available in Student Records. Student Records will process the form for accuracy and eligibility. It is the student's responsibility to insure process is completed.

Information: 303.914.6352

Recognition of Achievement Honors List

The Honors List recognizes those who have achieved an outstanding level of academic success at RRCC. The Honors List designation is recorded on your official academic transcript, and you receive recognition during the college's annual graduation ceremony. To receive this academic honor, you must be graduating and have:

- Must be graduating in the current spring semester or have graduated the previous summer or fall semester.
- Must have earned for all credits, a cumulative grade point average (GPA) of 3.85 (or higher) by the graduating term to be recognized

during the graduation ceremony.

- Must have earned an overall cumulative GPA of 3.85 for all courses taken at RRCC for designation on the transcript and diploma.
- Must have taken at least 15 credits of course work through RRCC.
- Completed the requirements for an Associate of Arts, Associate of Science, Associate of General Studies or Associate of Applied Science degree; or have completed a certificate program containing at least 30 credits.

Information: 303.914.6353

Phi Theta Kappa

RRCC sponsors a chapter of Phi Theta Kappa, the national student honors organization for two-year colleges. Members plan programs and events which encourage scholarship, service, and leadership. 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 2.0 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

ADMISSIONS



Admissions Policy

Red Rocks Community College practices an “open door” admissions policy, which means that entry is generally unrestricted; however, the college reserves the right to place students in classes on the basis of academic advising, testing, pre-enrollment interviews, and past educational achievement.

Admittance 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. Some students may need to enroll in certain courses to compensate for scholastic deficiencies or to meet established prerequisites.

The college reserves the right to review and revoke the enrollment of any person who appears to be unable to profit from further education, as well as of those persons whose enrollment would not be beneficial to them or to the college and in accordance with Board Policy BP 4-10, which is available online: www.cccs.edu/SBCCOE/Policies/BP/PDF/BP4-10.pdf

Students who enroll in an occupational program, who are veterans, who receive financial aid, or who are on F-1 or M-1 student visa status must declare their degree or certificate program at the time of registration. Any changes in the declared degree or certificate must be recorded with the Admissions office or the Student Records office.

Students who have a disability or who otherwise have special needs are encouraged to contact the Special Services office. This office provides academic support and accommodations (at no cost) to students with documented disabilities. Students who had an Individual Education Plan (IEP) or 504 Plan in high school should contact the Office of Special Services after applying for admission to the college.

The following minimum requirements are used as guidelines for admission:

1. All individuals, 17 years of age or older, who have a high school diploma, a General Education Development (GED) certificate, or are not enrolled in high school, are admitted upon completion of the RRCC admissions application.

2. Students younger than 17 may be considered for underage admissions by completing a “Waiver of Admissions requirements” (available at the office of the Vice President for Student Services). Students must also complete the Accuplacer placement test, and may be required to submit a monitored writing sample. An admission decision will be based on a student’s academic history, determination of ability to benefit from college level instruction, and overall educational goals.

3. Students under the age of 15 will only be considered for admission if they have received a high school diploma.

Acceptance Letters

Acceptance letters are sent by e-mail or by regular U.S. mail. Please contact the Admissions office at 303.914.6310 with any questions regarding the acceptance letter.

ADMISSIONS

Admission Procedures

In order to enroll, follow these five steps:

1. Apply for admission.

Submit an application for admission online at: www.rrcc.edu or stop by the Admissions Office.
Information: 303.914.6348 or www.rrcc.edu/admis

2. Apply for the College Opportunity Fund (COF).

Colorado residents should complete the application. The State of Colorado provides funding for students to attend college through COF. This is the state paid portion of your tuition which is a benefit of being a Colorado resident. If you do not apply for COF funding, you are responsible for both the student share and the state share of all tuition and fees.

For more information and to apply, click the COF link on the RRCC home page: www.rrcc.edu

3. Meet one of the following assessment requirements.

- ACT scores (Reading 17, Sentence Skills 18, Math 19)
- SAT Scores (Verbal 430, Math 460)
- Successful completion of college-level math and English courses
- Successful completion of the Accuplacer placement test. (See page 29.)

Information: 303.914.6720 or www.rrcc.edu/assessment

4. Meet with an academic advisor.

An advisor will help you select courses, identify course prerequisites, obtain program information, evaluate assessment results, assist with transfer planning to a four-year college or university, and prepare you for graduation. They can check your progress in AA, AS, and AGS degree plans and develop a course schedule that fits your needs and academic goals. A team of academic advisors is available year-round on a walk-in basis. An important step toward succeeding at RRCC is meeting regularly with an academic advisor.

Information: 303.914.6255 or www.rrcc.edu/advising

5. Register.

You can register for classes in person at the Lakewood or Arvada campus or register online. Go to www.rrcc.edu and click on "Register for Classes."

Information: 303.914.6348 or www.rrcc.edu/onlineenroll

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, submit an official transcript to the Student Records Office prior to the semester in which you plan to graduate.

Information: 303.914.6355

High School Students

RRCC welcomes high school students who are at least 17 years old and can benefit from our instructional programs. Students utilizing this **Post Secondary Enrollment Option** will receive both high school and college credit for RRCC classes that are completed with a "C" grade or better. If approved by your school district, you may also be eligible for prepaid or reimbursed tuition. Ask your counselor about Post-Secondary Enrollment Options (PSEO), Warren Tech, and other concurrent enrollment options. To enroll, follow these steps:

1. 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.
 - Complete additional forms, if required, for the specific program you enter at RRCC. Consult with your high school counselor.
 - Complete the College Opportunity Fund application
2. Complete the Accuplacer assessment at RRCC or submit qualifying ACT/SAT scores to the Assessment Center.
3. Contact the Advising Office at 303.914.6350 or visit www.rrcc.edu/hs to schedule an appointment for academic advising and registration.

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Assessment

The state of Colorado requires incoming students to complete the Accuplacer, an assessment test of basic skills, to guide your choice of courses. You must complete the assessment or present exemption documents before you register for classes. The Accuplacer assesses your proficiency in English, reading, and mathematics and is taken on a computer in the Testing 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 per test. No appointment is required to take the Accuplacer, but you must show a valid state or federal issued picture ID. You will receive your scores as soon as you complete the test which will help you make course selections when you meet with an academic advisor.

You cannot “fail” the Accuplacer; your score is an indication of the level of coursework you are ready to take. We strongly recommend that you review the online study guides available prior to taking the Accuplacer. The study guides can be found on our Web site at www.rrcc.edu/assessment. You are responsible for enrolling in basic skills courses during your first 30 credit hours of attendance if your assessment scores are below college level.

Students enrolling in Fire Science or Emergency Services coursework must consult the Emergency Services Department for their assessment requirements. You may take the Accuplacer at either the

Lakewood or Arvada campus. Please refer to the Assessment Center Web site for additional information about the Accuplacer and testing hours at both campuses.

Exemptions to the Assessment Requirement

Students who have graduated from a Colorado public and private high school (or its equivalent) during the previous academic year or students who will be working toward a degree within the Colorado Community College System must be assessed for reading, writing, and mathematics ability. Students who meet one of the following requirements do not have to take the Accuplacer 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 to receive the exemption.
- 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: www.rrcc.edu/assessment
- 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.

Credit for Prior Learning (CPL)

You may receive academic credit for education earned through earlier schooling, work, experiential learning, or other non-traditional means. It must be comparable to courses offered at RRCC and related to your current program. Methods available for CPL are the following:

- College Level Examination Program (CLEP)
- Portfolio (documentation of past learning)
- Institutional Challenge Examination (CPL) The handbook and forms are available online.

Information: 303.914.6720 or www.rrcc.edu/assessment

Career Resources Career Assessments

Red Rocks offers individual appointments for the Myers-Briggs and Strong Interest Inventory career assessments at the Arvada Campus. Assessments are \$20 each for students and alumni or \$30 each for community members.

Call to make an appointment: 303.914.6016

Career Development Course

PSY 110, Career Development, is offered each spring and fall semester in the classroom and online during the summer. PSY 110 covers all areas of the career development process, including formal and informal assessments (personality, interests, skills, values, and beliefs); personal

ADMISSIONS

career exploration; occupational, labor, and job market resources; the changing workplace; goal-setting; decision-making; networking; informational interviewing; résumé writing; and interviewing skills. Upon completion, students will have created their own career development plans.

Information: 303.914.6016 or dan.macy@rrcc.edu

College in Colorado Career Resources

This free online career resource from College in Colorado is available to all students and community members. Included are free skills, values and interest assessments, occupational and salary information, resources to locate degree and certificate programs by college, occupational videos and additional resources such as a resume builder. To access: www.collegeincolorado.org, create an account and choose Career Planning.

Military Science (U.S. Army ROTC)

The Military Science Program at RRCC is offered in conjunction with the University of Colorado at Boulder (CU-Boulder). 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 supplement a regular degree program by offering practical leadership and management experience. Students attend classes

at either University of Colorado at Boulder, Colorado School of Mines in Golden, or Metro State College of Denver.

Register for Army ROTC classes (ARM prefix) either online or through the RRCC Student Records office, Room 1200. For more information about the AROTC program, contact the AROTC Enrollment/Scholarship officer at 303.492.3459, or 303.492.6495, or see www.colorado.edu/arotc.

Information: 303.914.6353

Transcripts

There are several ways to order a transcript. If you took classes before summer 1996, contact the Student Records Office. You may also print a transcript request form found on the Red Rocks Web site under "Student Records." You can mail or fax this form to Student Records.

If you took classes during or after summer 1996, you may order your transcript at www.rrcc.edu and click on the Portal link "The Rock." Enter your user ID and six-digit PIN. Your user ID starts with the letter R or S. Your PIN initially is your birth date (mmddyy). Click on the "Student" tab and find the "Request Official Transcript" link.

Student Records Fax: 303.989.6919

There is no charge to order a transcript. Phone requests are accepted only for transcripts sent to other colleges. Transcripts will not be released for students who have failed to fulfill their financial obligations to the college.

Information: 303.914.6352

Transfer of Credits

The Colorado Community College System (CCCS) uses 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 at www.cccs.edu. Once you are on the site, select 'Common Course Number System'.

1. Initial transcript evaluation is completed in Student Records.
2. Grade point average (GPA) from transfer institutions is not calculated into your RRCC GPA.
3. The college reserves the right to validate and examine all courses to determine if they are obsolete. If a course is obsolete, 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

ADMISSIONS

envelope to Student Records as soon as possible after registering for classes. Transcripts will not be evaluated until you are registered. However, they can be processed before you register in order to over-ride a pre-requisite requirement.

Information: 303.914.6355

Transferring from RRCC to Four-Year Colleges and Universities

RRCC has established transfer agreements with the following institutions:

- Adams State College
- Colorado Christian University
- Colorado College
- Colorado School of Mines
- Colorado State University:
 - Fort Collins
 - Pueblo
- Colorado Technical University
- DeVry University
- Fort Hays State University
- Fort Lewis College
- Franklin University
- Governors State University
- Jones International University
- Metropolitan State College of Denver
- Mesa State College
- Naropa University
- Northwest Missouri State University
- Regis University
- St. Francis University
- United States Air Force Academy
- University of Colorado:
 - Boulder
 - Colorado Springs
 - Denver

- Denver Health Sciences University of Denver
- Daniels College of Business University of Northern Colorado
- University of Phoenix
- 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 or www.rrcc.edu/transfer

WarrenTech

Through a cooperative agreement with WarrenTech, the career and technical high school for Jefferson County Public Schools, RRCC students pursuing select vocational degrees and certificates attend this school for specific vocational coursework and receive RRCC credit. 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 can attend WarrenTech on a space-available basis. WarrenTech classes are conducted on a block schedule, usually for 15 hours per week. The morning classes run from 7:30-10:30 M - F and the afternoon classes run from 12:00 - 3:45 M - Th.

Adult students pay tuition to RRCC but attend programs on the WarrenTech campus. Students are also required to pay program fees at WarrenTech. Typically, WarrenTech

programs are the equivalent of 14 college credit hours per semester.

WarrenTech Admission Steps:

1. Apply for admission at RRCC.
2. Apply for admission at WarrenTech and take the Accuplacer at RRCC. Attach the results to the WarrenTech application.
3. Wait to be notified of acceptance to WarrenTech.
4. When accepted to WarrenTech, register with Janis Eagan in the RRCC Admissions Office and pay tuition/fees at both RRCC and WarrenTech.

WarrenTech Information Guides are available at WarrenTech or RRCC. For more information, contact the RRCC-WT Liaison at **303.982.5232** 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 either provide a college transcript or take the Accuplacer test at RRCC.

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

- Auto Collision Repair
- Auto Customization
- Automotive Technology
- Cosmetology: Esthetics
- Cosmetology: Hairstyling
- Cosmetology: Nail Technology
- Dental Assisting
- Hotel and Travel
- Power Equipment and Motorcycle Technology
- Precision Machining Technology
- Welding

Western Undergraduate Exchange

The Western Undergraduate Exchange (WUE) is a program of the Western Interstate Commission for Higher Education (WICHE). Students who are residents of WICHE states may enroll at participating two- and four-year college programs outside of their home state at a reduced tuition rate. WICHE states include Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

If you're a resident of a WICHE state, you can study at RRCC or any one of the 135+ participating schools in the West and pay reduced tuition (100% of the full resident tuition rate).* WUE/WICHE students are not eligible to participate in the College Opportunity Fund (COF). The Physicians Assistant program is not available for this program. WUE participants must comply with HB-06S-1023 by proving legal presence in the United States.

* A student participating in the WUE/WICHE program may not use the time in Colorado to fulfill the physical presence requirement for in-state tuition. WICHE students must comply with HB-06S-1023 providing lawful presence.

**Information: 303.914.6543 or
wue.wiche.edu**

College Opportunity Fund (COF)



The State of Colorado historically subsidized higher education for in-state students

by giving money directly to the colleges. In 2004, the Colorado Legislature enacted a new law, starting in the fall semester 2005, the State gave this money for the subsidy to students by sending it to the institution the student designates. The money is applied to a resident student's tuition if the student applies for and authorizes the use of the stipend. The amount of the COF stipend is set by the state legislature. See the class schedule for the current stipend amount.

Failure to apply for COF or comply with HB-062-1023 could result in your tuition being changed to non-resident. You must enroll online; the link to the COF enrollment site is available on the RRCC home page: www.rrcc.edu.

HB-06S-1023

In July 2006, the Colorado State Legislature enacted HB-06S-1023, which became effective on August 1, 2006. This legislation requires all citizens who apply for state-funded benefits that entail any payment or financial assistance provide proof that they are lawfully present in the United States. An example of this is in-state tuition.

If tuition is a problem, RRCC has many scholarships and other financial aid options that can help you.

Financial Aid

Approximately one-third of our students receive 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.
- Loans must be repaid, unlike scholarships and grants.
- Work-study agreements allow you to work for the college while you are enrolled.

The Financial Aid Office can provide details for the following:

- Local and regional scholarships
- Federal Pell Grants, Federal Academic Competitiveness Grants, Colorado Student Grants, Colorado Leveraging Educational Assistance Partnership Grants, Federal Supplemental Educational Opportunity Grants, Federal Direct Stafford Student Loans, and Federal Direct Parent Loans (P.L.U.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 the priority date. For complete financial aid

information, see the Financial Aid Handbook.

Information: 303.914.6256 or www.rrcc.edu/finaid

Priority Dates to Receive Financial Aid

Fall: Previous April 1
Spring: Previous September 1
Summer: Previous February 1

Financial Obligations of Students

Payment dates for tuition, fees, and materials are published in the current class schedule. 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 (non-resident), 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 included with the petition.) Deadlines for submission

of the petition are published each semester in the current class schedule. 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: 303.914.6543

Tuition Payment

Pay tuition in person:

You can pay by cash, personal check, MasterCard, Visa, Discover Card, or American Express at the Cashier's Office at the Lakewood campus; the Arvada campus does not accept in-person payments. If you are sponsored by a third party, such as an employer or other agency, bring a check to the Cashier's Office from the sponsor or a letter stating that the sponsor will pay upon receipt of billing and before grades are released.

Pay tuition online:

Go to www.rccc.edu. Click on the Portal link "The Rock" and log in using your student ID# and PIN (birth month and date – for example, May 11 = 0511, unless you have selected your own PIN) then click on the "Student Finance" tab. Only MasterCard and VISA are accepted online.

Pay tuition by mail:

Mail a check or money order to:
Red Rocks Community College
Cashier's Office, Box 2
13300 W. 6th Ave.
Lakewood, CO 80228-1255

RRCC Foundation

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 15 years later, we have hundreds of donors who help us each year. The Foundation has raised more than \$6.5 million, awarded more than \$2 million in scholarships to 2,400 students, and provided more than \$2 million to the college for the LARC 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 \$400,000 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** or visit our Web site at www.rccc.edu/foundation

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
Jim Dascalos
Dr. David Donaldson
Dr. Michele Haney
Jacquie Houghton
Dan Leach
Thomas W. Lemcke
Tom Menk
Aldo G. Notarianni
Skip Olson
Dr. Melinda O'Rourke
Bob Short
Dr. John Trefny
Shirleen Tucker
Denise Waddell
Jim Whitfield
Paulann Doane, executive director

TUITION RATES

Tuition rates below were effective for Spring 2010.

Please check the Web site at www.rrcc.edu/tuition for current tuition rates. Tuition rates are set annually by the State Board for Community Colleges and Occupational Education.

Resident Tuition Rates

Credits	Student Share Tuition	COF Stipend Tuition*	Total Tuition	Registration Fee	Student Fee**	Total Cost	Student Share Tuition, Fees
1	\$88.30	\$68.00	\$156.30	\$11.45	\$9.15	\$176.90	\$108.90
2	\$176.60	\$136.00	\$312.60	\$11.45	\$18.30	\$342.35	\$206.35
3	\$264.90	\$204.00	\$468.90	\$11.45	\$27.45	\$507.80	\$303.80
4	\$353.20	\$272.00	\$625.20	\$11.45	\$36.60	\$673.25	\$401.25
5	\$441.50	\$340.00	\$781.50	\$11.45	\$45.75	\$838.70	\$498.70
6	\$529.80	\$408.00	\$937.80	\$11.45	\$54.90	\$1,004.15	\$596.15
7	\$618.10	\$476.00	\$1,094.10	\$11.45	\$64.05	\$1,169.60	\$693.60
8	\$706.40	\$544.00	\$1,250.40	\$11.45	\$73.20	\$1,335.05	\$791.05
9	\$794.70	\$612.00	\$1,406.70	\$11.45	\$82.35	\$1,500.50	\$888.50
10	\$883.00	\$680.00	\$1,563.00	\$11.45	\$91.50	\$1,665.95	\$985.95
11	\$971.30	\$748.00	\$1,719.30	\$11.45	\$100.65	\$1,831.40	\$1,083.40
12	\$1,059.60	\$816.00	\$1,875.60	\$11.45	\$109.80	\$1,996.85	\$1,180.85

Non-resident Tuition Rates

Credits	Tuition	Registration Fee	Student Fee**	Total Cost
1	\$393.90	\$11.45	\$9.15	\$414.50
2	\$787.80	\$11.45	\$18.30	\$817.55
3	\$1,181.70	\$11.45	\$27.45	\$1,220.60
4	\$1,575.60	\$11.45	\$36.60	\$1,623.65
5	\$1,969.50	\$11.45	\$45.75	\$2,026.70
6	\$2,363.40	\$11.45	\$54.90	\$2,429.75
7	\$2,757.30	\$11.45	\$64.05	\$2,832.80
8	\$3,151.20	\$11.45	\$73.20	\$3,235.85
9	\$3,545.10	\$11.45	\$82.35	\$3,628.90
10	\$3,939.00	\$11.45	\$91.50	\$4,041.95
11	\$4,332.90	\$11.45	\$100.65	\$4,445.00
12	\$4,726.80	\$11.45	\$109.80	\$4,848.05

All course fees: \$6.05 per credit hour for designated courses. **Cisco fees:** \$16.60 per credit hour for designated courses.

****Student Fees** of \$9.15 per credit hour include: Student Activity Fee \$5.45. Student Center Bond \$2.50. Parking Fee \$1.20. Total Fees \$9.15. *Note: Total student fees not to exceed 12 credit hours.*

Colorado state law defines the conditions that qualify you for in-state tuition. Your initial classification is based on information you supply on the Application for Admission. You must live in the state of Colorado for 12 consecutive months before you can apply for reclassification to resident status. The Petition for Residency Reclassification is available in the Admissions Office. The deadline for a change in status for the spring 2010 semester is June 9.

Online, PA Program, and Nursing Tuition Rates

RRCC Online & CCCOnline Tuition

Resident Tuition \$156.10 student share, \$68.00 COF stipend. Total tuition \$224.10 per credit.

Non-Resident Tuition \$246.95 per credit hour.

NUR Online

Resident Tuition \$196.45 student share, \$68.00 COF. Total tuition \$264.45 per credit.

Non-Resident Tuition \$287.30 per credit hour.

Nursing Courses (NUR)

Resident Tuition \$128.65 student share, \$68.00 COF stipend. Total tuition \$196.65 per credit.

Non-Resident Tuition \$393.90 per credit hour.

Physician Assistant Program (PAP)

Resident Tuition \$332.10 student share, \$68.00 COF stipend. Total tuition \$400.10 per credit.

Non-Resident Tuition \$440.80 per credit hour.

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.rccc.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 application forms are 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/or the English placement test and follow the 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. All non-native English speakers are tested for English ability in addition to taking the Accuplacer test. You will then 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 another 60 hours.

Certain majors require essential lower-division courses. Please meet with 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.

* Meet with 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.

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, 303.914.6538, or
www.rrcc.edu/international**

SCHEDULING OPTIONS

Red Rocks Community Colleges offers a wide selection of online options to meet students needs. For more information, visit www.rrcc.edu/options/ or call 303.914.6444.

Accelerated Courses

An accelerated course takes the content from a traditional 15-week, 3-or 4-credit class and compresses it into a shorter time frame. Accelerated classes are 3 or more credits and meet for less than the traditional 15 week semester. Classroom and online classes are available.

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

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.

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.

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.

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.

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 LARC on the RRCC Lakewood or Arvada campus to use computers.

CCOnline Courses

Colorado Community College Online provides a centralized online program 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 CCOOnline are associated with the Colorado community college of your choice within the state system. Choose RRCC as your home college, and your transcript will show your CCOOnline courses as RRCC courses.

Information: 800.801.5040 or www.cconline.org

Self-Paced Courses

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

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.

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/Food Service

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

Information: 303.914.6374

Campus Police

The safety of students, faculty, and staff is the priority of the RRCC Campus Police Department. We serve both the Lakewood and Arvada campuses responding to medical emergencies, investigating criminal acts and traffic crashes, enforcing parking and traffic violations, and opening and securing campus buildings. We provide safety escorts when requested, assist with car battery jumpstarts, and deliver emergency messages by dispatching an officer to that specific location. Campus Police is also the location of lost and found and we are located behind the Information Desk in the main lobby of the Lakewood campus.

Non-emergencies, call 303.914.6394
For emergencies, dial 911

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

Coffee Shop

The Coffee Shop, located in the Student Center, offers brewed coffee, espresso drinks, smoothies, plus quick meals and snacks.

Information: 303.914.6262

Fitness Education Center

The Fitness Education Center at Red Rocks offers students the opportunity to improve cardiovascular fitness, flexibility, muscle strength, and endurance. Equipment includes free weights, weight machines, computerized bicycles, treadmills, stepmills, a versa climber and a ricochet court. Use of the Center is free for students with a current semester ID. Students may enroll in PED 110-Fitness Center Activity for 1 credit.

Information: 303.914.6375

Learning and Resource Center (LARC)

The LARC houses tutoring, library and Internet resources, and adaptations for students with disabilities. The LARC is a welcoming place where you can study on your own or meet with a tutor, a study group, or an instructor. Centers are located at both the Lakewood and Arvada campuses.

Information: 303.914.6705 or
www.rrcc.edu/larc

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? AAA 050 (Semester Survival) and/or the Connect to Success Office 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

STUDENT SERVICES

Connect to Success

- 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 dana.kobold@rrcc.edu, or call for information.

Information: 303.914.6317 or www.rrcc.edu/success

Communication Lab

Give your Best Presentation with help from the CommLab!

- Develop presentation outlines
- Enhance oral presentation skills
- Control speech anxiety
- Develop confidence in delivery
- Practice using visual aids
- Record your presentation
- Drop-in or sign-up times available

Visit the CommLab upstairs in the LARC – Rm 2281. Free Tutoring Available to ALL Red Rocks Students.

Information:

marlene.adzema@rrcc.edu

303.914.6239 or

Dr. Sherry Messina Dewald at sherry.dewald@rrcc.edu

303.914.6429

English Language/ Intercultural Services

The English Language/Intercultural Services Office provides college preparatory English classes for international and resident students for whom English is not a primary language. Also provides academic and cultural advising for a diverse student population, and specific immigration advising for International students.

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

ESL/Foreign Language Lab

The ESL/Foreign Language Lab offers tutoring in Spanish, French, German, and English as a Second Language (ESL). Computers bookmarked with useful language sites are also available.

Information: 303.914.6701 (Foreign Language) 303.914.6416 (ESL)

GED Pre-test

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.

Information: 303.914.6701

Library

The library offers extensive print, audiovisual, and electronic 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 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.

www.rrcc.edu/specialservices

Tutoring

Tutoring is provided by professional and peer tutors. Walk-in tutoring for math, writing, the sciences, accounting, Microsoft applications, and other subjects is free to RRCC students.

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

Information: 303.914.6701 or
www.rrcc.edu/larc/tutoring.html

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.

Information: 303.914.6321 or
www.rrcc.edu/writing

Student Center

The Lakewood campus Student Center offers various services and activities for students, including:

- Campus/community events and entertainment
- FAX and copy services
- Leadership opportunities
- Publications and bulletin boards
- Recreation
- Student clubs and organizations
- Student ID cards
- Movie tickets
- Study groups
- Computers for academic and leisure use
- Locker rentals
- Food Bank

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, and the Student Project Center.

Information: 303.914.6370 or
303.914.6900

Student Employment and Internship Services

Student Employment

A wide range of full-time, part-time and temporary jobs are available to current and former students through Student Employment & Internship Services.

While RRCC cannot guarantee employment, we make every effort to maintain contact with businesses and industries to generate employment opportunities. Other resources available to students include on-campus recruiting visits from business and industry; job announcements posted both online and on campus, and assistance with résumé preparation, interviewing skills, and general career advising.

On-campus, part-time employment is available to eligible students through both Work Study and Student Hourly placement. Off-campus volunteer opportunities are available through the *AmeriCorps* program.

Information: 303.914.6258 or
www.rrcc.edu/jobwatch

Internships

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 lists internships from local employers at www.rrcc.edu/jobwatch. Interested students receive help with resume preparation and interview skills. The office facilitates internship placement, the enrollment process, and maintains internship student records.

A three-way partnership—the employer (mentor), the student (intern), and an RRCC faculty/staff

STUDENT SERVICES

member (support)—enhances the student’s success during the internship. This partnership is formalized through a signed training agreement, detailed learning objectives, weekly timesheets, a final report or project, and evaluations. 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 determination of a final grade.

All internship courses carry a specific course prefix and course number, and most can be found in the respective program listings and course descriptions in the catalog. Permission of the faculty advisor is required to enroll, and all students interested in pursuing internships must begin their enrollment process in the Student Employment and Internship Services office.

**Information: 303.914.6258 or
www.rrcc.edu/jobwatch**

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. 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’ permission to pursue individual service projects. Transcript designation is available to these students as well. Students can also pursue volunteerism through the *AmeriCorps* program, where education award scholarships are available for designated terms of service.

Information: 303.914.6258

The Student Voice

The Student Voice represents the interests of the student body. Members work with the college’s administration to set policy and plan various activities. To join The Student Voice, you must be enrolled at RRCC, complete the application process, and maintain a 2.5 GPA. Participation provides an opportunity to develop leadership skills that will assist you in your educational and professional endeavors.

Information: 303.914.6248

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, sexual orientation, gender expression, 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 Director of Personnel as its affirmative action officer.

For information contact:

Personnel Office
Red Rocks Community College
13300 W. Sixth Avenue, Box 17
Lakewood, CO 80228-1255
303.914.6570

Other inquiries may be made to:

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

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

Students with Disabilities

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 non-discrimination 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 (OSS).

Documentation of disability assists the OSS staff in collaborating with the student to determine reasonable accommodations and/or services, which are provided on a case-by-case basis. If the submitted documentation is incomplete or does not support the student's request for accommodations and/or services, the student may be asked to provide additional documentation. For example, an Individualized Education Plan, 504 Plan, or Summary of Performance (SOP) from a secondary school without

supporting information generally is not considered to be sufficient documentation.

In general, documentation should include the following:

The credentials of the evaluator(s) Documentation must be provided by a licensed or otherwise properly credentialed professional who has undergone appropriate and comprehensive training, has relevant experience, and has no personal relationship with the individual being evaluated. The individual making the diagnosis must be qualified to do so (e.g., an orthopedic limitation might be documented by a physician, but not a licensed psychologist). More specifically, the license needs to be granted by the Department of Regulatory Agencies (DORA) rather than a Certificate from the Department of Education.

Information: Direct line 303.914.6733 or 303.914.6737 TTY

Drug and Alcohol Abuse Information

The Law

Red Rocks is a state-system community college governed by the State Board for Community Colleges and Occupational Education. Board policy requires Red Rocks to comply with the Drug Free Schools and Communities Amendments of 1989 (PL-101-226) in federal law. A copy of this law is on file in the Office of Student Life.

Standard of Conduct

Neither students nor employees shall engage in the unauthorized or unlawful manufacture, distribution, 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, 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.

Illegal Substances

A listing of controlled substances is on file in the Office of the Vice President of Student Services.

Resources

A packet containing a list of community resources is available through the Connect to Success Office, room 1655, 303.914.6317. 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." For 24-hour assistance, call:

- National Alcohol and Substance Abuse Hotline, 1.800.784.6776
- National HOPEline Network, 1.800.273.8255

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.

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
- major field of study
- participation in officially recognized activities and sports
- dates of attendance
- degrees and certificates awarded
- 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 Student Records. Your directory restriction will remain in effect until you cancel the request for non-disclosure.

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 Student Records at 303.914.6356

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

STUDENT RIGHTS

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. 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, the Colorado Department of Higher Education, the National Student Clearinghouse; 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. Upon request, the college also discloses education records without consent to officials of another school in which a student seeks or intends to enroll.

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

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Foreign Languages	93	Water Quality Management Technology	132
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Accounting

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.

Degrees: Associate of Applied Science

Accounting Paraprofessional Accounting Technician

Certificates:

Bookkeeping Clerk Accounting Clerk

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 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 116 Personal Finance or faculty advisor approved elective	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication & Report Writing	3
CIS 145 Complete PC Database: Access	3
Faculty advisor-approved business electives	4
General Education Courses Required	
COM 105 Career Communication or	
COM 125 Interpersonal Communication	3
ENG 121 English Composition I	3
MAT 107 Career Math/Business or any higher MAT course	3
Credit from two of the following areas: Social Science, Arts and Humanities, Science	6
Total Credits	60

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 elective	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 116 Personal Finance or faculty advisor approved elective	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
Faculty advisor-approved business electives	6
General Education Courses Required	
COM 105 Career Communication or	
COM 125 Interpersonal Communication	3
ENG 121 English Composition I	3
MAT 107 Career Math/Business or any higher MAT course	3
Credit from two of the following areas Social Science, Arts and Humanities, Science	6
Total Credits	60

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	3 or 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
Total Credits	14-15

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 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
BUS 116	Personal Finance or faculty advisor approved elective	3
CIS 118	Introduction to PC Applications	3
Total Credits		31

Air Conditioning, Heating and Refrigeration

This program provides the knowledge and skills for 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. All heating, air conditioning, and refrigeration classes will be updated to reflect today's changing energy efficiency requirements. LEED requirements will be incorporated into all curriculum and additional classes will be offered to support the new energy efficiency needs. Please consult with a construction technology advisor at 303.914.6367.

Bachelor of Science transfer program: All Construction Technology Associate of Applied Science graduates are eligible to participate in the Colorado Community College Pathways program, a strategic partnership between DeVry University – Colorado and Red Rocks Community College. Students may transfer 80+ credit hours from Red Rocks Community College to DeVry University and complete a Bachelor of Science in Technical Management in as few as two semesters. Additionally, graduates of the HVAC/R Program may transfer to Ferris State University to pursue a baccalaureate degree. Contact your Construction Technology advisor for details.

Related course work may be found under Carpentry, Construction Technology, Electricity, Industrial Maintenance Technology, Plumbing, Process Technology, and Renewable Energy Technology.

Degrees: Associate of Applied Science

Air Conditioning, Heating and Refrigeration
Air Conditioning
Refrigeration
Heating
Hydronic Heating

Certificates:

Air Conditioning
Level I Refrigeration
Level II Refrigeration
Refrigeration
HVAC Fundamentals
HVAC Controls Technician
Forced-Air Heating
Hydronic Heating
Air Conditioning, Heating/Refrigeration
Apprenticeship Program

AAS Degree

Air Conditioning, Heating and Refrigeration

Required Courses	Credits
Level I Refrigeration Certificate	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 International Mechanical Code	4
HVA 240 Servicing Forced Air Systems	4
HVA 247 Hot Water Heating Systems	4
Construction Technology Core Requirements	10
Choose a minimum of 10 credits from the following course prefixes: CON, ENT, ENY AEC, OSH.	
General Education Requirements	15
Total Credits	67

AAS Degree

Air Conditioning

Required Courses	Credits
Air Conditioning Certificate	34
HVA 263 Chillers	4
Construction Technology Core Requirements	10
Choose a minimum of 10 credits from the following course prefixes: ENT, ENY AEC, OSH.	
General Education Requirements	15
Total Credits	63

AAS Degree

Refrigeration

Required Courses	Credits
Refrigeration Certificate	30
HVA 231 Pneumatic Controls	4
HVA Electives	4
Construction Technology Core Requirements	10
Choose a minimum of 10 credits from the following course prefixes: ENT, ENY AEC, OSH.	
General Education Requirements	15
Total Credits	63

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 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 247 Hot Water Heating Systems	4
HVA 257 Low Pressure Steam Heating	4
Construction Technology Core Requirements	10
Choose a minimum of 10 credits from the following course prefixes: ENT, ENY AEC, OSH.	
General Education Requirements	15
Total Credits	62

AAS Degree

Hydronic Heating

Required Courses	Credits
Hydronic Heating Certificate	37
Construction Technology Core Requirements	10
Choose a minimum of 10 credits from the following course prefixes: ENT, ENY AEC, OSH.	
General Education Requirements	15
Total Credits	62

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 International Mechanical Code	4
HVA 261 Air Conditioning Systems Service and Repair	4
Total Credits	34

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

Certificate

Level II Refrigeration

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

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 International Mechanical Code	4
HVA xxx HVA Electives	4
Total Credits	30

Certificate

HVAC Fundamentals

Required Courses	Credits
OSH 127 10-HR Construction Industry Standards	1
HVA 102 Basic Refrigeration	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 113 Refrigerant Recovery Training	1
Total Credits	14

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
Total Credits	21

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	4
HVA 206 International Mechanical Code	4
PLU 150 Code and Piping Calculations	2
PLU 208 Fuel Gas Code	4
HVA 240 Servicing Residential Forced Air Systems	4
Total Credits	33

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 International 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
Total Credits	37

Certificate

Air Conditioning, Heating/Refrigeration

Apprenticeship Program

Required Courses	Credits
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 International Mechanical Code	4
Total Credits	34

Applied Technology

Degree: Associate of Applied Science

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.

Required Courses	Credits
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
Approved electives	7
Total Credits	60

Auto Collision Technology

(In cooperation with and taught at Warren Tech)

This is a Nationally Certified Auto Collision Repair program that uses the I-CAR live curriculum 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 45 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. Students must comply with personal and environmental safety practices in accordance with local, state, and federal safety and environmental regulations.

Degree: Associate of Applied Science

Auto Collision Technology

Certificates:

NATEF Non-Structural Analysis and Damage Repair

NATEF Painting and Refinishing

NATEF Structural Analysis and Damage Repair

Estimating & Management

AAS Degree

Auto Collision Technology

Required Courses	Credits
A minimum of 45 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 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
General Education Requirements		15
Total Credits		60

requirements:		
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
Total Credits		27

Certificates (NATEF)

For the following certificates, you must successfully complete the following CORE courses (prerequisites) or obtain faculty consent:

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 211	Metal Welding and Cutting II	2

Choose from the following to complete credit requirements:

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
Total Credits		30

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 241	Paint Defects	3
ACT 242	Surface Preparation II	2
ACT 243	Refinishing II	2
ACT 244	Final Detail	2

Choose from the following to complete credit

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 211	Metal Welding and Cutting II	2
ACT 220	Structural Repair II	4
ACT 231	Advanced Structural Damage Diagnosis and Repair	3
ACT 232	Fixed Glass Repair	2

Choose from the following to complete credit requirements:

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
Total Credits		24

Certificate

Estimating and Management

Required Courses		Credits
ACT 205	Estimating and Shop Management	3
ACT 226	Production	4
ACT 244	Final Detail	2

Choose from the following to complete credit requirements:

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
Total Credits		20

Automotive Service Technology

(In cooperation with and taught at WarrenTech)

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. Demonstrated mastery of skills is required and all tasks must be completed to satisfy industry standards. All automotive (ASE) courses are held at the WarrenTech automotive classroom/lab. 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

Automotive Service Technology

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

AAS Degree

Automotive Service Technology

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
DPM 106 Diesel Fuel System	3
General Education Requirements	15
Total Credits	79.5

NATEF Specialty Area Certificate

Lubrication and tire service

Required Courses	Credits
ASE 101 Auto Shop Orientation	2
ASE 102 Introduction to the Auto Shop	2
(Both courses are required for all new students)	
Total Credits	4

NATEF Specialty Area Certificate

Brake specialist

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

NATEF Specialty Area Certificate

Suspension and Steering

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

NATEF Specialty Area Certificate

Heating and Air Conditioning

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

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
Total Credits	6

NATEF Specialty Area Certificate

Automatic Transmission/Transaxles

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

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
Total Credits	11

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
Total Credits	10

NATEF Specialty Area Certificate

Engine Repair

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

NATEF Specialty Area Certificate

Auto Parts Specialist

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

Biology

Degree: Associate of Science

The completion of the following courses is appropriate if you are planning to transfer to a four-year college or university to complete a major in biology. You should consult with a biology faculty advisor before beginning any program of study. These courses provide the basic preparation leading to biology-related careers. Some courses might not be offered each semester.

Required Courses	Credits
BIO 111 General College Biology I*	5
BIO 112 General College Biology II*	5
MAT 121 College Algebra*	4
BIO 201 Human Anatomy and Physiology I	4
BIO 202 Human Anatomy and Physiology II	4
BIO 204 Microbiology	4
*Fulfills General Education requirements	
Additional General Education Courses	27
Approved electives	7
Total Credits	60

Building Codes

(See Construction Technology)

Building Maintenance

(See Construction Technology)

Business

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.

Degree: Associate of Arts

Business

Degrees: Associate of Applied Science

Business - Interdisciplinary

Business - Management and Supervision

Business - Real Estate

Certificates:

Management and Supervision

Real Estate

Registered Appraiser

Small Business Startup

AA Degree

Business

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

Required 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 and Report Writing	3
BUS 226 Business Statistics	3
General Education Courses	
Communication (3 courses)	9
COM 125 is not accepted for this degree	
Arts and Humanities (2 courses)	6
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	3
And a HIS course from AA Degree Requirements list	3
Physical and Life Sciences (2 courses)	8
Total Credits	60

AAS Degree

Business – Interdisciplinary

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

Required Courses	Credits
ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
BUS 115 Introduction to Business	3
BUS 116 Personal Finance or faculty approved elective	3
BUS 120 Introduction to E-Commerce	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication and Report Writing	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
Faculty advisor-approved business electives	1
Interdisciplinary credits	15
Fifteen credits in 100-level courses (or higher) in one vocational program within the Community Colleges of Colorado or the equivalent through an articulation agreement. See faculty advisor.	
General Education Courses Required	
ENG 121 English Composition I	3
MAT 107 Career Math/Business or any MAT course 100 or higher	3
ECO 201 Principles of Macroeconomics	3
PHI 112 Ethics	3
Faculty advisor-approved general education elective	3
Total Credits	60

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 116 Personal Finance or faculty approved elective	3
BUS 120 Introduction to E-Commerce	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication and Report Writing	3
CIS 118 Introduction to PC Applications	3
MAN 116 Principles of Supervision	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
Faculty advisor-approved business electives	10
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
Faculty advisor-approved general education elective	3
Total Credits	60

AAS Degree

Business – Real Estate

Required Courses	Credits
ACC 121 Accounting Principles I	4
ACC 122 Accounting Principles II	4
BUS 115 Introduction to Business	3
BUS 116 Personal Finance or faculty approved elective	3
BUS 120 Introduction to E-Commerce	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication and Report Writing	3
CIS 118 Introduction to PC Applications	3
MAN 116 Principles of Supervision	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
REE 201 Real Estate Brokers I	6
REE 202 Real Estate Brokers II	6
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
Faculty advisor-approved general education elective	3
Total Credits	62

Certificate

Management and Supervision

Required Courses	Credits
ACC 121 Accounting Principles I	4
BUS 115 Introduction to Business	3
BUS 116 Personal Finance or faculty approved elective	3
BUS 216 Legal Environment of Business	3
BUS 217 Business Communication and Report Writing	3
CIS 118 Introduction to PC Applications	3
MAN 116 Principles of Supervision	3
MAN 226 Principles of Management	3
MAR 216 Principles of Marketing	3
Faculty advisor-approved program electives	2
Total Credits	30

Certificate

Real Estate

Required Courses	Credits
REE 201 Real Estate Brokers I	6
REE 202 Real Estate Brokers II	6
Total Credits	12

Certificate

Registered Appraiser

Required Courses	Credits
REE 119 15-Hour National USPAP Course	1
REE 120 Basic Appraisal Principles	2
REE 121 Basic Appraisal Procedures	2
Total Credits	5

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	
Faculty advisor-approved program elective	1
Total Credits	8

Business Technology

Degree: Associate of Applied Science

Administrative Professional

Certificates:

Clerical Assistant Office Professional

These program options are designed to prepare 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: MS Word	3
CIS 140 Microsoft Outlook	1
CIS 145 Complete PC Database: MS Access	3
CIS 155 PC Spreadsheet Concepts: MS Excel	3
CIS 165 Presentation Graphics: MS PowerPoint	3
General Education Courses	16
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
Total Credits	20

Certificate

Office Professional

Required Courses	Credits
BTE 100 Computer Keyboarding	1
BTE 102 Keyboarding Applications I	2
BTE 111 Keyboarding Speedbuilding I	2
BTE 125 Records Management	3
BTE 166 Business Editing Skills	3
BTE 225 Administrative Office Management	3
BTE 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: MS Word	3
CIS 155 PC Spreadsheet Concepts: MS Excel	3
CIS 165 Presentation Graphics: MS PowerPoint	3
MAT 107 Career Math/Business	3
Total Credits	34

Carpentry

Degree: Associate of Applied Science

Carpentry

Certificate: Carpentry

This program provides theory and hands-on training for job-entry skills through craftsman-level competencies in a variety of areas, in addition to general carpentry classes. All courses include current industry topics such as green building, energy conservation and efficiency techniques. Areas of emphasis are designed to meet individual needs, whether you are a part-time or full-time student. All classes are open to all skill levels unless otherwise noted. Tools are provided for entry level

classes; personal tool requirements may increase with proficiency.

Advising: Please contact the Construction Technology office directly at 303.914.6511 for information about the programs. You will be assigned an advisor in your program area.

Bachelor of Science transfer program: All Construction Technology programs' associate of applied science graduates are eligible to participate in the Colorado Community College Pathways program, a strategic partnership between DeVry University – Colorado and Red Rocks Community College. Students may transfer 80+ credit hours from Red Rocks Community College to DeVry University and complete a bachelor of science in Technical Management in as few as two semesters. Additional transfer options may be available in individual program areas. Contact your Construction Technology advisor for details.

Related course work may be found under Air Conditioning, Heating and Refrigeration, Construction Management/Technology, Electricity, Fine Woodworking, Industrial Maintenance Technology, Plumbing, Process Technology, and Renewable Energy Technology.

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 and Finish Methods	4
CAR 155 Interior Trim-Built-ins	4
CAR 166 Stair Design & Construction	4
CAR/FIW Electives	8
General Education Requirements	15
Construction Technology Requirements	10
Total Credits	61

Certificate

Carpentry

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

Chemistry

Degree: Associate of Science

The completion of the following courses is appropriate for those planning to transfer to a four-year college or university to complete a major in chemistry. You are urged to consult with a chemistry faculty advisor before beginning any program of study. These courses provide the basic preparation leading to chemistry-related careers. Some courses might not be offered each semester.

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

Communication

Degrees: Associate of Arts

Communication Disorders (Speech – Language Pathology and Audiology) Communication Studies

AA Degree

Communication Disorders

This program is designed to provide orientation into a course of study in communication disorders, which usually includes speech-language pathology or audiology. The program will prepare you to pursue an undergraduate degree in the speech-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.

Required Courses	Credits
CMD 160 Introduction to Human Communication Disorders	3
CMD 260 Introduction to Phonetics	2
CMD 265 Physiological and Biological Acoustics	2
CMD 266 Normal Language Development	3
CMD 267 Anatomy and Physiology of the Speech and Hearing Mechanism	3
ASL 121 American Sign Language	5
COM 125 Interpersonal Communication*	3
or	

COM 126	Communication in Healthcare	3
BIO 201	Human Anatomy and Physiology I	4
*Fulfills General Education requirement		
General Education Courses		35
Recommended General Education courses:		
BIO 111	General College Biology	5
MAT 121	College Algebra	4
Total Credits		60
Highly recommended for transfer to UNC (Consult a faculty advisor):		
BIO 202	Human Anatomy and Physiology II	4

AA Degree

Communication Studies

The study of 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.

Required Courses	Credits
COM 115 Public Speaking*	3
COM 125 Interpersonal Communication*	3
COM 216 Principles of Speech Communication II	3
COM 217 Group Communication	3
COM 220 Intercultural Communication	3
COM 230 Argumentation and Debate	3
*Fulfills General Education requirement	
Additional General Education Courses	35
Approved Electives	7
Total Credits	60
Recommended Approved Elective course:	
ASL 121 American Sign Language	5

Computer Information Systems

Degrees: Associate of Applied Science

Cisco Network Associate
Computer Support Technician
Game Arts and Development
Microsoft Web/Windows Developer (MCPD)
Microsoft Database Administrator (MCITP)
Microsoft Server Administrator (MCITP)
Oracle Database Administrator
PC Applications Specialist
Programming Specialist
Web Design
Web Development

Certificates:

Cisco Network Associate
Computer Support Technician
Game Development
Microsoft Web/Windows Developer (MCPD)
Microsoft Database Administrator (MCITP)
Microsoft Server Administrator (MCITP)
Oracle Database Administrator
PC Applications Specialist
Programming Specialist
Web Design
Web Development

Computer Information Systems Requirements for all AAS Degrees

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

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
COM 115	Public Speaking	
or		
THE 118	Acting Skills: Trades/Business	3
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, ITA, JPN, LIT, MUS, PHI, SPA, THE)		
Science (AST, BIO, CHE, ENV, GEY, PHY, SCI)		
Social and Behavioral Science (ANT, ECO, GEO, HIS, POS, PSY, SOC)		
Total Credits		28-29

AAS Degree

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
CIS 220	Fundamentals of UNIX	3
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
Required Credits		34
Computer Information Systems Requirements		28-29
Total Credits		62-63

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
CIS 220	Fundamentals of UNIX	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 131	Network Security Fundamentals	3
CNG 209	MS Server Active Directory Configuration	4
CNG 211	Windows Configuration: Vista	3
CNG 212	Manage MS Server Environment	4
Faculty advisor-approved elective		3
Required Credits		34
Computer Information Systems Requirements		28-29
Total Credits		62-63

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
CIS 220	Fundamentals of UNIX	3
CSC 119	Introduction to Programming	3
CSC 236	C# Programming	4
or		
CSC 160	Computer Science I: C++	4
CWB 162	Introduction to Image Editing: Photoshop	3
or		
MGD 111	Adobe Photoshop I	3
CWB 245	Complete Web Animation: Flash	3
or		
MGD 143	Motion Graphics Design: Flash	3
CSC 126	Game Design and Development	3
or		
MGD 167	Game Design I	3
CSC 227	3D Game Programming	3
CSC 228	3D Game Scripting	3
CWB 262	Advanced Image Editing: Photoshop	3
or		
MGD 211	Adobe Photoshop II	3
Choose two electives		6-7
CSC 161	Computer Science II	4
CSC 240	Java Programming	3
CSC 251	Programming in Visual Basic .NET	3
CSC 261	Programming in C#.NET	3

MGD 119	Maya I	3
MGD 219	Maya II	3
Required Credits		34-35
Computer Information Systems Requirements		28-29
Total Credits		62-64

AAS Degree

Microsoft Web/Windows Developer (MCPD)

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

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 154 Introduction to MS Visual Basic .NET (OOP) 3 or	3
CSC 236 C# Programming	4
CWB 110 Complete Web Authoring: HTML	3
CWB 164 XML	3
CIS 240 Database Design and Development	3
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
CIS 252 Implement and Maintain SQL Server Database	3
Required Credits	33-34
Computer Information Systems Requirements	28-29
Total Credits	61-63

AAS Degree

Microsoft Database Administrator (MCITP)

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

Required Courses	Credits
CSC 160 Computer Science I or	4
CSC 236 C# Programming	4
CIS 220 Fundamentals of Unix	3
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
CSC 250	Programming with MS ADO .NET	3
CWB 110	Complete Web Authoring: HTML	3
CWB 164	XML	3
Choose two of the following		6
CSC 253	MS ASP .NET Web Application Development	3
CSC 262	VS.NET Application Development: VB & C#	3

Faculty advisor-approved elective

Required Credits	34
Computer Information Systems Requirements	28-29
Total Credits	62-63

AAS Degree

Microsoft Server Administrator (MCITP)

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

Required Courses	Credits
CIS 220 Fundamentals of Unix	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 209 MS Server Active Directory Configuration	4
CNG 210 MS Server Network Configuration	4
CNG 211 Windows Configuration: Vista	3
CNG 212 Manage MS Server Environment	4
Required Credits	32
Computer Information Systems Requirements	28-29
Total Credits	60-61

AAS Degree

Oracle Database Administrator

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

Required Courses	Credits
CIS 220 Fundamentals of UNIX	3
CSC 236 C# Programming or	4
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
CWB 110 Complete Web Authoring	3
CWB 164 XML	3
Required Credits	34
Computer Information Systems Requirements	28-29
Total Credits	62-63

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 Certified Application Specialist examinations.

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: MS Word	3
CIS 145 Complete PC Database: MS Access	3
CIS 155 PC Spreadsheet Concepts: MS Excel	3
CIS 165 Complete Presentation Graphics: MS PowerPoint	3
CNG 101 Introduction to Networking	3
CWB 110 Complete Web Authoring: HTML	3
Faculty advisor-approved electives	6
Required Credits	34
Computer Information Systems Requirements	28-29
Total Credits	62-63

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.

Required Courses	Credits
CSC 119 Introduction to Programming and either	3
CSC 154 Introduction to MS Visual Basic .NET (OOP) or	3
CSC 236 C# Programming or only	4
CSC 160 Computer Science I	4
CIS 240 Database Design and Development	3
CNG 101 Introduction to Networking	3
CIS 220 Fundamentals of UNIX	3
CIS 221 UNIX Shellscripting or	3
CWB 205 Complete Web Scripting: JavaScript	3
Two object-oriented programming languages with at least one second semester course	6
Faculty advisor-approved electives	12
Required Credits	34-37
Computer Information Systems Requirements	28-29
Total Credits	62-66

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.

Required Courses	Credits
CIS 128 Windows Complete	3
CIS 220 Fundamentals of Unix	3
CSC 119 Introduction to Programming	3
CWB 110 Complete Web Authoring: HTML	3
CWB 130 Complete Web Editing Tools: Dreamweaver	3
CWB 162 Image Editing I: Photoshop	3
CWB 205 Complete Web Scripting: JavaScript	3
CWB 245 Complete Web Animation I: Flash	3
CWB 246 Complete Web Animation II: Flash	3
CWB 262 Image Editing II: Photoshop	3
Faculty advisor-approved electives	6
Required Credits	36
Computer Information Systems Requirements	28-29
Total Credits	64-65

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
CSC 119 Introduction to Programming	3
CSC 154 Introduction to MS Visual Basic .NET (OOP) or	3
CSC 236 C# Programming	4
CIS 220 Fundamentals of UNIX	3
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CSC 240 Java Programming or	3
CSC 251 Programming in VB.NET or	3
CSC 261 Programming in C# .NET	3
CWB 164 XML	3
CSC 248 Internet Java Programming or	3
CSC 253 MS ASP .NET Web Application Development	3
CWB 205 Complete Web Scripting: JavaScript	3
CWB 208 Web Application Development: PHP	3
Required Credits	33-34
Computer Information Systems Requirements	28-29
Total Credits	61-63

Certificate

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
CIS 220 Fundamentals of UNIX	3
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
Total Credits	34

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
CIS 220 Fundamentals of UNIX	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 131 Network Security Fundamentals	3
CNG 209 MS Server Active Directory Configuration	4
CNG 211 Windows Configuration: Vista	3
CNG 212 Manage MS Server Environment	4
Faculty advisor-approved elective	3
Total Credits	34

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.

Required Courses	Credits
CWB 162 Intro to Image Editing: Photoshop	3
or	
MGD 111 Adobe Photoshop I	3
CSC 119 Introduction to Programming	3
CSC 236 C# Programming	4
or	

CSC 160 Computer Science I: C++	4
CIS 220 Fundamentals of UNIX	3
CWB 245 Complete Web Animation: Flash	3
or	
MGD 143 Web Motion Graphics Design I: Flash	3
CSC 126 Game Design and Development	3
or	
MGD 167 Game Design I	3
CSC 227 3D Game Programming	3
CSC 228 3D Game Scripting	3
CWB 262 Advanced Image Editing: Photoshop	3
or	
MGD 211 Adobe Photoshop II	3
Choose two electives	6-7
CSC 161 Computer Science II	4
CSC 240 Java Programming	3
CSC 251 Programming Visual Basic.NET	3
CSC 261 Programming C#.NET	3
Total Credits	34-35

Certificate

Microsoft Web/Windows Developer (MCPD)

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

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 154 Introduction to MS Visual Basic .NET (OOP)	3
or	
CSC 236 C# Programming	4
CWB 110 Complete Web Authoring: HTML	3
CWB 164 XML	3
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CSC 251 Programming in Visual Basic .NET	3
or	
CSC 261 Programming in C# .NET	3
CSC 250 Programming with MS ADO .NET	3
CSC 253 MS ASP .NET Web Application	3
Development	3
CSC 262 VS.NET Application Development:	3
VB & C#	3
CIS 252 Implement and Maintain SQL Server	3
Database	3
Total Credits	33-34

Certificate

Microsoft Database Administrator (MCITP)

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

Required Courses	Credits
CSC 160 Computer Science I or	4
CSC 236 C# Programming	4
CIS 220 Fundamentals of Unix	3
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
CSC 250 Programming with MS ADO .NET	3
CWB 110 Complete Web Authoring: HTML	3
CWB 164 XML	3
Choose two of the following:	6
CSC 253 MS ASP .NET Web Application Development	3
CSC 262 VS.NET Application Development: VB & C#	3
Faculty advisor-approved elective	
Total Credits	34

Certificate

Microsoft Server Administrator (MCITP)

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

Required Courses	Credits
CIS 220 Fundamentals of Unix	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 209 MS Server Active Directory Configuration	4
CNG 210 MS Server Network Configuration	4
CNG 211 Windows Configuration: Vista	3
CNG 212 Manage MS Server Environment	4
Total Credits	32

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
CIS 220 Fundamentals of UNIX	3
CSC 236 C# Programming or	4
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
CWB 110 Complete Web Authoring	3
CWB 164 XML	3
Total Credits	34

Certificate

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 certification examinations.

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: MS Word	3
CIS 145 Complete PC Database: MS Access	3
CIS 155 PC Spreadsheet Concepts: MS Excel	3
CIS 165 Complete Presentation Graphics: MS PowerPoint	3
CNG 101 Introduction to Networking	3
CWB 110 Complete Web Authoring: HTML	3
Faculty approved electives	6
Total Credits	34

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
CSC 119	Introduction to Programming and either	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) 3 or	3
CSC 236	C# Programming or only	4
CSC 160	Computer Science I	4
CIS 220	Fundamentals of UNIX	3
CIS 240	Database Design and Development	3
CNG 101	Introduction to Networking	3
CIS 221	UNIX Shellscripting or	3
CWB 205	Complete Web Scripting: JavaScript	3
CIS 268	System Analysis and Design	3
Two object-oriented programming languages with at least one, second-semester course		6
Faculty advisor-approved electives		9
Total Credits		34-37

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 programs, all focusing on page design and implementation.

Required Courses		Credits
CIS 128	Windows Complete	3
CIS 220	Fundamentals of UNIX	3
CSC 119	Introduction to Programming	3
CWB 110	Complete Web Authoring: HTML	3
CWB 130	Complete Web Editing Tools: Dreamweaver	3
CWB 162	Image Editing I: Photoshop	3
CWB 205	Complete Web Scripting: JavaScript	3
CWB 245	Complete Web Animation I: Flash	3
CWB 246	Complete Web Animation II: Flash	3
CWB 262	Image Editing II: Photoshop	3
Faculty advisor-approved electives		6
Total Credits		36

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
CSC 119	Introduction to Programming	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) 3 or	3
CSC 236	C# Programming	4
CIS 220	Fundamentals of UNIX	3
CIS 240	Database Design and Development	3
CIS 251	Intro. to Structured Query Language (SQL)	3
CSC 240	Java Programming or	3
CSC 251	Programming in VB.NET or	3
CSC 261	Programming in C#.NET	3
CWB 164	XML	3
CSC 248	Internet Java Programming or	3
CSC 253	MS ASP .NET Web Application Development	3
CWB 205	Complete Web Scripting: JavaScript	3
CWB 208	Web Application Development: PHP	3
Total Credits		34-35

Computer Science

Important note: Please refer to the CIS department Web site, 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.

Required Courses		Credits
CSC 160	Computer Science I	4
CSC 161	Computer Science II	4
CSC 165	Discrete Structures	3
MAT 201	Calculus I*	5
MAT 202	Calculus II*	5
PHY 211	Physics: Calculus-based I*	5
PHY 212	Physics: Calculus-based II*	5
*Fulfills General Education Requirements		
Additional General Education Courses		24
Approved Electives		5
Total Credits		60

Construction Management and Technology Programs

Information for Students in All Construction Technology Programs:

Construction Technology Core Requirements and General Education Requirements are included in most program areas degree requirements. The basic requirements are outlined below. A Construction Technology advisor will work with you to identify courses within the area which complement your career goals.

Construction Technology Core Requirements

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

General Education Requirements

English/Communication: 3

ENG, COM 100 or higher

Mathematics: 3

MAT 107-Technical or higher

Choose from any two of the following areas: 6

Humanities:

ART, FRE, GER, HUM, LIT, MUS, PHI, SPA

Science:

AST, BIO, CHE, GEY, PHY

Social and Behavioral Sciences:

ANT, ECO, GEO, HIS, POS, PSY, SOC

Three credits from the General Education Electives 3

(from any of the above prefixes) & CIS 118

Total General Education Requirements 15

Advising: Please contact the Construction Technology office directly at 303.914.6511 for information about the programs. You will be assigned an advisor in your program area.

Bachelor of Science transfer program: All Construction Technology programs' associate of applied science graduates are eligible to participate in the Colorado Community College Pathways program, a strategic partnership between DeVry University – Colorado and Red Rocks Community College. Students may transfer 80+ credit hours from Red Rocks Community College to DeVry University and complete a bachelor of science in Technical Management in as few as two semesters. Additional transfer options may be available in individual program areas. Contact your Construction Technology advisor for details.

Skills upgrade courses, certificates, and associate of applied science degrees are available in the following program areas. These programs offer core skills required to install and maintain new energy technologies using practices that promote energy efficiency and sustain our natural resources.

Air Conditioning, Heating and Refrigeration – Energy Efficiency

(See page 49.)

Carpentry – Energy Efficiency

(See page 58.)

Construction Management and Technology

(See page 67.)

Electricity: Commercial/Industrial/Residential – Energy Maintenance & Operations

(See page 76.)

Environmental Technology – Natural Resource Management

(See page 85.)

Fine Woodworking

(See page 86.)

Industrial Maintenance Technology – Energy Maintenance

(See page 92.)

Plumbing

(See page 115.)

Process Technology – Energy Operations

(See page 119.)

Renewable Energy Technology – Energy Efficiency

(See page 121.)

Water Quality Management – Environmental Technology

(See page 130.)

Wind Energy Technology – Energy Maintenance

(See page 133.)

Construction Management and Technology

Construction Technology coursework bridges all trade and specialty areas, providing the basic technology, supervision and management skills needed in all segments of the industry. Coursework in this program will provide the entry-level skills needed to begin a career in construction management, building maintenance, or the trades. In addition to the courses listed below, special topic seminars are offered each semester, allowing students to keep current with new trends in the industry such as LEED, BIM, energy conservation/efficiency management tools, green building techniques, etc. The flexible program allows you to choose courses that build on previous employment or academic experience. Consult with a Construction Technology advisor to develop your individual educational plan.

Information: 303.914.6512

Related course work may be found under Air

Conditioning, Heating and Refrigeration, Carpentry, Electricity, Fine Woodworking, Industrial Maintenance Technology, Plumbing, Process Technology, and Renewable Energy Technology.

Degrees: Associate of Applied Science

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

Certificates:

**Construction Management 1
Construction Management 2
Construction Management 3
Construction Technology Fundamentals
Construction Technology Technician
Building Maintenance Technician
Building Codes
International Residential Code
International Plumbing and Mechanical Codes**

AAS Degree

Construction Management

Major Requirements	Credits
Construction Management Certificate 3	46
General Education Requirements	15
Total Credits	61

Certificate

Construction Management 1

It is not required that courses be taken in this order: please consult with your construction management advisor to determine the most useful sequencing of courses to meet your career goals.

Requirements	Credits
CON 105 Construction Technology	4
CON 230 Blueprint Reading	4
ENT 146 Construction Materials and Methods	3
Construction Management Major Elective Options	4
Total Credits	15

Certificate

Construction Management 2

It is not required that courses be taken in this order: please consult with your construction management advisor to determine the most useful sequencing of courses to meet your career goals.

Requirements	Credits
Construction Management 1 Certificate	15
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
Construction Management Major Elective Options	4
Total Credits	30

Certificate

Construction Management 3

It is not required that courses be taken in this order: please consult with your construction management advisor to determine the most useful sequencing of courses to meet your career goals.

Requirements	Credits
Construction Management 2 Certificate	30
CON 245 Construction Project Management	4
Construction Management Major Elective Options	12
Total Credits	46

Construction Management Suggested Major Elective Options

CON 228 Estimating (EIC 217, Elect. Est. may be substituted)	4
CON 261 Leadership and Motivation	2
CON 263 Problem Solving and Decision Making	2
CON 264 Contract Documents and Construction Law	2
CON 266 Understanding and Managing Project Costs	2
CON 267 Accident Prevention and Loss Control	2
CON 268 Managing the Project	2
CON 269 Productivity Improvement	2
ACC 121 Accounting Principles 1	4
BUS 217 Business Communication and Report Writing	3

MAN, SBM. BUS, CIS courses as approved

Trade Classes: CAR, EIC, HVA, PLU, ENY (up to 8 credits)

CON 280 Internship	(1-6 credits)
CON 285 Independent Study	(1-6 credits)

Others as approved by Construction Management Advisor

Please be sure to discuss the alternative credit pathways with you're advisor, including: credit transfers from other colleges, credit for apprenticeship classes, and portfolio credit for prior learning (recognizing work-based skills which align with our coursework). Semester schedules should be checked for special topic seminars offered under the CON program which will address current industry topics and will qualify as major elective options.

AAS Degree

Construction Technology Technician

You must complete a minimum of 46 credits in a variety of construction areas. Meet with your Construction Technology advisor to design an educational plan. Construction Technology electives must be pre-approved by your Construction Technology advisor.

Requirements	Credits
Construction Technology Technician Certificate	30
Construction Technology Electives	16
General Education Requirements	15
Total Credits	61

Certificate

Construction Technology Fundamentals

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

Requirements	Credits
Construction Technology Core Requirements	10
Construction Technology Electives	4
Total Credits	14

Certificate

Construction Technology Technician

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

Requirements	Credits
Construction Technology Fundamentals Certificate	14
Construction Technology Electives	16
Total Credits	30

AAS Degree

Building Maintenance Technician

Requirements	Credits
Building Maintenance Technician Certificate	36
Construction Technology Core Requirements	10
General Education Requirements	15
Total Credits	61

Certificate

Building Maintenance Technician

You must complete a total of 36 credits, including one course from each of the four areas listed under "Building Maintenance Technician Elective Options." No more than four courses from any one area will count toward the completion of this certificate. Meet with your Construction Technology advisor to design an education plan.

Requirements	Credits
Building Maintenance Technician Electives	36
Construction Technology Core Requirements	10
Total Credits	46

Building Maintenance Technician Elective Options

Courses must be pre-approved by Construction Technology 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

AAS Degree Trades Degree

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

Certificate

Building Codes

Choose any two courses

	Credits
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
Total Credits	8

Certificate

International Residential Codes

Required Courses

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

Certificate

International Plumbing and Mechanical Codes

Required Courses

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

Cosmetology

(In cooperation with and taught at WarrenTech)

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:

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). In order to obtain this certificate, the hairstylist, manicurist, and esthetician programs must all be completed.

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
Total Credits		60

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
Total Credits	40

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
Total Credits	20

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
Total Credits	20

Criminal Justice

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), and Regis University. The associate of art degree in criminal justice is articulated with all state criminal justice/criminology bachelor degree programs 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. It is critical to consult with a criminal justice faculty advisor early in your college career to explore all your educational options. Articulations are pending with several four-year colleges in psychology, human services, social work and counseling psychology for the associate of art degree with an emphasis in victim assistance.

For information on the Criminal Justice Degree Program, go to: www.rccc.edu/criminal or call 303.914.6434.

For information on Law Enforcement Degrees and Certificates, go to: www.rccc.edu/lawenforcement.

Degree: Associate of General Studies

Criminal Justice

Degrees: Associate of Arts

Criminal Justice

Victim Assistance

AGS Degree

Criminal Justice

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. The AA degree in criminal justice transfers to all state criminal justice/criminology bachelor degree programs.

Required Courses

	Credits
CRJ 110 Introduction to Criminal Justice	3
CRJ 205 Principles of Criminal Law	3
CRJ 125 Law Enforcement Operations	3
CRJ 135 Judicial Function	3
CRJ 145 Correctional Process	3
CRJ 150 Victims of Crime and Trauma	3
CRJ 236 CRJ Research Methods	3
CRJ 289 Capstone	1

General Education Courses Required

38

Total Credits

61

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.

AA Degree Criminal Justice

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 criminal justice or criminology. You are urged to consult with a criminal justice advisor before beginning any program of study. These courses provide the basic preparation leading to criminal justice related careers. Some courses might not be offered each semester. Contact 303.914.6434 for advising.

Required Courses

	Credits
CRJ 110 Introduction to Criminal Justice	3
CRJ 125 Law Enforcement Operations	3
CRJ 135 Judicial Function	3
CRJ 145 Correctional Process	3
CRJ 150 Victims of Crime and Trauma	3
CRJ 205 Principles of Criminal Law	3
CRJ 236 CRJ Research Methods	3
CRJ 289 Capstone	1

General Education Courses Required

38

Total Credits

61

AA Degree

Victim Assistance

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 psychology, counseling psychology, social work or human services; with the intent of a career working with victims of crime and trauma. Contact criminal justice degree faculty for information on the AA in Victim Assistance at 303.914.6434 for advising.

Required Courses

	Credits
CRJ 110 Introduction to Criminal Justice	3
CRJ 150 Victims of Crime and Trauma	3
CRJ 151 Domestic Violence	3
CRJ 152 Sexual Assault	3
CRJ 205 Principles of Criminal Law	3

CRJ 225	Crisis Intervention	3
CRJ 239	Managing Emergency Worker Stress	3
CRJ 289	Capstone	1
General Education Courses Required		38
Total Credits		61

Culinary Arts

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

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 WarrenTech for five hours per week, 90 hours per semester. WarrenTech is not associated with the RMCC other than providing the location for class room instructions This VERY demanding six-semester (three-year) program will prepare and teach students to achieve certified culinarian status through the American Culinary Federation (ACF), while working full time!

This program will earn students a journeyman certificate through the United States Department of Labor. This program is not designed as a traditional college class and does not offer specific sections only. i.e. sauces or baking only. Interested students MUST read detailed information on RRCC culinary Web side prior to orientation sessions. Interested students MUST attend an orientation session as outlined on Web site.

Degree: Associate of Applied Science

Culinary Arts

Certificate: Culinary Arts

AAS Degree 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 281	Culinary Arts Internship 3	5

General Education Requirements

Required Courses		Credits
ENG 121	English Composition I	3
MAT 107	Career Math (or above)	3
COM 115	Public Speaking	3
CIS 118	Intro to PC Application	3
	Humanities elective	3
	Social Science elective	3
Total Credits		75

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
Total Credits		60

Early Childhood Education

All Early Childhood Education degrees and certificates require students to take the Accuplacer test before their first semester. You must earn a C or better in all ECE courses to graduate with a degree or certificate in Early Childhood.

Degree: Associate of Arts

Degree: Associate of Applied Science

Certificates:

Preschool Group Leader

Infant/Toddler Group Leader

Director Early Childhood Education

AA Degree

Early Childhood Education

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. You must earn a B or better in ENG 121 to receive the AA in Early Childhood Education.

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

Required 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
(Meet with a faculty advisor for institution-specific information.)	
Early Childhood Education	23
General Education Courses	38
Communication (3 courses) COM 125 not acceptable.	9
Mathematics (2 courses)	
MAT 155 Integrated Math I	3
MAT 156 Integrated Math II	3
or	
MAT 121 College Algebra	3
MAT 135 Intro to Statistics	3

Dance

Degree: Associate of Arts Emphasis in Dance

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 Dance. This program provides basic preparation leading to dance related careers, as well as to the teaching of dance. Consult with a faculty advisor before beginning any program of study.

Required Courses	Credits
DAN 111 Modern Dance I	1
DAN 112 Modern Dance II	1
DAN 113 Modern Dance III	1
DAN 121 Jazz I	1
DAN 122 Jazz II	1
DAN 123 Jazz III	1
DAN 125 History of Dance	3
DAN 129 Introduction to Dance	1
or	
DAN 141 Ballroom Dance	1
DAN 131 Ballet I	1
DAN 132 Ballet II	1
DAN 133 Ballet III	1
DAN 143 Tap I	1
DAN 151 Belly Dance I	1
or	
DAN 105 Hip Hop I	1
DAN 152 Belly Dance II	1
or	
DAN 106 Hip Hop II	1
DAN 154 Dance and Stage Movement	3
or	
DAN 211 Dance Composition	3
DAN 221 Dance Performance	2
DAN 251 Belly Dance III	1
Or any other one credit DAN course	
In addition to the above, include General Education transfer requirements for A.A. degrees at Red Rocks Community College.	
Total Required Credits	60

Diagnostic Medical Sonography

(See Sonography)

Arts and Humanities (2 courses)

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

Science (2 courses)

SCI 155	Integrated Science I	4
SCI 156	Integrated Science II	4

Social Sciences (3 courses)

GEO 105	World Regional Geography	3
HIS 201	U.S. History I	3
POS 111	American Government	3

Total Credits 61

AAS Degree**Early Childhood Education (pending approval)**

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
ECE 111	Infant and Toddler Theory and Practice	3
ECE 256	Working with Parents, Families and Community Systems	3
ECE 260	The Exceptional Child	3
ECE 288	Practicum in Early Childhood Education	4

Specific Program Requirements

CIS 118	Introduction to PC Applications	3
	or	
EDU 261	Teaching, Learning and Technology	3

General Education Requirements

ENG 121	(or above) English Composition I	3
COM 125	Interpersonal Communication	3
MAT 107	Career math (or above)	3

Credit from two of the following areas:

Arts and Humanities, Science, Social Sciences 6

Faculty advisor-approved electives from above 3

Total Credits 60

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

Total Credits 17

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

Total Credits 16

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 the 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 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 111 Infant and Toddler Theory and Practice	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
ECE 260 The Exceptional Child	3
Total Credits	32

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 because it uses an extensive lab environment for important, hands-on experience in electrical classes. For advising, please call 303.914.6511.

Bachelor of Science transfer program: All Construction Technology associate of applied science graduates are eligible to participate in the Colorado Community College Pathways program, a strategic partnership between DeVry University – Colorado and Red Rocks Community College. Students may transfer 80+ credit hours from Red Rocks Community College to DeVry University and complete a bachelor of science in Technical Management in as few as two semesters. Contact your Construction Technology advisor for details.

Related course work may be found under Air Conditioning, Heating and Refrigeration, Carpentry, Construction Technology, Industrial Maintenance Technology, Plumbing, Process Technology, and Renewable Energy Technology.

Degrees: Associate of Applied Science

**Construction Electrician
Maintenance Electrician
Fire Protection Technology
Construction Electrician/IBEW/NECA
Power Technology**

Certificates:

**Electrical Installation
National Electrical Code
Electrical Codes and Standards
Residential Construction Electrician
Construction Electrician
Advanced Construction Electrician**

Economics

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.

Degree: Associate of Arts

Required 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
Approved Electives	15
Total Credits	60

Maintenance Electrician
Introduction to Instrumentation and
Controls Technician
Advanced Instrumentation and Controls
Technician
Advanced Maintenance Electrician
Post-Degree Specialization for Advanced
Fire Code
Introduction to Fire Alarm Technician
Fire Alarm and Detection Technician
Post-Degree Specialization for Advanced
Construction Electrician

AAS Degree

Construction Electrician

This degree can eliminate up to one year of apprenticeship hours required by the State of Colorado to become a licensed electrician.

Required Major Courses	Credits
EIC 100 Electrical Construction and Planning	4
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 130 National 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 220* Advanced Industrial Controls	4
EIC 240* Fire Alarm Fundamentals	4

* Choose two of these courses
Total Required Major Credits: 36

Construction Technology Core Requirements 10

Choose a minimum of 10 credits from the following course prefixes: CON, ENT, ENY AEC, OSH. Also EIC 217 and EIC 211

General Education Requirements 15
Total Credits 61

AAS Degree

Maintenance Electrician

This degree can eliminate up to one year of apprenticeship hours required by the State of Colorado to become a licensed electrician.

Required Courses	Credits
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 167* Electrical Maintenance	4
EIC 130 National Electrical Code I	4
EIC 220 Advanced Industrial Controls	4
EIC 223* Advanced Industrial Controls	4
EIC 225 Programmable Controllers	4
EIC 230* Instrumentation and Controls I	4

* Choose four of these courses

Total Major Credits 36

Construction Technology Requirements 10

Choose a minimum of 10 credits from the following course prefixes: CON, ENT, ENY AEC, OSH, also EIC 211 and EIC 217.

General Education Requirements 15
Total Credits 61

AAS Degree

Fire Protection Technology

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

Required Courses	Credits
AEC 221* Building Electrical/Mechanical Systems	3
CON 105* Construction Technology	4
CON 245* 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 155* AC 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.	
Total Major Credits (minimum)	47
General Education Requirements	15
Total Credits (minimum)	62

AAS Degree

Construction Electrician/IBEW/NECA

Combine your four or five years of apprenticeship with general education classes at RRCC for an associate of applied science degree via an articulation agreement between IBEW/NECA and RRCC.

The objective of the program is to allow members who have served their apprenticeship program through the National Joint apprenticeship (NJATC) to earn associate's degrees. This program allows you to combine your excellent trade skills with your academic skills. Upon completion of 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 RRCC Online. You must show proof of completion of IBEW/NECA Wireman or Outside Lineman NJATC programs.

Consult with a Construction Technology advisor for details.

AAS Degree

Power Technology

This associate of applied science degree is available for only those who have completed or are currently enrolled in a power utility based apprenticeship. RRCC's Construction Technology Electrical Program will grant 43 college credits toward an AAS degree. The degree requires a total of 61 credits, of which 18 must be taken at RRCC or through RRCC Online. By using your apprentice training and taking only six additional classes, you may obtain a degree online, at home, and at times of your choosing. Consult with a Construction Technology advisor for details.

Emphasis determined by the apprenticeship program completed:

- 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

Certificate

Relating to AAS/Construction Electrician

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
Total Credits	16

Certificate

Relating to AAS/Construction Electrician

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
Total Credits	12

Certificate

Relating to AAS/Construction Electrician

Electrical Codes and Standards

Required Courses	Credits
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 169 Electrical Code Calculations	4
EIC 211 IECC International Energy Conservation Code	4
Total Credits	16

Certificate

Relating to AAS/Construction Electrician

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
Total Credits	24

Certificate

Relating to AAS/Construction Electrician

Construction Electrician

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
Total Credits		36

Certificate

Relating to AAS/Construction Electrician

Advanced Construction Electrician

Requires Construction Electrician Certificate or instructor's approval

Required Courses		Credits
AEC 221	Building Electrical/Mechanical Systems	3
EIC 215	Advanced 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
Total Credits		20

Certificate

Relating to AAS/Maintenance Electrician:

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 167	Electrical Maintenance	4
EIC 220	Industrial Electrical Controls I	4
Total Credits		36

Certificate

Relating to AAS/Maintenance Electrician

Introduction to Instrumentation and Controls Technician

Required Courses		Credits
EIC 220	Industrial Electrical Controls	4
	Pre-requisite: EIC 150 and EIC 155 or permission	
EIC 225	Programmable Controls	4
EIC 230	Instrumentation and Controls I	4
Total Credits		12

Certificate

Relating to AAS/Maintenance Electrician

Advanced Instrumentation and Controls Technician

Required Courses		Credits
EIC 220	Industrial Electrical Controls	4
	Pre-requisite: EIC 150 and EIC 155 or permission	
EIC 223	Advanced Industrial Electrical Controls	4
EIC 225	Programmable Controls	4
EIC 226	Programmable Controls Advanced	4
EIC 230	Instrumentation & Controls I	4
Total Credits		20

Certificate

Relating to AAS/Maintenance Electrician:

Advanced Maintenance Electrician

Requires Maintenance Electrician Certificate or advisor approval

Required Courses		Credits
EIC 160	Electrical Instruments and Measurements	4
EIC 169	Electrical Code Calculations	4
EIC 205	Advanced Electrical Planning	4
EIC 210	Advanced National Electrical Code	4
EIC 230	Instrumentation and Controls I	4
EIC 240	Fire Alarm Fundamentals	4
EIC 225	Programmable Controllers	4
Total Credits		28

Certificate

Relating to AAS/Fire Protection Technology

Introduction to Fire Alarm Technician

Required Courses		Credits
EIC 240	Fire Alarm Fundamentals	4
EIC 241	Fire Alarm Systems Design	4
EIC 242	National Fire Alarm Code	4
Total Credits		12

Certificate

Relating to AAS/Fire Protection Technology

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
Total Credits		25

Certificate

Relating to AAS/Fire Protection Technology

Post-Degree Specialization for Advanced 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-requisite: Permission of instructor (Exemption from FST pre-requisite courses is granted to Construction Technology students.)		
Total Credits		15

Certificate

Relating to AAS/Construction Electrician

Post-Degree Specialization for Advanced Construction Electrician

Requires AAS/Construction Electrician or instructor's approval.

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
Total Credits		16

Certificate

Relating to AAS/Maintenance Electrician:

Post-Degree Specialization for Advanced Maintenance Electrician

Prerequisite: AAS degree maintenance electrician emphasis or advisor approval

Required Courses		Credits
EIC 165	Solid State Devices and Circuits	4
EIC 210	Advanced National Electric Code	4
EIC 230	Instrumentation and Controls I	4
EIC 241	Advanced Fire Alarm Systems	4
Total Credits		16

Elementary Education

(See Teacher Education)

Emergency Management and Planning

(In cooperation with the Colorado Division of Emergency Management)

Degree: Associate of Applied Science

Emergency Management and Planning

Certificate:

Emergency Management and Planning

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. (Select RRCC as your home college, then Emergency Management and Planning.)

Information: www.rrcc.edu/emplan.

Required Courses		Credits
(30 credits required)		
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 Recommended

(15 credits 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

Elective Recommendations

(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	
CIS 118	Introduction to PC Applications	3
MAN 226	Principles of Management	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.

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
Total Credits	30

Emergency Medical Services

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. A grade of C or better must be achieved in all EMS courses to graduate. Student's must complete a criminal background check prior to enrolling in this program by using American Data Bank's online background check procedures: www.healthcareex.com.

Degree: Associate of Applied Science

Paramedicine

Certificates:

Emergency Medical Technician-Basic Paramedic (pending approval)

AAS Degree

Paramedicine

This program assists in advancing a graduate's career in the EMS system.

Prerequisite Courses	Credits
EMS 125 Emergency Medical Technician – Basic	9
EMS 170 Emergency Medical Technician – Basic Clinical	1

EMS 130 Intravenous Therapy for EMTs	2
HPR 190 Basic EKG Interpretation	2

Required Courses	Credits
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EMS 225 Fundamentals of Paramedic Practice	3
EMS 226 Fundamentals of Paramedic Practice Lab	2
EMS 227 Paramedic Special Considerations	3
EMS 228 Paramedic Special Considerations Lab	2
EMS 229 Paramedic Pharmacology	3
EMS 230 Paramedic Pharmacology Lab	2
EMS 231 Paramedic Cardiology	5
EMS 232 Paramedic Cardiology Lab	1
EMS 233 Paramedic Medical Emergencies	4
EMS 234 Paramedic Medical Emergencies Lab	1
EMS 235 Paramedic Trauma Emergencies	4
EMS 236 Paramedic Trauma Emergencies Lab	1
EMS 237 Paramedic Internship Preparatory	2
EMS 280 Paramedic Internship I	6
EMS 281 Paramedic Internship II	6

General Education Courses	Credits
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Communications (Any ENG or COM)	3
Mathematics MAT 107 or above	3

Science	
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BIO 201 Anatomy and Physiology I	4
BIO 202 Anatomy and Physiology II	4

Arts, Humanities, or Social Science (Any)	
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Total Credits	62
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Certificate

Emergency Medical Technician-Basic

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

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

Certificate

Paramedic (pending approval)

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

Required Courses		Credits
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
BIO 106	Anatomy and Physiology	4
Total Credits		49

Energy and Environmental Technology Programs

Pending Approval

Energy and Energy Efficiency courses, certificates, and associate of applied science degrees are available in the following program areas. These programs offer core skills required to install and maintain new energy technologies using practices that promote energy efficiency and sustain our natural resources.

Air Conditioning, Heating and Refrigeration – Energy Efficiency

(See page 49.)

Carpentry – Energy Efficiency

(See page 58.)

Construction Management and Technology

(See page 67.)

Electricity: Commercial/Industrial/Residential – Energy, Efficiency Maintenance and Operations

(See page 76.)

Environmental Technology – Natural Resource Management

(See page 85.)

Industrial Maintenance Technology – Energy Maintenance

(See page 92.)

Plumbing

(See page 115.)

Process Technology – Energy Operations

(See page 119.)

Renewable Energy Technology – Energy Efficiency

(See page 121.)

Water Quality Management – Environmental Technology

(See page 130.)

Wind Energy Technology – Energy Maintenance

(See Page 133.)

Advising: Please contact the Energy and/or Environmental Technology programs offices directly:

Larry Snyder – Renewable Energy Technology, 303.914.6306, larry.snyder@rrcc.edu;

Chuck Beck – Process Technology and Industrial Maintenance, 303.914.6063, chuck.beck@rrcc.edu;

Mike Smith – Water Quality Environmental Technology, 303.914.6325, mike.smith@rrcc.edu.

Bachelor of Science transfer program: All associate of applied science graduates are eligible to participate in the Colorado Community College Pathways program, a strategic partnership between DeVry University – Colorado and Red Rocks Community College. Students may transfer 80+ credit hours from Red Rocks Community College to DeVry University and complete a bachelor of science in Technical Management in as few as two semesters. Additional transfer options may be available in individual program areas. Contact your Construction Technology advisor for details.

Engineering (Pre-Engineering)

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.

Degree: Associate of Science

Required Courses	Credits
CHE 111 General College Chemistry I*	5
PHY 211 Physics: Calculus-based I *	5
PHY 212 Physics: Calculus-based II	5
MAT 201 Calculus I *	5
MAT 202 Calculus II	5
MAT 204 Calculus III	5
MAT 261 Differential Equations	4
* Fulfills General Education requirements	
Additional General Education Courses	26
Total Credits	60

Engineering Graphics Technology

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 CAD (Computer-Aided Design) 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 have at 303.914.6572. Students must earn a C or better in all courses to graduate.

General Education Requirements for EGT AAS Degrees:

Required Courses	Credits
CIS 118 Introduction to PC Applications: MS Office	3
ENG 131 Technical Writing	3
MAT 107 Career Math	3
Choose one Social and Behavioral Science course: (ANT, ECO, GEO, GIS, HIS, POS, PSY, SOC)	3
Choose one COM course from the following:	
COM 115 Public Speaking	
or	
COM 125 Interpersonal Communication	3
Total Credits	15

Degrees: Associate of Applied Science

Architectural
Mechanical
Civil

Certificates:

Architectural
Mechanical
Civil
SolidWorks

AAS Degree

Architectural

The Architectural AAS degree prepares you for a career in a construction or architectural firm. Electives allow you 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 Courses	Credits
AEC 121 Construction Materials And Systems	3
AEC 218 Sustainable Building Systems	3
AEC Elective	3
CAD 101 Computer Aided Drafting I	3
CAD 102 Computer Aided Drafting II	3
EGT 230 Drafting and Design I: Arch	6
EGT 231 Drafting and Design II: Arch	6
CAD 224 Revit	3
CAD 227 Revit Advanced	3
CAD 289 Capstone (Fourth Semester Class)	6
CON 230 Blueprint Reading	4
MGD 111 Adobe Photoshop I	3
Total Required Architectural Credits	46
General Education Requirements	15
Total Required Credits for Architectural AAS Degree	61

AAS Degree

Mechanical

The Mechanical AAS degree prepares you for a career with many options to choose from, such as mechanical design, piping, electrical, mining, or welding. Course electives allow you to select a preferred path in this field.

Required Courses		Credits
CAD 101	Computer Aided Drafting I	3
CAD 102	Computer Aided Drafting II	3
EGT 231	Drafting and Design II: Mech	6
CAD 289	Capstone (Fourth Semester Class) Mech	6
CAD 285	Independent Study Meck	6
PHY 105	Conceptual Physics	4
TEC 205	Geometric, Dimensioning and Tolerancing 3	3
Total Required Mechanical Credits		31

Required Electives:

Choose a minimum of 16 credit hours from the list below. You may substitute 6 of the 15 credit hours with other CAD/EGT department courses.

Elective Courses		Credits
MAC 102	Blueprint Reading	3
MAC 105	Introduction to Machining Technology	4
PLU 100	Intro to Plumbing	4
PLU 101	Piping Skills	4
PLU 150	Code and Piping Calculations	2
PRO 110	Safety, Health and Environment	3
PRO 120	Process Technology I: Equipment	4
PRO 130	Instrumentation	3
WEL 130	Maintenance Welding	4
Total Mechanical Elective Credits		16
General Education Requirements		15
Total Required Credits for Mechanical AAS Degree		62

AAS Degree

Civil

Required Courses		Credits
CAD 101	Computer Aided Drafting I	3
CAD 102	Computer Aided Drafting II	3
EGT 230	Drafting and Design I: Civil	6
EGT 231	Drafting and Design II: Civil	6
CAD 233	Civil 3D	3
CAD 285	Independent Study	6
CAD 289	Capstone (Fourth Semester Class)	6
COM 105	Career Communications	3
GIS 101	Intro to Geographic Information Systems	3
GIS 210	Intermediate GIS	3
PHY 105	Conceptual Physics	4
Total Required Civil Credits		46
General Education Requirements		15
Total Required Credits for Civil AAS Degree		61

Certificate

Architectural

Required Courses		Credits
AEC 121	Construction Materials and Systems	4
CAD 101	Computer Aided Drafting I	3
CAD 102	Computer Aided Drafting II	3
CAD 224	Revit	3
EGT 230	Drafting and Design I: Arch	6
EGT 231	Drafting and Design II: Arch	6
And, one of the following electives:		
CAD 227	Revit Advanced	3
AEC 218	Sustainable Building Systems	3
AEC Elective		3
Total Credits		28

Certificate

Mechanical

Required Courses		Credits
CAD 101	Computer Aided Drafting I	3
CAD 102	Computer Aided Drafting II	3
EGT 231	Drafting and Design II: Mech	6
Total Credits		12

Certificate

Civil

Required Courses		Credits
CAD 101	Computer Aided Drafting I	3
CAD 233	Civil 3D	3
EGT 230	Drafting and Design I: Civil	6
EGT 231	Drafting and Design II: Civil	6
Total Credits		18

Certificate

SolidWorks

Required Courses		Credits
CAD 256	SolidWorks Basics	6
CAD 257	SolidWorks Intermediate	6
CAD 258	SolidWorks Advanced	6
Total Credits		18

English

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 AA general education requirements.

Degree: Associate of Arts

Emphasis in Literature

Required Courses	Credits
LIT 115 Introduction to Literature *	3
ENG 221 Creative Writing	3
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

Additional General Education Courses	32
Approved electives	4
Select electives with ENG and LIT prefixes after talking to an English faculty advisor.	
Total Credits	60

Degree: Associate of Arts

Emphasis in Creative Writing

Required Courses	Credits
ENG 221 Creative Writing	3
ENG 226 Fiction Writing	3
ENG 227 Poetry Writing	3
ENG 230 Creative Nonfiction	3
ENG 231 Literary Magazine	3
LIT 115 Introduction to Literature*	3

*State-guaranteed general education course

Additional General Education Courses	35
Approved electives	10
Select electives with LIT prefixes after talking to an English faculty advisor.	
Total Credits	60

Entrepreneurship

(See Business)

Environmental Technology – Natural Resource Management

The Environmental Technology Degree program is an introduction program to the environmental sciences with emphases in environmental control and compliance strategies. The program prepares students to seek entry level employment in environmental professions in water, soil, solid waste and air monitoring career opportunities. The program provides specific training in environmental monitoring programs, field analysis requirements and corrective active planning. In addition, the student will also gain skills and knowledge of equipment and alternative power sources to assist industry with pollution control efforts.

Information: Mike Smith 303.914.6325

Degree: Associate of Applied Science

Environmental Technology

Certificates:

Introduction to Air Compliance
 Introduction to Soil Compliance
 Introduction to Water Compliance
 Environmental Compliance Operations
 Environmental Pre Engineering
 Environmental Safety Systems

AAS Degree

Environmental Technology

PENDING APPROVAL

Required Courses	Credits
EVT 100 Sustainability in Environmental Technology	3
EVT 110 Atmospheric Environmental Application	4
EVT 120 Soil and Solids Waste Studies	4
EVT 140 Regulatory Studies	4
EVT 150 Global Environmental Awareness	4
EVT 200 Environmental Engineering	4
EVT 210 Environmental Energy Science and Technology	4
WQM 100 Introduction to Water Quality	3
WQM 121 Environmental Sampling and Volume Measurement	3
WQM 160 Managing the Global Water Supply	3
PRO 110 Safety, Health and Environment	3
ENY 101 Introduction to Energy Technologies	3
GIS 101 Introduction to Geographic Systems	3
Approved Substitutions	
WQM 123 Water Reuse Systems	3
WQM 165 Water Law	3

WQM 212 Drinking Water Regulations	4
Approved Substitutions: (CPL: OSHA HAZWOPER - 40 hour)	
Total Credits	45
General Education Requirements (MAT, ENG + 3 credit elective)	9
Required Electives	
PHY 107 Energy Science and Technology	4
GIS 101 Geographic Information Systems	3
Total General Education Requirements	16
Total AAS Degree Credits	61

Environmental Certificates

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

Certificate

Introduction to Air Compliance

Required Courses	Credits
EVT 100 Sustainability in Environmental Technology	4
EVT 110 Atmospheric Environmental Application	3
Total Credits	7

Certificate

Introduction to Solid Waste Compliance

Required Courses	Credits
EVT 100 Sustainability in Environmental Technology	4
EVT 120 Soil and Solid Waste Studies	3
Total Credits	7

Certificate

Introduction to Water Compliance

Required Courses	Credits
EVT 100 Sustainability in Environmental Technology	4
WQM 100 Introduction to Water Quality	3
WQM 160 Managing the Global Water Supply	3
Total Credits	10

Certificate

Environmental Compliance Operations

Required Courses	Credits
EVT 140 Regulatory Studies	4
EVT 150 Global Environmental Awareness	4
Total Credits	8

Certificate

Environmental Pre Engineering

Required Courses	Credits
EVT 200 Environmental Engineering	4
EVT 210 Environmental Energy Science and Technology	4
GIS 101 Introduction to Geographic Systems	3
Total Credits	11

Certificate

Environmental Safety Systems

Required Courses	Credits
EVT 140 Environmental Regulations	4
PRO 110 Safety Health and Environment	3
ENY 101 Introduction to Renewable Energy Technologies	3
Total Credits	10

Esthetician (skin)

(See Cosmetology)

Fine Woodworking

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 (musical instrument 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.

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

AAS Degree

Fine Woodworking

The AAS degree includes an additional requirement of ten electives which could be fulfilled outside 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, multi-media, CAD, or perhaps a Web design course.

Required Courses	Credits
FIW 101 Introduction to Woodworking	8
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 (Honors joinery is highly recommend)	4
FIW 206 Chairmaking (the Maloof Chairmaking class may be substituted with advisors permission)	4
FIW 213 Furniture Making	4
FIW xxx FIW Electives	6
Additional Electives (see description above)	10
General Education Electives	15
Total Credits	61

Certificate

General Fine Woodworking

Required Courses	Credits
FIW 101 Introduction to Woodworking	8
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 (Honors joinery is highly recommend)	4
FIW 213 Furniture Making	4
Approved Electives	6
Total Credits	32

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	8
FIW 201 Joinery	4
Total Credits	12

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	4
FIW 118 Lathe Turning	4
FIW 119 Intermediate Turning I	4
FIW 121 Intermediate Turning II	4
Total Credits	16

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. Students should plan to take their electives under the luthier program with special topic classes focused on their field of study. This certificate is designed to validate their experience in this field.

Required Courses	Credits
FIW 101 Introduction to Woodworking	8
FIW 102 Classical Guitar Making	5
FIW 103 Steel String Guitar Making	5
FIW xxx FIW Electives as selected by advisor	10
Total Credits	28

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 include those skills which are commonly sought within this field.

Required Courses	Credits
FIW 101 Introduction to Woodworking	8
FIW 128 Doormaking	4
FIW 209 Cabinetmaking	4
Total Credits	16

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	8
FIW 201 Honors Joinery (Bench Building)	4
FIW 171 Woodworking Lab II	2
FIW 213 Furniture Making	4
Total Credits	18

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	8
FIW 201 Honors Joinery (Bench Building)	4
FIW 171 Woodworking Lab II	2
FIW 206 Chairmaking (two semesters)	8
(Students must complete at least two semesters of the chairmaking class. They are required to have completed no fewer than six chairs. The Maloof rickick chair class may be substituted for one of the chairmaking classes.)	
FIW 213 Furniture Making	4
Total Credits	26

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	8
FIW xxx Lutherie Class (Acoustic, Madolin, Electric, or Violin)	5
FIW 118 Lathe Turning	4
FIW 122 Woodcarving	4
FIW 200 Veneering and Marquetry	4
FIW 201 Honors Joinery (Bench Building)	4
FIW 171 Woodworking Lab II	2
FIW 213 Furniture Making	4
FIW xxx Elective approved by advisor	5
Total Credits	40

Certificate

Post-Degree Master Craftsman

This certificate expands skills to the level of Master Craftsman. Students are expected to develop individual portfolios that demonstrate their 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
Total Credits	53

Fire Protection Technology

(See Electricity)

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
Fire Inspector

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.

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 Principles/Emergency Services	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 Prevention	3
FST 107 Hazardous Materials Awareness Operations	3
FST 110 Job Placement and Assessment	3
FST 151 Driver Operator	3
FST 201 Instructional Methodology	3
FST 202 Firefighting Strategy and Tactics I	3

FST 204 Fire Codes and Ordinances	3
FST 205 Fire Cause Determination	3
FST 206 Fire Company Supervision and Leadership	3
Total Required Course Credits	48
General Education Requirements	15
Faculty advisor-approved electives	9
Total Credits	72

AAS Degree

Fire Service Management

This degree is for students experienced as firefighters 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 the latest methodologies of fire prevention, incident management, and leadership principles within the fire service. Upper level course work includes the study of fire scene strategy and tactics, the national incident management system, legal and administration issues in the fire service, and fire service leadership. The majority of this degree program is available online.

The Fire Service Management degree program credits may be transferred to Regis University, or other colleges, towards a bachelor of science degree in public administration or applied science.

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)/ NIMS	3
FST 255 Fire Service Management (Fire Officer II)	3
FST 257 Fire Department Administration	3
FST 275 Special Topics--Fire Analysis Thesis	3
Total Required Course Credits	33
General Education Requirements	15
Faculty advisor-approved electives	12
Total Credits	60

Certificate

Fire Fighter I

Strongly recommended prerequisite: EMS 125/170 (EMT-Basic)

Required Courses	Credits
FST 100 Firefighter I Academy	9
FST 107 Hazardous Materials - Operations	3
FST 170 Fire Academy Clinical	1
Total Credits	13

Certificate

Fire Instructor

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

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
Total Credits	12

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)/ NIMS	3
FST 255 Fire Service Management	3
Total Credits	12

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
Total Credits	9

Certificate

Driver Operator

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

Certificate

Fire Inspector

Prerequisite: Fire Officer I

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

Certificate

Hazardous Materials

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

Foreign Languages

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.

Degree: Associate of Arts

Required Courses	Credits
Choose one (FRE, GER, SPA)	
FRE/GER/SPA 111 French/German/Spanish Language I	5
FRE/GER/SPA 112 French/German/Spanish Language II	5
FRE/GER/SPA 211* French/German/Spanish Language III	3
FRE/GER/SPA 212* French/German/Spanish Language IV	3
* Fulfills General Education requirement	
Additional General Education Courses	32
Approved Electives	12
Total Credits	60

Geology

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.

Degree: Associate of Science

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

Hairstylist

(See Cosmetology)

Health Professions

Certificates:

**Holistic Health Professional
Phlebotomy
Reflexology**

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	
Electives: any of the HHP courses	10
Total Credits	16

Certificate

Phlebotomy

This CCHE approved certificate is designed to prepare individuals to gain employment as a phlebotomist in the health care industry. Students will receive an extensive and varied program of study that includes theory and practice, specimen setup and process, medical terminology specific to the laboratory, customer service skills, regulatory issues, venipuncture and fingerstick technique and numerous other collection procedures. After successful completion of this course and the phlebotomy internship, the student is eligible to apply and sit for the national AMT (American Medical Technologist) certification exam. Immunizations and background check are required before the start of the internship. Students must complete a criminal background check 90 days prior to enrolling in the internship by using American DataBank's online

background check procedures at www.healthcareex.com. The internship, HPR 180, must be started within four months of completing HPR 112.

Please fill out an application form to be considered for this course. This can be found on the Red Rocks/ programs/ Health Careers Web site. Permission of the instructor is required to register for both courses. Students must be at least 18 years old to register for this program.

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

Certificate

Reflexology

The Healing Hands and Feet program student undergoes a vigorous and comprehensive program that includes 200 hours of standardized curriculum with a Certified Program instructor. Reflexology uses gentle pressure on the feet or hands and works reflex points that correspond to different areas of the body. Reflexology has been integrated into the health care field by doctors, nurses, and massage therapists.

Required Courses	Credits
HHP 166 Introduction to reflexology	1
HHP 260 Advanced Reflexology	1
HHP 169 Healing Hands and Feet	1
HHP 164 Hand Reflexology	1
HHP 188 Practicum Reflexology Lab	2
HHP 270 Clinical	2
HHP 263 Creating a Holistic Practice	0.5
HHP 190 Crystals and Mineral Usage	0.5
Total Credits	9

Heating

(See Air Conditioning, Heating, and Refrigeration)

History

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.

Degree: Associate of Arts

Required Courses	Credits
Take one of the following courses:	
HIS 101 Western Civ: Antiquity-1650 *	3
HIS 102 Western Civ: 1650-Present *	3
HIS 111 The World: Antiquity-1500 *	3
HIS 112 The World: 1500-Present *	3
HIS 201 U.S. History to Reconst *	3
HIS 202 U.S. History since Civil War *	3
HIS 225 Colorado History *	3
HIS 247 20th Century World *	3
*Fulfills General Education requirement.	
Additional General Education Courses	35
Approved Electives	22
Total Credits	60

Holistic Health Professional

(See Health Professions)

HVAC/R

(See Air Conditioning, Heating, and Refrigeration)

Industrial Maintenance Technology – Energy Maintenance

The Industrial Maintenance Technology program will prepare students for entry level employment as industrial maintenance technicians. An industrial maintenance technician is a vital member of a team of people responsible for planning, analyzing, and maintaining a wide variety of complex production equipment, power generation equipment and sophisticated control systems. Colorado industrial firms require employees with knowledge and skills in technology application, engineering and design, production processes planning and control, equipment maintenance, communication

and data manipulation and file exchange. Increasingly complex and automated industrial electrical and mechanical systems require maintenance skills, diagnostic and troubleshooting skills and repair skills to assure their continued and safe operation.

The AAS degrees and certificates found within this program will provide the student with the basic skills required to safely maintain production equipment and understand the basic principles of operation and control. The graduate will understand the technical aspects of the work, the work place responsibilities of the individual and the importance of safety in this vitally important, shift oriented position.

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

Information: 303.914.6063, Chuck.Beck@rrcc.edu
www.rrcc.edu/isod

Degrees: Associate of Applied Science

Industrial Maintenance Technology – Mechanical

Industrial Maintenance Technology – Electrical

Electro-Mechanical Industrial Maintenance

Certificates:

Industrial Maintenance Technology

Industrial Electrical Technician

Codes and Standards

Commercial and Industrial Heating and Cooling

Low Voltage Technician

Electro-Mechanical Technician

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

AAS Degree

Industrial Maintenance Technology - Mechanical

Required Courses			Credits
BUS	118	Business Survival Skills	3
ENT	106	Print Reading for Manufacturing	3
ENT	238	Industrial Fluid Power and Controls	3
HVA	105	Electricity for HVAC/R	4
IMA	120	Pumps, Seals and Rotating Equipment	3
IMA	100	Intro Industrial Maintenance	3
IMA	150	Industrial Problem Solving Methods	2
IMA	210	Vibration Principles I	3
MAC	105	Introduction to Machining Technology	4
IMA	250	Industrial Machine Lubrication	3
MIL	107	Installing Belts, Chain Drives and Bearings	4
PLU	101	Piping Skills	4
PRO	110	Safety, Health and Environment	3
PRO	280	Internship	4
WEL	130	Maintenance Welding	4
Required Course Credits			50
General Education Requirements			15
Total Credits			65

AAS Degree

Industrial Maintenance Technology - Electrical

Required Courses			Credits
BUS	118	Business Survival Skills	3
EIC	160	Electrical Instruments and Measurements	4
EIC	167	Electrical Maintenance	4
EIC	220	Industrial Electrical Controls I	4
EIC	223	Advanced Industrial Electrical Controls	4
EIC	230	Instrumentation and Controls I	4
EIC	225	Programmable Controllers	4
ENT	106	Print Reading for Manufacturing	3
HVA	105	Electricity for HVAC/R	4
IMA	100	Intro Industrial Maintenance	3
PRO	110	Safety, Health and Environment	3
Choose a minimum of 8 credits from the following courses:			
EIC	226	PLC Controllers Advanced	4
MTE	210	Networks and Control Systems	4
PRO	280	Internship	3
Total Required Course Credits:			48
General Education Requirements			15
Total Credits			63

AAS Degree

Electro-Mechanical Industrial Maintenance

Required Courses		Credits
EIC 110	Electrical Installations I	4
EIC 120	Electrical Installations II	4
EIC 220	Industrial Electrical Controls I	4
HVA 102	Basic Refrigeration	4
HVA 105	Electricity for HVAC/R	4
HVA 113	Refrigerant Recovery Training	1
HVA 132	Air Conditioning and Refrigeration Controls	4
HVA 231	Pneumatic Controls	4
Required Course Credits		29
Technical Elective Course Credits		16
(Select from Electives group 1 below)		
General Education Requirements		15
Total Credits		60

Electives Group I

EIC 160	Electrical Measurement	4
EIC 167	Electrical Maintenance	4
EIC 221	Trouble Shooting Control Circuits	1.5
EIC 223	Advanced Industrial Electrical Controls	4
EIC 225	Programmable Controls	4
EIC 226	PLC Controllers Advanced	1.5
EIC 229	AC and DC Variable Speed Drives	1.5
EIC 230	Instrumentation and Controls I	4
ENT 106	Print Reading for Manufacturing	3
ENT 238	Basic Fluid Power	3
HVA 110	Heating Fundamentals	4
HVA 113	Refrigerant Recovery Training	1
HVA 114	Centrifugal Pumps	1.5
HVA 162	Heating Controls	4
HVA 231	Pneumatic Controls	4
HVA 247	Hot Water Heating	4
HVA 251	Building Automation I	4
HVA 263	Chillers	4
IMA 100	Introduction to Industrial Maintenance	4
IMA 150	Effective Problem Solving (Cause Mapping I)	2
IMA 210	Vibration Principles I	3
MAC 105	Introduction to Machining Technology	3
IMA 250	Industrial Machine Lubrication	3
MIL 107	Installing Belts, Chains, Drives and Bearings	4
PLU 101	Pipe/Piping Systems	4
PRO 110	Safety, Health and Environment	3
WEL 130	Maintenance Welding	4
Total Select Courses		16

Industrial Maintenance Technology

Certificates:

Contact Chuck Beck at 303.914.6063 for additional information about the following certificates:

Certificate

Industrial Maintenance Technology

Required Courses		Credits
EIC 110	Electrical Installations I	4
EIC 120	Electrical Installations II	4
EIC 220	Industrial Electrical Controls I	4
HVA 102	Basic Refrigeration	4
HVA 105	Electricity for HVAC/R	4
HVA 113	Refrigerant Recovery Training	1
HVA 132	Air Conditioning and Refrigeration Controls	4
HVA 231	Pneumatic Controls	4
Total Credits		29
Elective Courses for Certificate		
EIC 160	Electrical Measurement	4
EIC 167	Electrical Maintenance	4
EIC 221	Trouble Shooting Control Circuits	1.5
EIC 223	Advanced Industrial Electrical Controls	4
EIC 225	Programmable Controllers	4
EIC 226	PLC Controllers Advanced	4
EIC 229	AC and DC Variable Speed Drives	1.5
EIC 230	Instrumentation and Controls I	4
ENT 106	Print Reading for Manufacturing	3
ENT 238	Basic Fluid Power	3
HVA 110	Heating Fundamentals	4
HVA 113	Refrigerant Recovery Training	1
IMA 120	Pumps, Seals Rotating Equipment	3
HVA 162	Heating Controls	4
HVA 231	Pneumatic Controls	4
HVA 247	Hot Water Heating	4
HVA 251	Building Automation I	4
HVA 263	Chillers	4
IMA 100	Introduction to Industrial Maintenance	4
IMA 150	Industrial Problem Solving Methods	2
IMA 210	Vibration Principles I	3
MAC 105	Introduction to Machining Technology	3
IMA 250	Industrial Machine Lubrication	3
MIL 107	Installing Belts, Chains, Drives and Bearings	4
PLU 101	Pipe/Piping Systems	4
PRO 110	Safety, Health and Environment	3
WEL 130	Maintenance Welding	4
Total Elective Credits Required		16
Total Credits		45

Certificate

Industrial Electrical Technician

Choose 9 credits from the following:

HVA	105	Basics Of AC & DC Electricity	4
EIC	104	Basics Of Indust. Electricity	1
EIC	124	Electrical Safety Requirements	1
EIC	130	National Electrical Code	4
EIC	144	Grounding And Bonding	1.5
EIC	166	Tuning Ddc/Process Cont.Loops	1.5
EIC	221	Trouble Shooting Control Cir	1.5
EIC	222	Intro. Instr. & Process Control	1.5
EIC	224	Understanding PLC's	1.5
EIC	229	AC & DC Variable Speed Drive	1.5
EIC	234	High Voltage Elect. Safety	1.5

Certificate

Codes and Standards

Choose 7.5 credits from the following:

EIC	124	Electrical Safety Requirements and Procedures	1
EIC	130	National Electrical Code	4
EIC	132	National Electrical Code 2005	1.5
EIC	134	Life Safety Code (NFPA 72)	1.5
EIC	144	Grounding and Bonding	1.5
EIC	234	High Voltage Electrical Safety	1.5
EIC	242	National Fire Alarm Code	1.5

Certificate

Commercial and Industrial Heating and Cooling - CIHC

Choose 7.5 credits from the following:

HVA	105	Basics Of AC & DC Electricity	4
EIC	166	Turning DDC/Process Control Loops	1.5
EIC	122	Electrical Distribution Theory II	1.5
HVA	114	Centrifugal Pumps	1.5
HVA	131	Refrigeration and Air Conditioning	1.5
HVA	192	Refrigerant Retrofit Training	1.5
HVA	194	Fundamentals of Pneumatic Comfort Controls	1.5
HVA	263	Chillers	4

Certificate

Low Voltage Technician

Choose 7.5 credits from the following:

HVA	105	Basics Of AC & DC Electricity	4
EIC	124	Electrical Safety	1
EIC	104	Basic of Industrial Electricity	1.5
HVA	132	Air Conditioning and Refrigeration Controls	4
EIC	132	Electrical Code	1.5
EIC	250	Fiber Optics Training	1.5
EIC	251	Fiber Optics Advanced Training	1.5
EIC	252	Structured Cabling	3
EIC	253	Fiber Optics Certification	1
EIC	254	Telephony	1.5
EIC	268	Fiber Optics Networks	2

Certificate

Electro-Mechanical Technician

Choose 9 credits from the following:

HVA	105	Basics Of AC & DC Electricity	4
HVA	102	Basic Refrigeration	4
EIC	104	Basics of Industrial Electricity	1.5
EIC	124	Electrical Safety Requirements	1
EIC	144	Grounding And Bonding	1.5
EIC	166	Tuning Ddc/Process Cont.Loops	1.5
EIC	221	Trouble Shooting Control Circuits	1.5
EIC	222	Intro. Instr. & Process Control	1.5
EIC	224	Understanding PLC's	1.5
EIC	226	PLC's Controllers Advanced	4
EIC	227	Mechanical Drives	1.5
EIC	229	AC & DC Variable Speed Drive	1.5
EIC	231	Electro-Pneumatic Training	1.5
EIC	234	High Voltage Elect. Safety	1.5
HVA	114	Centrifugal Pumps	1.5
HVA	124	Advanced Air Conditioning	4
HVA	192	Refrigerant Retrofit Training	1.5

Certificate

Industrial & Commercial HVAC Technician

HVA	102	Basic Refrigeration	4
HVA	105	Basics Of AC & DC Electricity	4
HVA	110	Heating Fundamentals	4
HVA	113	Refrigerant Recovery Training	4
HVA	132	Air Conditioning and Refrigeration Controls	4
HVA	162	Heating Controls	4
HVA	247	Hot Water Heating	4
HVA	263	Chillers	4
Total credits			32

Certificate

Introduction to Predictive Maintenance Technology

PRO	110	Safety, Health and Environment	3
IMA	210	Vibration I	3
IMA	250	Industrial Machine Lubrication	3
Total credits			9

Certificate

Introduction to Industrial Control Systems

EIC 220	Basic Motor Control	4
EIC 227	Mechanical Drives	1.5
EIC 225	Programmable Controllers	4
Total credits		9.5

Certificate

Introduction to Industrial Electrical Maintenance

HVA 105	AC/DC Fundamentals	4
EIC 220	Industrial Electrical Controls I	4
EIC 226	PLC Controllers Advanced	4
Total credits		12

Certificate

Introduction to Industrial Instrumentation and Controls

EIC 230	Industrial Instrumentation and Controls I	4
EIC 225	Programmable Controllers	4
Total credits:		8

Certificate

Introduction to Industrial Maintenance Team Leadership

PRO 110	Safety, Health and Environment	3
BUS 118	Business Survival Skills	3
PSY/SOC	Psychology or Sociology	3
IMA 150	Industrial Problem Solving Methods	2
Total credits		11

Interior Design

Degree: Associate of Applied Science

Interior Design

Certificates:

Intro to AutoCAD

Revit

Furniture Design

Sustainable Design Applications

AAS Degree

Interior Design

This program provides the student with a strong foundation in interior design with an emphasis in green materials and sustainable design. Students will learn how to create interiors that provide comfort, personal well-being and energy efficiency for clients. Hand drafting as well as CAD skills are incorporated into the degree to create a well-rounded graduate able to transfer to a 4-year school or go directly into the workforce.

Required Courses		Credits
ENY 101	Introduction to Energy Technologies	3
IND 100	Interior Design Fundamentals	4
IND 108	Professional Survey	1
IND 111	Drafting for Interiors	4
IND 114	Space Planning	3
IND 112	Graphics for Interiors	4
IND 117	Interior Textiles	2
CAD 101	Computer Aided Drafting I	3
CAD 102	Computer Aided Drafting II	3
IND 151	Residential Design	4
IND 152	Commercial Design I	2
IND 118	Interior Finishes	2
IND 200	Kitchen and Bath Design	4
IND 211	Interior Construction	4
IND 225	Lighting Design	3
IND 231	Sustainable Design	3
AEC 218	Sustainable Building Systems	3
IND 275	Portfolio	1
IND 280	Internship	3
IND 205	Professional Practice for Interior Designers	2
IND 289	Capstone	3
Total required Interior Design courses		61
General Education requirements:		
ART 233	Color Theory	3
COM 115	Public Speaking	3
ENG 131	Technical Writing	3
MAT 107	Career Math	3
Social and Behavioral Science Elective		3
Total General Education requirements		15
Total Credits		76

Certificate

Intro to AutoCAD

Required Courses	Credits
CAD 101 Computer Aided Drafting I	3
CAD 102 Computer Aided Drafting II	3
Total Credits	6

Certificate

Revit

Required Courses	Credits
CAD 224 Revit	3
CAD 227 Revit Advanced	3
Total Credits	6

Certificate

Furniture Design

Furniture Design Certificate will prepare you to work with architects, designers, and contractors to translate their concepts into reality. Custom furniture makes the value of a house higher making it unique. Course electives allow you to select a preferred path in this field.

Required Courses	Credits
CAD 101 Computer Aided Drafting I	3
IND 110 Interior Design Fundamentals	4
IND 111 Drafting for Interiors	4
IND 114 Space Planning	3
IND 117 Interior Textiles	2
FIW 101 Introduction to Woodworking	8
FIW 104 Elements of Design	2
FIW 201 Joinery	4
FIW xxx Elective	4
Total Credits	34

Certificate

Sustainable Design Applications

Required Courses	Credits
AEC 218 Sustainable Building Systems	3
ENY 101 Introduction to Energy Technologies	3
IND 231 Sustainable Design	3
Total Credits	9

Law Enforcement

Degree: Associate of Applied Science

Law Enforcement

Certificate:

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

AAS Degree

Law Enforcement (pending approval)

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
LEA 101 Basic Law Enforcement Academy I	6
LEA 102 Basic Law Enforcement Academy II	12
LEA 104 Basic Law Enforcement Academy IV	1
LEA 105 Basic Law	8
LEA 106 Arrest Control Techniques	3
LEA 107 Law Enforcement Driving	3
LEA 108 Firearms	3
PED 112 Conditioning Lab	1

Total required course credits 37

Elective Recommendations

LEA 109 Culture and Conflict Resolution	2
LEA 116 Civil Liability	3
LEA 118 Report Writing	3
LEA 218 Drug Investigative Strategies	3
LEA 221 Community Problem Solving	3
LEA 240 Criminal Investigations	3
LEA 247 Street Survival Techniques	2
CRJ 110 Introduction to Criminal Justice	3
CRJ 125 Law Enforcement Operations	3
CRJ 135 Judicial Function	3
CRJ 205 Principles of Criminal Law	3

Total required advisor approved electives 8

General Education requirements

See AAS Degree requirements

Recommended Courses Credits

ENG 121	3
COM 115 or COM 125	3
MAT 120 (or higher)	4
Physical and Life Sciences	3
PSY or SOC (any)	3

Total General Education required electives 15

Total Credits 60

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 37 credits during this intense course of study. This is not an open enrollment offering. You must make separate application to the Academy.

See www.rrcc.edu/lawenforcement for details.

Required Courses	Credits
LEA 101 Basic Police Academy I	6
LEA 102 Basic Police Academy II	12
LEA 104 Basic Law Enforcement Academy IV	1
LEA 105 Basic Law	8
LEA 106 Arrest Control Techniques	3
LEA 107 Law Enforcement Driving	3
LEA 108 Firearms	3
PED 112 Conditioning Lab	1
Total Credits	37

Medical Imaging

(See Radiologic Technology or Sonography)

Medical Office Technology

The medical office programs are designed to prepare the student for a career as an allied health professional, assisting physicians in ambulatory settings. The TOEFL or Accuplacer test is required for international applicants whose primary language is other than English. Accuplacer results should place all students in ENG 090 or higher. Students must complete a criminal background check 90 days prior to enrolling in internships by using American DataBank's online background check procedures at www.healthcareex.com. Immunizations and CPR are required of all Medical Assisting students prior to internship. A minimum grade of C must be achieved for all required courses to graduate with a certificate or degree. Students should consult with the Medical Assisting Coordinator to ensure proper sequencing of courses and other educational options.

Degrees: Associate of Applied Science

Medical Assisting
Medical Office

Certificates:

Medical Assisting
Medical Office

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). All students who successfully complete the program are required to take the national certification exam (AAMA) to become a Certified Medical Assistant. A math prerequisite of MAT 060 or higher is required for MOT 140 and 150 for all certificate and degree students. Internship must be started within four months of completing MOT 140. Please note that not all courses are offered in the summer session.

Required Courses	Credits
BIO 106 Basic Anatomy and Physiology	4
CIS 118 Introduction to PC Applications	3
COM 126 Communication in Healthcare	3
HPR 106 Law and Ethics for Health Prof	2

Manicurist

(See Cosmetology)

Management/Marketing

(See Business)

Mathematics

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 the math department chair or an 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.

Degree: Associate of Science

Required 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 II*	5
*Fulfills General Education requirements	
Additional General Education Courses	27
Total Credits	60

HPR 178	Medical Terminology	2
MOT 110	Medical Office Administration	4
MOT 120	Medical Office Financial Management	3
MOT 150	Pharmacology for Medical Assistants	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
PSY 101	General Psychology	3
MOT 181	Administrative Internship	2
	and	
MOT 182	Clinical Internship	3
	or	
MOT 183	Medical Assisting Internship	5
Additional General Education Courses		15
Total Credits		60

AAS Degree

Medical Office

The Medical Office Program is designed to prepare the student for a career as an allied health professional, assisting physicians in front-office operations. This program provides a wide range of medical office administration services. Internship must be started within four months of completing all required courses. Please note that not all courses are offered in the summer session

Required Courses		Credits
ACC 101	Fundamentals of Accounting	3
BIO 106	Basic Anatomy and Physiology	4
CIS 118	Introduction to PC Applications	3
COM 126	Communication in Healthcare	3
HPR 106	Law and Ethics for Health Prof	2
HPR 178	Medical Terminology	2
MAN 116	Principles of Supervision	
	or	
BUS 115	Introduction to Business	3
MOT 110	Medical Office Administration	4
MOT 120	Medical Office Financial Management	3
MOT 130	Insurance Billing and Coding	3
MOT 136	Introduction to Clinical Skills	2
MOT 181	Administrative Internship	2
	Faculty advisor approved electives	11
Additional General Education Courses Required		15
Total Credits		60

Certificate

Medical Assisting

The Medical Assisting program prepares you for a career as a multi-skilled professional in the allied health field performing administrative and clinical procedures. This program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). All students who successfully complete the program are required to take the national certification exam (AAMA) to become a Certified Medical Assistant.

A math prerequisite of MAT 060 or higher is required for MOT 140 and 150 for all certificate and degree students. Internship must be started within four months of completing MOT 140. Please note that not all courses are offered in the summer session.

Required Courses		Credits
BIO 106	Basic Anatomy and Physiology	4
CIS 118	Introduction to PC Applications	3
COM 126	Communication in Healthcare	3
HPR 106	Law and Ethics for Health Prof	2
HPR 178	Medical Terminology	2
MOT 110	Medical Office Administration	4
MOT 120	Medical Office Financial Management	3
MOT 130	Insurance Billing and Coding	3
MOT 136	Introduction to Clinical Skills	2
MOT 138	Medical Assisting Laboratory Skills	4
MOT 140	Medical Assisting Clinical Skills	4
MOT 150	Pharmacology for Medical Assistants	3
PSY 101	General Psychology	3
MOT 181	Administrative Internship	2
	and	
MOT 182	Clinical Internship	3
	or	
MOT 183	Medical Assisting Internship	5
Total Credits		45

Certificate

Medical Office

The Medical Office Program is designed to prepare the student for a career as an allied health professional, assisting physicians in front-office operations. This program provides a wide range of medical office administration services. Internship must be started within four months of completing all required courses. Please note that not all courses are offered in the summer session.

Required Courses		Credits
ACC 101	Fundamentals of Accounting	3
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
MAN 116	Principles of Supervision	
	or	
BUS 115	Introduction to Business	3
MOT 110	Medical Office Administration	4
MOT 120	Medical Office Financial Management	3
MOT 130	Insurance Billing and Coding	3
MOT 136	Introduction to Clinical Skills	2
MOT 181	Administrative Internship	2
Total Credits		34

Multimedia Graphic Design

The Multimedia-Gaming-Design, Photography and Journalism Departments use state of the art equipment and have four classroom instructional labs with 16 - 24 workstations in each classroom. The MGD/PHO/JOU Student Computer Lab allows you to work outside the classroom with the same applications that are used in the classrooms. The computers in MGD, PHO and JOU are the fastest available. Currently, the labs are equipped with Intel Power Macs, which allow students to choose between operating systems, the computers are loaded with both Windows Vista and Macintosh OSX. Peripheral devices are also available, including color output, black and white output, flatbed scanners, 3D digital scanner, Wacom tablets and video capture stations.

The MGD/PHO/JOU Department also has two darkrooms for the use of MGD/PHO/JOU students. The department has several film, digital, and digital video cameras which students may use on a 48-hour check-out basis.

Red Rocks Community College offers both associate degrees and certificates in the MGD/PHO/JOU programs. If you plan to transfer to a baccalaureate institution, you should consider the Associate of General Studies. The certificate programs and associate of applied science degrees will prepare you to enter the work force upon graduation.

Degrees: Associate of Applied Science

Graphic Design & Print Production
Video Production
Motion Graphics Animation
Game Design & Development
Web Design & Development
Professional Photography: Traditional Film
Professional Photography: Digital Photography
Professional Photography: Traditional Film and Digital Photography
***Digital Media Journalism (pending approval)**
***3D Design and Animation (pending approval)**
***Interactive Training and Simulation (pending approval)**

Degrees: Associate of General Studies – MSCD

Graphic Design/Print Production
Video Production
Motion Graphics and Animation

Degrees: Associate of General Studies – RMCAD

Graphic Design

Certificates:

Graphic Design & Print Production
Video Production
Motion Graphics and Animation
Game Arts
Web Design
Advanced Web Design
Professional Photography: Traditional Film
Professional Photography: Digital Photography
Professional Photography: Traditional Film and Digital Photography
***Digital Media Journalism (pending approval)**
***Interactive Training and Simulation (pending approval)**
***3D Design and Animation (pending approval)**

Recommended General Education Courses for AAS in MGD/PHO/JOU:

Mathematics		
MAT 107	Career Math	3
Humanities		
ART 149	Animation Drawing/Design or	3
*ART 121	Drawing I or	3
ART 143	Digital Photography I	3
English		
ENG 131	Technical Writing	3
General Education Elective		
*ART 131	Visual Concepts 2-D Design or	3
*ART 132	Visual Concepts 3-D Design	3

*ART 121 and ART 131 or ART 132 may be used to fulfill one humanities and the General Education course electives. You may substitute MGD/PHO advisor approved-classes if ART 121, 149 and 131 or 132 are used to fulfill the General Education Course Requirements.

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 Courses	Credits
*ART 121 Drawing I or ART 149 Animation Drawing/Design	3
*ART 131 Visual Concepts 2-D Design	3
MGD 101 Introduction to Computer Graphics	3
MGD 103 Introduction to Production Design	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 114 Adobe InDesign	3
MGD 118 Digital Color Theory or MGD 116 Typography I	3
MGD 121 Painter for Digital Media or MGD 216 Adobe Acrobat Professional	3
MGD 202 Point of Purchase Packaging Design or MGD 212 Adobe Illustrator II	3
MGD 211 Adobe Photoshop II	3
MGD 213 Electronic Prepress	3
MGD xxx Business for Creatives or MGD 280 Internship or MGD 289 Capstone	3
MGD/PHO Advisor Approved Electives	6

Recommended MGD Electives		
MGD 141	Web Design I: Dreamweaver	3
MGD 143	Motion Graphic Design I: Adobe Flash	3
JOU 225	Internet Media	3
*ART 143	Digital Photography I	3
Required General Education Courses		
15		
*ART 121 and ART 132 or ART 143 may be used to fulfill one Humanities and the General Education Elective. Students may substitute additional MGD/PHO classes if ART 121 and ART 132 or ART 143 are used for the Humanities and General Education Course Requirements.		
Total Credits		60

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.

MGD Advisor: Thomas Harrop, thomas.harrop@rrcc.edu

Required Courses	Credits
MGD 101 Introduction to Computer Graphics or MGD 102 Introduction to Multimedia	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 104 Videography I	3
MGD 143 Motion Graphic Design I: Adobe Flash	3
MGD 152 Digital Animatics	3
MGD 163 Sound Design I: Apple Logic Pro	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
MGD 165 Adobe After Effects I	3
MGD 204 Videography II	3
MGD 263 Sound Design II: Apple Logic Pro	3
MGD 264 Digital Video Editing II: Final Cut Pro	3
MGD xxx Business for Creatives or MGD 280 Internship or MGD 289 Capstone	3
MGD/PHO Advisor Approved Electives	6

Recommended MGD Electives:		
MGD 265	Adobe AfterEffects II	3
MGD 121	Painter for Digital Media	3
*ART 143	Digital Photography	3
*ART 149	Animation Drawing and Design	3
*MUS105	Intro to Electronic/Computer Music	3
Required General Education Courses		
15		
*ART 143 and /or ART 149 and/or MUS 105 may be used to fulfill one Humanities and the General Education Elective Course Requirements.		
Total Credits		60

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 modeling environments. You will combine traditional artistic skills of drawing and design with digital storyboarding, animation, sound, and special effects training. You will combine these skills to produce complex 2D animation projects.

Required Courses	Credits
*ART 149 Animation Drawing and Design or *ART 121 Drawing I	3
*ART 131 Visual Concepts: 2D Design or *ART 156 Figure Drawing	3
MGD 129 History of Animation	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 142 2D Animation Production	3
MGD 143 Motion Graphic Design I: Adobe Flash	3
MGD 152 Digital Animatics	3
MGD 163 Sound Design I	3
MGD 165 Adobe AfterEffects I	3
MGD 212 Adobe Illustrator II or MGD 211 Adobe Photoshop II	3
MGD 243 Motion Graphic Design II: Adobe Flash or MGD 161 Adobe Director I	3
MGD 265 Adobe AfterEffects II	3
Faculty Advisor Approved Electives from MGD	6

Recommended MGD Electives

MGD 142 2D Animation Production	3
MGD 264 Digital Video Editing I: Apple Final Cut Pro	3
MGD 263 Sound Design II: Apple Logic	3

Required General Education Courses 15

*ART 149 or 121 and ART 132 or ART 156 may be used to fulfill one Humanities and the General Education Elective. Students may substitute additional MGD/PHO classes if ART 149 or 121 and ART 132 or ART 156 are used for the Humanities and General Education Course Requirements.

Total Credits 60

AAS Degree

Emphasis in Game Design & Development

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 skills in 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
MGD 111 Adobe Photoshop I or CWB 162 Introduction to Image Editing	3
MGD 125 3D Modeling for Gaming: 3D Studio Max	3
MGD 152 Digital Animatics	3
MGD 153 3D Animation I: Maxon Cinema 4D	3

MGD 163 Sound Design I: Apple Logic Pro	3
MGD 119 Autodesk Maya I	3
CSC 119 Introduction to Programming AND CSC 236 C# Programming	4
MGD 143 Motion Graphic Design I: Adobe Flash or CWB 245 Complete Web Animation	3
MGD 167 Game Design I or CSC 126 Game Design and Development	3
MGD 267 Game Design II	3
CSC 227 3D Game Programming: Torque Engine	3
CSC 228 3D Game Scripting	3
CIS 289 Capstone or MGD 289 Capstone or MGD 280 Internship	3

Faculty Advisor Approved Electives from MGD/CIS/CSC 6

Recommended MGD Electives

MGD 125 3D Modeling for Gaming	3
MGD xxx Advanced 3D Modeling for Gaming	3
*ART 121 Drawing I	3
*ART 132 Visual Concepts: 3D Design	3

Required General Education Courses 15

*ART 149 and/or ART 121 and ART 132 and/or ART 156 may be used to fulfill one Humanities and the General Education Elective Course Requirements.

Total Credits 64-67

AAS Degree

Emphasis in Web Design & Development

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.

Required Courses	Credits
MGD 101 Introduction to Computer Graphics or MGD 102 Introduction to Multimedia or CIS 118 Intro to PC Applications	3
MGD 104 Videography I	3
MGD 111 Adobe Photoshop I or CWB 162 Introduction to Image Editing	3
MGD 112 Adobe Illustrator I	3
CWB 110 Complete Web Authoring (HTML)	3
MGD 141 Web Design I: Adobe Dreamweaver or CWB 130 Complete Web Authoring	3
MGD 143 Motion Graphic Design I: Adobe Flash or CWB 245 Complete Web Animation	3
MGD 241 Web Design II: Adobe Dreamweaver	3
MGD 243 Motion Graphic Design II: Adobe Flash	3
CWB 205 Complete Web Scripting	3
MGD 163 Sound Design I: Apple Logic Pro	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
MGD xxx Business for Creatives or MGD 289 Capstone or MGD 280 Internship	3
MGD/PHO/CWB Advisor Approved Electives	6

MGD Recommended Electives

JOU 225 Internet Media	3
MGD 204 Videography II	3
Required General Education Courses	15
*ART 121 and/or ART 143 and/or MUS 105 may be used to fulfill one Humanities and the General Education Elective Course Requirements.	
Total Credits	60

AAS Degree Emphasis in 3D Design and Animation (pending approval)

The motion graphics animation emphasis within the Multimedia Graphic Design Department prepares you to work in digital 3D modeling and animation environments. You will combine traditional artistic skills of drawing and design with storyboarding, animation and special effects training. You will combine these skills to produce complex 3D designs and models and 3D animation projects.

Required Courses	Credits
*ART 149 Animation Drawing and Design or *ART 121 Drawing I	3
*ART 132 Visual Concepts: 3D Design or *ART 156 Figure Drawing	3
MGD 129 History of Animation	3
MGD 111 Adobe Photoshop I	3
MGD 125 3D Modeling for Gaming I: 3DS Max	3
MGD 152 Digital Animatics	3
MGD 153 3D Animation I: Maxon Cinema 4D	3
MGD 165 Adobe AfterEffects I	3
MGD 119 Autodesk Maya I	3
MGD 122 Sculpting for Digital Media	3
MGD 253 3D Animation II: Maxon Cinema 4D	3
MGD 219 Autodesk Maya II	3
or	
MGD 270 Adv. 3D Character Design: Maya	3
MGD 257 Animation Production or MGD 280 Internship or MGD 289 Capstone	3
Faculty Advisor Approved Electives from MGD	6
MGD Recommended Electives	
MGD 167 Game Design I	3
MGD 267 Game Design II	3
MGD xxx Advanced 3D Studio Max	3
MGD xxx 3D Modeling in 3DS Max and Maya	3
Required General Education Courses	15
*ART 149 and/or 121 and ART 132 and/or ART 156 may be used to fulfill one Humanities and the General Education Elective. Students may substitute additional MGD/PHO classes if ART 149 or 121 and ART 132 or ART 156 are used for the Humanities and General Education Course Requirements.	
Total Credits	60

AAS Degree Emphasis in Interactive Training and Simulation (pending approval)

The Interactive Training and Simulation Degree prepares you to create interactive training multimedia and simulation scenarios used for corporate training, educational training and professional development. You will combine design and multimedia skills to create training videos, training quizzes, and training multimedia which combine animation, video, and sound to create rich media training applications for both business and education for use online or via CD or DVD.

Required Courses	Credits
MGD 102 Intro to Multimedia	3
MGD 104 Videography I	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 114 Adobe InDesign	3
MGD 115 Multimedia Team Development	3
MGD 141 Web Design I: Dreamweaver	3
MGD 143 Motion Graphic Design: Adobe Flash I or MGD 161 Adobe Director I	3
MGD 163 Sound Design I	3
MGD 164 Digital Video Editing I: Apple Final Cut Pro	3
MGD 254 Multimedia Design and Production I	3
MGD 216 Adobe Acrobat Professional	3
MGD 269 Multimedia Design and Production II or MGD 289 Capstone	3
Faculty Advisor Approved Electives from MGD	6
MGD Recommended Electives	
MGD 241 Web Design II: Dreamweaver	3
MGD 243 Motion Graphic Design II: Adobe Flash3	3
MGD 167 Game Design I	3
MGD 267 Game Design II	3
*ART 143 Digital Photography I	3
*MUS105 Intro to Computer/Electronic Music	3
Required General Education Courses	15
*ART 143 and *MUS 105 may be used to fulfill one Humanities and the General Education Elective Course Requirements.	
Total Credits	60

AAS Degree

Emphasis in Digital Media Journalism

(pending approval)

The AAS in Digital Media Journalism prepares students for work with blogs, microblogs, social networking applications, virtual worlds, audio and video podcasting for delivering mass media using the internet as the primary means of media distribution. Students will combine traditional journalism skills in writing and editing with digital skills in video, page layout and production to produce, e-zines, blogs, podcasts and other relevant internet publications.

MGD Advisor: Thomas Harrop, thomas.harrop@rrcc.edu

Required Courses	Credits
JOU 102 Intro to Editing	3
JOU 105 Introduction to Mass Media	3
JOU 106 Fundamentals of Reporting	3
MGD 102 Intro to Multimedia	3
MGD 104 Videography I	3
MGD 111 Adobe Photoshop I	3
MGD 114 Adobe InDesign	3
JOU 114 TV Production	3
or JOU 121 Photojournalism	
JOU 206 Intermediate Newswriting and Editing	3
JOU 241 Magazine Article Writing	3
MGD 216 Adobe Acrobat Professional	3
JOU 225 Internet Media	3
JOU 215 Publications Production and Design	3
Faculty Advisor Approved Electives from MGD	6
MGD Recommended Electives	
JOU 121 Photojournalism	3
MGD 143 Motion Graphic Design I: Adobe Flash	3
MGD 141 Web Design I: Adobe Dreamweaver	3
MGD 164 Digital Video Editing I: Apple Final Cut Pro	3
*ART 143 Digital Photography I	3
*MUS105 Intro to Computer/Electronic Music	3
Required General Education Courses	15
*ART 143 and *MUS 105 may be used to fulfill one Humanities and the General Education Elective Course Requirements.	
Total Credits	60

AAS Degree

Emphasis in Professional Photography:

Traditional Film

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.

PHO Advisor: Michael Fulks, michael.fulks@rrcc.edu

Required Courses	Credits
ART 113 History of Photography	3
ART 138 Film Photography I	3
ART 238 Film Photography II	3
PHO 143 Perception and Photography	3
PHO 260 Event and Wedding Photography	3
ART 251 Portrait Photography	3
ART 252 Landscape Photography	2
AND PHO 240 Field Techniques & Exploration	1
or ART 158 Figure Photography I	
PHO 204 Commercial Studio Lighting	3
MGD xxx Business for Creatives	3
JOU 121 Photojournalism	3
PHO 235 Architectural Photography	3
PHO xxx Close Up & Macro Photography	3
PHO xxx Darkroom Alternative Processes	3
MGD/PHO Advisor Approved Electives	6
PHO Recommended Electives:	
*ART 143 Digital Photography I	3
*MUS105 Intro to Computer/Electronic Music	3
*ART 121 Drawing I	3
*ART 131 Visual Concepts: 2D Design	3
Required General Education Courses	15
*ART 121 and/or ART 131 or ART 143 and/or MUS 105 may be used to fulfill one Humanities and the General Education Elective.	
Total Credits	60

AAS Degree

Emphasis in Professional Photography: Digital Photography

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.

PHO Advisor: Michael Fulks, michael.fulks@rrcc.edu

Required Courses	Credits
ART 113 History of Photography	3
PHO 143 Perception and Photography	3
ART 143 Digital Photography I	3
ART 243 Digital Photography II	3
MGD 111 Adobe Photoshop I	3
ART 248 Digital Darkroom I	3
ART 251 Portrait Photography	3
ART 252 Landscape Photography	2
AND PHO 240 Field Techniques & Exploration	1
or ART 158 Figure Photography I	3
PHO 204 Commercial Studio Lighting	3
MGD xxx Business for Creatives	3
MGD 121 Corel Painter for Digital Media	3
JOU 121 Photojournalism	3
or PHO 260 Event and Wedding Photography	
PHO 266 Professional Digital Workflow: Adobe Lightroom	3
PHO/MGD Advisor Approved Electives	6
PHO Recommended Electives	
*MUS105 Intro to Computer/Electronic Music	3
*ART 121 Drawing I	3
*ART 131 Visual Concepts: 2D Design	3
Required General Education Courses	15
*ART 121 and/or ART 131 or ART 143 and/or MUS 105 may be used to fulfill one Humanities and the General Education Elective.	
Total Credits	60

AAS Degree

Emphasis in Professional Photography: Traditional Film & Digital Photography

The Professional Photography: Traditional Film & 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.

PHO Advisor: Michael Fulks, michael.fulks@rrcc.edu

Required Courses	Credits
*ART 113 History of Photography	3
*ART 138 Film Photography I	3
ART 238 Film Photography II	3
ART 143 Perception and Photography	3
ART 143 Digital Photography I	3
ART 243 Digital Photography II	3
MGD 111 Adobe Photoshop I	3
ART 248 Digital Darkroom I	3
ART 251 Portrait Photography	3
ART 158 Figure Photography I	3
or PHO 260 Event & Wedding Photo	
PHO 204 Commercial Studio Lighting	3
MGD xxx Business for Creatives	3
MGD 121 Corel Painter for Digital Media	3
or PHO 266 Professional Digital Workflow Adobe Lightroom	
MGD/PHO Advisor Approved Electives	6
PHO Recommended Electives:	
*ART 143 Digital Photography I	3
*MUS105 Intro to Computer/Electronic Music	3
*ART 121 Drawing I	3
*ART 131 Visual Concepts: 2D Design	3
Required General Education Courses	15
ART 113 and ART 138 or *ART 121 and/or ART 131 or ART 143 and/or MUS 105 may be used to fulfill one Humanities and the General Education Elective. Students may substitute ART/PHO/MGD classes if the ART 113 and ART 138 are counted toward the Humanities and General Education Course Requirements.	
Total Credits	60

AGS Specialist Degree-MSCD

The articulation agreement with Metropolitan State College of Denver allows students to transfer up to 60 RRCC semester hours of the Associate of General Studies toward MSCD's Bachelor's Degree in Technical Communication through the department of Technical Communication. These degrees do not allow for the substitution of classes, either in the Core Curriculum Requirements, or in the Program Specific Requirements. If the student does not follow the degree plan exactly as presented in the Degree and Certificate Planning Guide, Metropolitan State College of Denver reserves the right to accept RRCC credit as general elective credit, not program specific credit. The AGS is the only degree plan that MSCD accepts for full transfer into the Technical Communications Program.

AGS Degree-MSCD

Graphic Design & Print Production

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 technology is also addressed.

You must contact an MGD faculty advisor during your first semester for degree advising.

Required Courses	Credits
MGD 101 Introduction to Computer Graphics	3
MGD 103 Introduction to Production Design	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 114 Adobe InDesign	3
MGD 202 Point of Purchase Package Design	3
MGD 213 Electronic Prepress	3
MGD xxx Business for Creatives	3
MGD/MSCD Faculty Advisor Approved Electives from MGD	3
Required Core Curriculum Classes	34-40
Minimum Required Credits	60

AGS Degree-MSCD

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.

You must contact an MGD faculty advisor during your first semester for degree advising.

Required Courses	Credits
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 104 Videography I	3
MGD 143 Motion Graphic Design I: Adobe Flash	3
MGD 163 Sound Design I: Apple Logic Pro	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
MGD 165 Adobe AfterEffects I	3
MGD xxx Business for Creatives	3
MGD/MSCD Faculty Advisor Approved Electives from MGD	3
Required Core Curriculum Classes	34-40
Minimum Required Credits	60

AGS Degree-MSCD

Motion Graphics Animation

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.

You must contact an MGD faculty advisor during your first semester for degree advising.

Required Courses	Credits
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: Maxon Cinema 4D	3
MGD 253 3D Animation II: Maxon Cinema 4D	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
MGD xxx Business for Creatives	3
MGD/MSCD Faculty Advisor Approved Electives from MGD	3
Required Core Curriculum Classes	34-40
Minimum Required Credits	60

AGS Specialist Degree-RMCAD

The articulation agreement with Rocky Mountain College of Art and Design allows students to transfer up to 60 RRCC semester hours of the Associate of General Studies toward RMCAD's Bachelors of Fine Arts in Graphic Design. These degrees do not allow for the substitution of classes, either in the Core Curriculum Requirements, or in the Program Specific Requirements. If the student does not follow the degree plan exactly as in the Degree and Certificate Planning Guide, Rocky Mountain College of Art and Design reserves the right to accept RRCC credit as general elective credit, not program specific credit. The AGS is the only degree plan that RMCAD accepts for full transfer into the BFA in Graphic Design. **You must contact an MGD faculty advisor during your first semester for degree advising.**

AGS Degree-RMCAD

Graphic Design

Required Courses	Credits
MGD 101 Introduction to Computer Graphics	3
ART 121 Drawing I	3
ART 131 Visual Concepts 2D Design	3
ART 132 Visual Concepts 3D Design	3
MGD 112 Adobe Illustrator	3
MGD 116 Typography I	3
MGD 103 Intro to Production Design	3
MGD/RMCAD Faculty Advisor Approved	
MGD Electives	9
Required Core Curriculum Classes	34-40
Minimum Required Credits	60

Certificate

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. The Graphic Design and Print Production certificate, when combined with the Motion Graphics Animation AAS degree, the Interactive Training and Simulation AAS degree, Video Production AAS Degree, 3D Design and Animation AAS or the Web Design and Development AAS degree adds additional marketable skills to the traditional AAS degree.

Required Courses	Credits
MGD 101 Introduction to Computer Graphics	3
or	
MGD 102 Introduction to Multimedia	3
MGD 103 Introduction to Production Design	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 114 Adobe InDesign	3

MGD 118 Digital Color Theory	3
MGD 121 Corel Painter for Digital Media	3
or	
MGD 216 Adobe Acrobat Professional	3
MGD 202 Point of Purchase Packaging Design	3
MGD 211 Adobe Photoshop II	3
or	
MGD 212 Adobe Illustrator II	3
MGD 213 Electronic Prepress	3
Total Credits	30

Certificate

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. The Video Production certificate, when combined with the Graphic Design and Print Production AAS degree, Motion Graphics Animation AAS degree, 3D Design and Animation AAS degree, Game Design and Development AAS degree or the Interactive Training and Simulation AAS degree adds additional marketable skills to the traditional AAS degree.

Required Courses	Credits
MGD 101 Introduction to Computer Graphics	3
or	
MGD 102 Introduction to Multimedia	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 104 Videography	3
MGD 163 Sound Design I: Apple Logic Pro	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
MGD 165 Adobe AfterEffects I	3
MGD 264 Digital Video Editing II: Final Cut Pro	3
MGD 204 Videography II	3
Total Credits	30

Certificate

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. The Motion Graphics Animation certificate, when combined with the Graphics Design and Print Production AAS degree, the Interactive Training and Simulation AAS degree, 3D Design and Animation AAS degree, Game Design and Development AAS degree, Video Production AAS degree, or the Web Design and Development AAS degree adds additional marketable skills to the traditional AAS degree.

Required Courses	Credits
ART 149 Animation Drawing/Design or ART 121 Drawing I	3
MGD 102 Introduction to Multimedia	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 152 Digital Animatics	3
MGD 143 Motion Graphic Design I: Adobe Flash	3
MGD 165 Adobe AfterEffects I	3
MGD 243 Motion Graphic Design II: Adobe Flash	3
MGD 212 Adobe Illustrator II	3
MGD 265 Adobe AfterEffects II	3
Total Credits	30

Certificate

Game Art

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 basic experience with game engines, sound design and digital storyboarding. The Game Art Certificate, when combined with the Motion Graphics Animation AAS degree, the Interactive Training and Simulation AAS degree, 3D Design and Animation AAS degree or the Web Design and Development AAS degree adds additional marketable skills to the traditional AAS degree.

Required Courses	Credits
MGD 111 Adobe Photoshop I or	3
CWB 162 Introduction to Image Editing	3
MGD 112 Adobe Illustrator or	
MGD 125 3D Modeling for Gaming: 3D Studio Max	3
MGD 167 Game Design I or	3
CSC 126 Game Design and Development	3

MGD 152 Digital Animatics	3
MGD 143 Motion Graphics Design I: Adobe Flash or	3
CWB 245 Complete Web Animation: Adobe Flash	3
MGD 153 3D Animation I: Maxon Cinema 4D	3
MGD 163 Sound Design I	3
MGD 119 Autodesk Maya I	3
MGD 267 Game Design II	3
MGD 253 3D Animation II or	3
MGD 219 Autodesk Maya II	3
MGD/CSC Advisor Approved Electives	6
Total Credits	30

Certificate

Web Design

The Web design express certificate within the Multimedia Graphic Design Department prepares you for entry-level work in Web page production. You will learn the importance of page layout, user interface, and design, as well as site design. The Web Design certificate and/or the Advanced Web Design certificate, when combined with the Graphic Design and Print Production AAS degree, Motion Graphic Animation AAS degree, or Video Production AAS degree adds additional marketable skills to the traditional AAS degree.

It is highly recommended that students also take CWB 110 Complete Web Authoring or have basic HTML coding skills before taking MGD 141.

Required Courses	Credits
CWB 110 Complete Web Authoring: HTML	3
MGD 111 Adobe Photoshop I	3
MGD 112 Adobe Illustrator I	3
MGD 141 Web Design I: Adobe Dreamweaver	3
MGD 143 Web Motion Graphic Design I: Adobe Flash	3
MGD 241 Web Design II: Adobe Dreamweaver	3
Total Credits	18

Certificate

Advanced Web Design

You will evaluate the look and feel of Web 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. You must complete or be concurrently enrolled in the Web Design Certificate program.

Required Courses	Credits
MGD 104 Videography I	3
MGD 163 Sound Design I: Apple Logic Pro	3
MGD 164 Digital Video Editing I: Final Cut Pro	3
CWB 205 Complete Web Scripting	3

MGD 243	Web Motion Graphic Design II: Adobe Flash	3
JOU 225	Internet Media	3
Total Credits		18

Certificate

3D Design and Animation

(PENDING APPROVAL)

The 3D Design and Animation emphasis prepares you for 3D design, modeling and animation production work. You will develop basic skills for entry-level jobs in the fields of TV and movie production as well as 3D modeling, presentation design and multimedia design. The certificate in 3D Design and Animation, when combined with the Motion Graphics Animation AAS Degree, Game Design and Development AAS degree, Web Design and Development AAS degree or Video Production AAS degree adds additional marketable skills to the traditional AAS degree.

Required Courses		Credits
ART 149	Animation Drawing/Design or	
ART 121	Drawing I	3
ART 132	Visual Concepts: 3D Design	3
MGD 111	Adobe Photoshop I	3
MGD 125	3D Modeling for Gaming I: 3DS Max	3
MGD 152	Digital Animatics	3
MGD 153	3D Animation I: Maxon Cinema 4D	3
MGD 165	Adobe AfterEffects I	3
MGD 119	Autodesk Maya I	3
MGD 253	3D Animation II: Maxon Cinema 4D or	3
MGD 219	Autodesk Maya II	3
MGD 257	Animation Production	3
Total Credits		30

Certificate

Interactive Training and Simulation

(PENDING APPROVAL)

The Interactive Training and Simulation certificate prepares students to create basic interactive training multimedia and simulation scenarios used for corporate training, educational training and professional development. You will combine design and multimedia skills to create training videos, training quizzes, and training multimedia which combine basic animation, video, and sound to create rich media training applications for both business and education for use online or via CD or DVD. The certificate in Interactive Training and Simulation, when combined with the Motion Graphics Animation AAS Degree, Game Design and Development AAS degree, Web Design and Development AAS degree or Video Production AAS degree adds additional marketable skills to the traditional AAS degree.

Required Courses		Credits
MGD 104	Videography I	3
MGD 111	Adobe Photoshop I	3
MGD 112	Adobe Illustrator I	3
MGD 114	Adobe InDesign	3
MGD 115	Multimedia Team Development	3
MGD 141	Web Design I: Dreamweaver	3
MGD 143	Motion Graphic Design: Adobe Flash I	3
MGD 254	Multimedia Design and Production I	3
MGD 216	Adobe Acrobat Professional	3
MGD 269	Multimedia Design and Production II	3
Total Credits		30

Certificate

Digital Media Journalism

(PENDING APPROVAL)

The Digital Media Journalism certificate prepares students for work with blogs, microblogs, and social networking applications for delivering mass media using the internet as the primary means of media distribution. Students will combine traditional journalism skills in writing and editing with digital skills in video, page layout and production to produce, e-zines, blogs, podcasts and other relevant internet publications. The certificate in Digital Journalism, when combined with the Motion Graphics Animation AAS Degree, Web Design and Development AAS degree or Video Production AAS degree adds additional marketable skills to the traditional AAS degree.

Required Courses		Credits
JOU 102	Intro to Editing	3
JOU 105	Introduction to Mass Media	3
JOU 106	Fundamentals of Reporting	3
MGD 104	Videography I	3
MGD 111	Adobe Photoshop I	3
MGD 114	Adobe InDesign	3
JOU 241	Magazine Article Writing	3
MGD 216	Adobe Acrobat Professional	3
JOU 225	Internet Media	3
JOU 215	Publications Production and Design	3
Total Credits		30

Certificate

Professional Photography – Traditional Film

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 with Manual Controls.

Required Courses		Credits
ART 113	History of Photography	3
ART 138	Film Photography I	3
ART 139	Film Photography II	3
PHO 143	Perception and Photography	3
ART 158	Figure Photography I	3

	or ART 252 Landscape Photography (2) and PHO 240 Field Techniques and Exploration (1)	
PHO 260	Event and Wedding Photography	3
ART 251	Portrait Photography	3
PHO 204	Commercial Studio Lighting	3
MGD xxx	Business for Creatives	3
JOU 121	Photojournalism	3
Total Credits		30

MGD 111	Adobe Photoshop I	3
ART 248	Digital Darkroom I	3
PHO 143	Perception and Photography	3
ART 251	Portrait Photography	3
	or	
PHO 260	Event and Wedding Photography	3
PHO 204	Commercial Studio Lighting	3
MGD xxx	Business for Creatives	3
PHO 266	Professional Digital Workflow: Adobe Lightroom	3
	or	
ART 158	Figure Photography I	3
	or	
MGD 121	Painter for Digital Media	3
Total Credits		30

Certificate

Professional Photography – Digital Photography

Students 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. Students need a digital SLR camera or a digital camera with manual settings.

Required Courses	Credits
ART 113 History of Photography	3
ART 143 Digital Photography I	3
ART 243 Digital Photography II	3
PHO 143 Perception and Photography	3
MGD 111 Photoshop I	3
PHO 260 Event and Wedding Photography	3
	or
ART 251 Portrait Photography	3
ART 248 Digital Darkroom I	3
ART 251 Portrait Photography	3
PHO 204 Commercial Studio Lighting	3
MGD xxx Business for Creatives	3
PHO 266 Professional Digital Workflow: Adobe Lightroom	3
	or
ART 158 Figure Photography I	3
	or
MGD 121 Painter for Digital Media	3
Total Credits	30

Certificate

Professional Photography – Traditional Film and Digital Photography

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.

Required Courses	Credits
ART 113 History of Photography	3
ART 138 Film Photography I	3
ART 143 Digital Photography I	3

Nursing

Pre-Nursing

Certificates:

Nurse Aide RN Refresher Program

Pre-Nursing

Admission and course requirements vary among nursing programs. Please 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

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. Drug screening will be done during the first week of school. You must complete a criminal background check prior to enrolling in the program by using American DataBank's online background check procedures at www.healthcareex.com. For a Step by Step Nursing Assistant Enrollment process, please visit our Web site at: www.rccc.edu/health/nuraidcour.html.

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

Certificate

RN Refresher Program

Requirements for this program: A current Colorado RN license, or a license to be reinstated 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. This is not an open enrollment offering. You must make a separate application to the program. For more information: www.rccc.edu/health/rnrefresh.

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

Outdoor Recreation

Degree: Associate of General Studies

Outdoor Recreation

Certificates

Outdoor Recreation Leadership with Emphases in:

Winter Skills Specialist

Water-based Skills Specialist

Mountaineering Skills Specialist

Outdoor Recreation Generalist

AGS Degree

Outdoor Recreation

The associate of general studies degree with an emphasis in outdoor recreation is also designed as a stand-alone program to allow you to enter a career as an outdoor educator, recreation specialist, or in one of many careers in the outdoor industry.

Information: 303.914.6238 or email bill.haas@rccc.edu

Required Major Courses	Credits
PER 128 Intro to Recreation	2
PER 252 Principles of Outdoor Recreation	3
PER 253 Outdoor 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	4
Additional General Education Courses	35
Approved Electives	6
Total Credits	60

Certificate

Outdoor Recreation Leadership

By completing the Outdoor Recreation Leadership Certificate Program, you 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, you will be prepared to be a future outdoor trip leader 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 (1) 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 Introduction 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
Total Required Credits	20

Area of Emphasis:

Winter Skills Specialist

Outdoor Recreation Leadership Certificate 20

And select 7 credits from the following courses:

Courses	Credits
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 156 Snow and Glacier Climbing	3
PED 280 Internship	3
Total Required Credits	27

Emphasis in:

Water-based Skills Specialist

Outdoor Recreation Leadership Certificate 20

And select 7 credits from the following courses:

Required courses	Credits
PED 127 Flyfishing	1
PER 150 Water Safety Instructor	3
PED 128 Basic Sailing	1
PED 129 Scuba Diving	1
PER 151 Lifeguard Training	2
PER 153 Whitewater Rafting/Guide	2
PED 207 Intermediate Whitewater Canoeing	1
PED 237 Paddle Sports	2
PED 280 Internship	3
Total Required Credits	27

Emphasis in:

Mountaineering Skills Specialist

Outdoor Recreation Leadership Certificate 20

And select 10 credits from the following courses:

Required courses	Credits
PED 150 Rock Climbing	2
PED 151 Rock Climbing II	2
PED 154 Backpacking	2
PED 155 Outdoor Expedition	3
PED 156 Snow and Glacier Climbing	3
PED 157 Basic Mountaineering	3
PED 159 Colorado's Fourteeners	2
PED 166 Winter Wilderness Survival Skills	2
PER 256 Mountaineering Teaching Concepts	3
PED 280 Internship	3
Total Required Credits	30

Emphasis in:

Outdoor Recreation Generalist

Outdoor Recreation Leadership Certificate 20

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 **Outdoor Recreation Leadership Certificate** courses. Students completing this program emphasis can expect a well-rounded outdoor recreation experience and training in various aspects of outdoor recreation and leadership competencies.

Total Required Credits 32

Park Ranger Technology

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

- Students with a high school diploma, or some college, wishing to begin a program of study to prepare them for employment as a professional Park Ranger. In addition to the PRT Certificate of Concentration, the PRT program advisor will help you design an appropriate 2-year associates degree that can be transferred to a four-year institution.
- Students seeking part-time or full-time seasonal employment as a Park Ranger with an agency (local, state, or federal) which may not require a four-year degree. Students must first consult with the PRT program advisor before beginning any program of study.
- Students who already have a four-year degree in an unrelated field and who wish to make a career change.

Information: 303.914.6238 or email bill.haas@rrcc.edu

Certificates:

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

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
LEA 101-108 Post Law Enforcement Academy	37
PRA 102 Introduction to Park Ranger Technology	3
PRA 203 Natural Resource Management	3
PRA 280 Park Ranger Internship	3
Total Credits	46

Certificate

Public Safety

The Public Safety Certificate provides necessary training for those students wanting to work for agencies providing fire, EMS, rescue, hazardous materials, or other response/mitigation services.

Required Courses	Credits
PRA 102 Introduction to Park Ranger Technology	3
PRA 203 Natural Resource Management	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
Total Credits	28

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 203 Natural Resource Management	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
Required Course credits	20

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	2
PER 168 Outdoor Equipment and Facilities	3

PED 207	Intermediate Whitewater Canoeing	1
PED 237	Paddle Sports	2
PER 153	Whitewater Rafting Guide	2
Total Required and Elective Credits		33

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
PER 160	Wilderness Ethics	3
Total Credits		18

Philosophy

Degree: Associate of Arts

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 philosophy. Meet with a philosophy faculty advisor before beginning any program of study.

Required Courses		Credits
PHI 111	Introduction to Philosophy	3
PHI 112	Ethics	3
PHI 113	Logic	3
PHI 114	Comparative Religions	3
Additional General Education Courses		32
Approved Electives		16
Total Credits		60

Phlebotomy

(See Health Professions)

Photography

(See Multimedia Graphic Design)

Physical Education/Outdoor Education

Degree: Associate of General Studies

Please meet with the Outdoor Physical Education faculty advisor before beginning this program.

The associate of general studies degree 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 in the outdoor industry.

Information: 303.914.6238 or email bill.haas@rrcc.edu

Required Courses		Credits
PED 150	Rock Climbing I	2
PED 151	Rock Climbing II	2
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	2
PED 237	Paddle Sports	2
PER 253	Outdoor Leadership	2
Additional General Education Courses		38
Approved Electives		6
Total Credits		60

Physician Assistant

Certificate:

Physician Assistant

Physician Assistants (PAs) are healthcare providers who are authorized to practice medicine with the supervision of a licensed physician. The mission of the RRCC PA Program is to train clinically competent and compassionate physician assistants to provide primary care to the medically underserved.

The rigorous, year-round, full-time, 24-month curriculum leads to a certificate that qualifies graduates to sit for the Physician Assistant National Certifying Examination (PANCE). The first 12 months of the program is devoted to classroom, laboratory, and small-group work, most of which is on campus. The second 12 months is devoted to off-campus clinical rotations, many of which may be scheduled at sites outside of the Denver 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.

Please note that admissions requirements, program curriculum, and graduation requirements are subject to change. The RRCC PA program Web site is the most current source for program information. (www.rrcc.edu/pa)

Program Application and Admission Criteria :

Candidates must submit an application to the program through the Central Application Service for Physician Assistants (CASPA). Application information with a link to CASPA is found on the RRCC PA program Web site. At the time of application, candidates must have completed a Bachelors degree from a regionally accredited institution of higher education.

Required First Year Courses	Credits
PAP 201, 202, 203 Professional Seminar I, II, III	1
PAP 204, 205, 206 Problem Based Learning I, II, III	1
PAP 207, 208 Clinical Medicine I, II	3
PAP 209 Clinical Medicine III	4
PAP 210, 211 History and Physical Exam I, II	2
PAP 212 History and Physical Exam III	1
PAP 213 Clinical Procedures	1
PAP 214 Behavioral Medicine	1
PAP 220 Anatomy	3
PAP 221 Biochemistry	3
PAP 222 Physiology	3
PAP 223 Pathophysiology	2
PAP 224 Pharmacology I	1
PAP 225, 226 Pharmacology II, III	2
HPR 120 ACLS	1
HPR 130 PALS	1

Required Second Year Courses	Credits
PAP 231, 232, 233 Professional Seminar IV, V, VI	1
PAP 234, 245, 236 Problem Based Learning IV, V, VI	1
PAP 240, 241 Family Medicine I, II	3
PAP 242, 243 Internal Medicine I, II	3
PAP 244 Women’s Health	3
PAP 245 Emergency Medicine	3
PAP 246 Surgery	3
PAP 247 Pediatrics	3
PAP 248 Psychiatry	3
PAP 249 Geriatrics/LTC	3
PAP 250, 251 Elective I, II	3

Physics

The completion of the following courses is appropriate for you if you plan to transfer to a four-year college or university to complete a major in physics. 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.

Degree: Associate of Science

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

Plumbing

This program provides basic entry level and job upgrade skills. It is also intended to assist in the preparation of plumbers for successful completion of state plumbing exams. Completion of plumbing related coursework at Red Rocks Community College can replace the field experience (work under a master plumber) required to qualify to take the exams as follows: one hour of classroom training equals one hour of on the job training up to a maximum of one year.

Bachelor of Science transfer program: All Construction Technology Associate of Applied Science graduates are eligible to participate in the Colorado Community College Pathways program, a strategic partnership between DeVry University – Colorado and Red Rocks Community College. Students may transfer 80+ credit hours from Red Rocks Community College to DeVry University and complete a Bachelor of Science in Technical Management in as few as two semesters.

The plumbing career pathway curriculum is under revision. Beginning in Spring 2009, the sequence of basic skills courses will align with the Plumbing, Heating, Cooling Contractors (PHCC) national four-year apprentice-training curriculum. Slight changes will be made to reflect Colorado Codes and regulations. Consult with a Construction Technology advisor at 303.914.6367 for additional details.

Specialized and job upgrade courses (for example, PLU 207 International Plumbing Code, PLU 205 Backflow

Prevention Certification Training, PLU 247 Hot Water Heating Systems) will continue to be taught as stand alone courses.

Degrees: Associate of Applied Science

Plumbing
Plumber/Pipe fitter

Certificates:

Colorado Plumbing Code Test Preparation
International Plumbing and Mechanical Codes

(see Construction Technology)

RRCC / PHCC Plumbing Apprenticeship

First Year
Second Year
Third Year
Fourth Year

AAS Degree

Plumbing

Required Courses	Credits
Plumbing Apprenticeship Certificates (Years 1- 4)	59
General Education Requirements - Addition Courses	15
Total Credits	74

AAS Degree

Plumber/Pipefitter

Through a partnership with the United Association of Plumbing and Pipefitters, 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
General Education Requirements	15
Computer Skills	2
Total Credits	60

Certificate

Colorado Plumbing Code Test Preparation

Contact your Construction Technology advisor to plan course sequencing.

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

Certificate

Residential Plumbing and Heating

Required Courses	Credits
Residential Plumbing Certificate	31
PLU 247 Hot Water Heating Systems	4
HVA 105 Electricity for HVAC/R	4
HVA 110 Fundamentals of Gas Heating	4
HVA 140 Basic Sheet Metal	4
HVA 162 Heating Controls	4
HVA 206 International Mechanical Code	4
PLU 208 International Fuel Gas Code	4
HVA 240 Servicing Forced Air Systems	4
Total Credits	63

Certificates:

RRCC / PHCC Plumbing Apprenticeship

First Year Apprenticeship Certificate

Required Courses	Credits
PLU 111 Plumbing Apprentice Yr1 Sem1	5
OSH 127 10-HR Construction Industry Standards	1
PLU 112 Plumbing Apprentice Yr1 Sem2	5
MAT 107 Career Math	3
Total Credits	14

Second Year Apprenticeship Certificate

Required Courses	Credits
PLU 121 Plumbing Apprenticeship Yr 2 Sem 1	5
CON 230 Blueprint Reading	4
PLU 122 Plumbing Apprenticeship Yr 2 Sem 2	5
PLU 104 Plumbing Service	4
Total Credits	18

Third Year Apprenticeship Certificate

Required Courses		Credits
PLU 231	Plumbing Apprenticeship Yr 3 Sem 1	5
PLU 208	International Fuel Gas Code	4
PLU 232	Plumbing Apprenticeship Yr 3 Sem 2	5
PLU 247	Hot Water Heating Systems	4
Total Credits		18

Fourth Year Apprenticeship Certificate

Required Courses		Credits
PLU 207	International Plumbing Code	4
PLU 242	Plumbing Apprenticeship Yr 4	5
Total Credits		9

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.

Required Courses		Credits
POS 105	Introduction to Political Science*	3
POS 111	American Government*	3
POS 125	American State and Local Government *	3
POS 205	International Relations*	3
POS 225	Comparative Government*	3
POS 215	Current Political Issues *	3
ECO 201	Principles of Macroeconomics*	3
HIS 247	Contemporary World History*	3
*Fulfills General Education requirement		
Additional General Education Courses		26
Approved Electives		10
Total Credits		60

Power Equipment and Sport Vehicle Technology

(In cooperation with and taught at Warren Tech)
This two year program is designed to provide students with the basic and advanced skill training as needed for successful entry to the power and sport vehicle industry.

Degree: Associate of Applied Science

Power Equipment and Sports Vehicle Technology

Certificates:

- Power Equipment Maintenance Technician
- Sports Vehicle Maintenance Technician

AAS Degree

Power Equipment and Sports Vehicle Technology

Required Courses		Credits
HEM 110	Gasoline,Power Plants,Elec Sys	5
HEM 113	Diesel Fuel Systems	3
HEM 161	Heavy Equipment Laboratory	4
HEM 210	Hydraulics and Transmissions	3
HEM 211	Final Drives and Brakes	2
SVT 101	SVT Orientation and Safety	1
SVT 102	SVT Rolling Chassis	3
SVT 103	SVT Electrical Theory	2
SVT 104	2 Stroke Engines	2
SVT 105	4 Stroke Engines	2
SVT 106	SVT Electrical Repair	2
SVT 107	SVT Drive Systems	2
SVT 108	SVT Trade Practices	1
SVT 109	SVT Snow/ATV/PWC	2
SVT 143	Physics for Transportation	3
SVT 160	Basic Motorcycle Repair I	1
SVT 165	Basic Motorcycle Repair II	1
SVT 170	Basic Motorcycle Repair III	6
SVT 175	Basic Motorcycle Repair IV	6
SVT 180	Basic Motorcycle Repair IV	6
SVT 180	Basic Motorcycle Repair IV	6
HEM 268	Heavy Equipment Laboratory I	4
HEM 269	Heavy Equipment Laboratory II	4
General Education Requirements		15
Total Credits		69

Certificate

Power Equipment Maintenance Technician

Required Courses	Credits
HEM 110 Gasoline,Power Plants,Elec Sys	5
HEM 113 Diesel Fuel Systems	3
HEM 161 Heavy Equipment Laboratory	4
HEM 210 Hydraulics and Transmissions	3
HEM 211 Final Drives and Brakes	2
HEM 268 Heavy Equipment Laboratory I	4
HEM 269 Heavy Equipment Laboratory II	4
Total Credits	25

Certificate

Sports Vehicle Maintenance Technician

Required Courses	Credits
SVT 101 SVT Orientation and Safety	1
SVT 102 SVT Rolling Chassis	3
SVT 103 SVT Electrical Theory	2
SVT 104 2 Stroke Engines	2
SVT 105 4 Stroke Engines	2
SVT 106 SVT Electrical Repair	2
SVT 107 SVT Drive Systems	2
SVT 108 SVT Trade Practices	1
SVT 109 SVT Snow/ATV/PWC	2
SVT 143 Physics for Transportation	3
SVT 160 Basic Motorcycle Repair I	1
SVT 165 Basic Motorcycle Repair II	1
SVT 170 Basic Motorcycle Repair III	6
SVT 175 Basic Motorcycle Repair IV	6
SVT 180 Basic Motorcycle Repair IV	6
SVT 180 Basic Motorcycle Repair IV	6
Total Credits	29

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.

Degree: Associate of Applied Science

Precision Machining

Certificates:

Lathe Operator

Mill Operator

CNC Lathe Operator

CNC Mill Operator

AAS Degree

Precision Machining

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

Choose 15 credits from any of the following courses:

MAC 123 Horizontal Mill Set Up and 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 and Cutter Grinder	3
MAC 240 CAD/CAM 2D	3
MAC 245 CAD/CAM 3D	3
MAC 258 Interpreting Engineering Drawings	3
TEC 205 Geometric Dimensioning and Tolerancing	3

General Education Requirements

ENG 131 Technical Writing	3
MAT 107 Career Math (or higher)	3

Credit from any two of the following three areas: 9

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

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

Social Science (ANT, ECO, HIS, POS, PSY, SOC)

Total Credits 60

Certificate

Lathe 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 112 Advanced Engine Lathe	3
Total Credits	15

Certificate

Mill Operator

Required Courses	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
Total Credits	15

Certificate

CNC Lathe Operator

Required Courses	Credits
MAC 201 Introduction to CNC Turning Operations	3
MAC 202 CNC Turning Operations II	3
MAC 240 CAD/CAM 2D	3
Total Credits	9

Certificate

CNC Mill Operator

Required Courses	Credits
MAC 205 Introduction to CNC Milling Operations	3
MAC 206 CNC Milling Operations II	3
MAC 240 CAD/CAM 2D	3
Total Credits	9

Process Technology – Energy Operations

Degree: Associate of Applied Science

Process Technology – Energy Operations

Certificates:

- Introduction to Process Equipment
- Introduction to Process Plant Instrumentation
- Introduction to Process Plant Safety
- Introduction to Process Plant Operations
- Introduction to Process Plant Quality Management

AAS Degree

Process Technology – Energy Operations

The Process Technology – Energy Operations Program will prepare students for entry level employment as industrial operations technicians and operators. A process operator/technician is 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 and food and beverage and consumer products.

This program will provide the student with an understanding of process equipment and its principles of operation and control. The graduate will understand the technical aspects of the work, the responsibilities

of the work and the importance of safety in this vitally important, shift oriented position.

The industries interested in the graduates from the program include, but are not limited to energy source production, oil and gas 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: 303.914.6063, 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: Equipment I	4
PRO 125 Process Technology: Equipment II	4
PRO 130 Process Instrumentation I	3
PRO 131 Process Instrumentation II	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 Trouble Shooting	4
PRO 280 Internship	3

Required General Education Courses:

CIS 118 Introduction to PC Applications	3
BUS 118 Business Survival Skills	3
ENG 121 English Composition I	3
MAT 107 Career Math	3
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
Total Credits	62

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: Equipment I	4
PRO 125 Process Technology: Equipment II	4
Total Credits	14

Certificate

Introduction to Process Plant Instrumentation

Required Courses	Credits
PRO 110 Safety, Health, and Environment	3
PRO 130 Process Instrumentation I	3
PRO 131 Process Instrumentation II	3
Total Credits	9

Certificate

Introduction to Process Plant Safety

Required Courses	Credits
PRO 100 Introduction to Process Technology	4
PRO 110 Safety, Health, and Environment	3
Total Credits	7

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
Total Credits	15

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 118 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.

Required Courses	Credits
PSY 101 General Psychology I *	3
PSY 102 General Psychology II *	3
Choose one of following advanced classes	
PSY 215 Psychology of Adjustment	3
PSY 226 Social Psychology	3
PSY 235 Human Growth and Development *	3
PSY 238 Child Development	3
PSY 249 Abnormal Psychology	3
*Fulfills General Education requirement.	
Additional General Education Courses	29
Approved Electives	22
Total Credits	60

RN Refresher Program

(See Nursing)

Radiologic Technology

The Radiologic Technology Program is designed to provide medical diagnostic radiography training for students who wish to establish eligibility to participate in the national certification examination of the American Registry of Radiologic Technologists. Graduates who pass this national certifying examination are qualified to assume diagnostic radiographer positions in thousands of medical facilities across the nation, both in hospitals and private clinics or offices. After gaining on-the-job experience, you 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. You must complete 15-17 credits of general education course work, as well as HPR 178 and RTE 101, prior to applying. Please visit the Medical Imaging

Education Web site or contact a academic advisor for more information on the application process. Information sessions for the Radiologic Technology Program are held regularly throughout the year.

**Additional fees are charged for RTE 181.

Information: 303.914.6034, www.rrcc.edu/radiology

Degree: Associate of Applied Science

Prerequisite Courses:		Credits
HPR 178	Medical Terminology	2
RTE 101	Introduction to Radiology	2
Required Courses		Credits
RTE 111	Patient Care	2
RTE 121	Radiologic Procedures I	3
RTE 131	Radiographic Pathology and Image Evaluation I	1.5
RTE 141	Radiographic Equipment and Imaging I	3
RTE 181	Clinical Internship I **	5
RTE 122	Radiologic Procedures II	3
RTE 132	Radiographic Pathology & Image Evaluation II	1.5
RTE 142	Radiographic Equipment and Imaging II	3
RTE 182	Clinical Internship II	5
RTE 183	Clinical Internship III	7
RTE 221	Advanced Medical Imaging	3
RTE 231	Radiation Biology/Protection	2
RTE 281	Clinical Internship IV	8
RTE 282	Clinical Internship V	8
RTE 289	Registry Review (Capstone)	3
General Education Requirements		17
Recommended General Education Courses		
English Category		
ENG 121	English Composition I	3
Mathematics Category		
MAT 107	Career Math/Technical	3
Social Science Category		
PSY 235	Human Growth and Development	3
Science Category		
BIO 201	Human Anatomy and Physiology I	4
BIO 202	Human Anatomy and Physiology II	4
Total Credits		77

Certificates

Advanced education and training courses are available for individuals currently certified by the American Registry of Radiologic Technologists (ARRT) in the following specialties:

Computed Tomography (CT)

Magnetic Resonance Imaging (MRI)

Mammography

Bone Densitometry

For more information regarding these courses, please contact the program office at 303.914.6034

Real Estate and Small Business Start-Up

(See Business)

Refrigeration

(See Air Conditioning, Heating, and Refrigeration)

Renewable Energy Technology

Renewable energy sources are the cutting edge of America's quest for a diversified and secure energy future. Environmentally friendly and regenerating, renewable energy sources have always been the right choice, but with rising fuel costs, renewable energy sources are no longer a choice but a requirement. Careers in renewable energy will be increasing dramatically nationally as well as locally. There is an increasing demand for skilled workers in the local area for solar installers, home energy auditors and many other areas.

For information:

Larry Snyder, 303.914.6306 larry.snyder@rrcc.edu

Troy Wanek 303.914.6668

Degrees: Associate of Applied Science

Renewable Energy Technology

Solar Photovoltaic

Solar PV Business Owner

Solar Thermal

Solar Thermal Business Owner

Certificates:

Grid Tie Entry Level

Advanced PV Installation

Solar PV Designer

Solar Thermal Entry Level

Solar Thermal Installer

Solar Thermal Designer

Post EIC Degree Solar Photovoltaic

Post HVA Degree Solar Thermal

Energy Auditing

Energy Efficiency Weatherization

AAS Degree

Renewable Energy Technology

To earn this degree select a Solar Thermal or Solar Photovoltaic Specialty. Degree seeking students will complete the general education and core requirements listed below.

The AAS degree in Renewable Energy may also be customized to meet the needs of the entrepreneur operating a solar business. A renewable energy advisor will work with you to identify courses within the area which complement your career goals.

Information: Larry Snyder 303 914 6306, larry.snyder@rrcc.edu www.rrcc.edu/renewable

Solar Photovoltaic Specialty AAS

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
ENY 102 Building Energy Audit Tech	3
OSH 127 10 hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
CAR 123 Roof Framing	1
CAR 125 Roofing Materials and Methods	1
ENY 130 Photovoltaic Grid Tie	2
EIC 110 Electrical Installations I	4
EIC 130 National Electrical Code I	4
CON 105 Construction Tech	4
ENY 131 Advanced Solar PV	2
ENY 132 NABCEP Entry Level Prep Class	1
ENY 230 PV Maintenance and Troubleshooting	2
ENY 231 Solar Contracting	4
ENY 240 Estimating for Energy	4
Internship or elective*	4
General Education Courses:	
ENG 131 Technical Writing	3
MAT 107 Career Math	3
PHY 107 Energy, Science and Technology	4
PHI 118 Philosophy of the Environment	3

Choose three credits from the following areas:
ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, AST, BIO, CHE, GEY, PHY, ANT, ECO, GEO, HIS, POS, PSY, SOC, & CIS 118
Total Credits 60

*Seek advisor approval for elective courses in CON, BUS, ACT, CIS, ENY, MAR, MAN, COM, HVA, EIC, PLU

Solar PV Business Owner Specialty AAS

Required Courses	Credits
ENY 101 Intro to Energy	3
ENY 102 Building Energy Audit	3
OSH 127 10 hour OSHA	1
HVA 105 Basic Electricity	4
ENY 130 Solar PV Grid Tie	2
CON 105 Construction Tech	4
ENY 231 Contractors Class	4
ENY 240 Estimating	4
Advisor approved electives	16
Internship or elective	4

General Education Courses:

ENG 131 Technical Writing	3
MAT 107 Career Math	3
PHY 107 Physics	4
PHI 118 Philosophy of the Environment	3

Choose three credits from the following areas:

ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, AST, BIO, CHE, GEY, PHY, ANT, ECO, GEO, HIS, POS, PSY, SOC, & CIS 118

Total Credits 62

*Elective list for owner, a mix of advisor approved classes within CON, BUS, MAR, ACT, MAN, COM, CIS, PSY

Solar Thermal Specialty AAS

Required Courses	Credits
ENY 101 Intro to Energy	3
ENY 102 Building Energy Audit	3
OSH 127 10 hour OSHA	1
HVA 105 Basic Electricity	4
CAR 123 Framing	1
CAR 125 Roofing materials	1
ENY 120 Solar Thermal Install	4
ENY 175 SpTp: Thermal Install II Controls	4
CON 105 Construction Tech	4
PLU 101 Piping skills	4
ENY 132 NABCEP Thermal prep	1
ENY 231 Solar Contracting	4
ENY 240 Estimating for Energy	4
Internship or elective	8
General Education Courses:	
ENG 131 Technical Writing	3
MAT 107 Career Math	3
PHY 107 Physics	4
PHI 118 Philosophy of the Environment	3

Choose three credits from the following areas:

ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, AST, BIO, CHE, GEY, PHY, ANT, ECO, GEO, HIS, POS, PSY, SOC, & CIS 118

Total Credits 62

*Seek advisor approval for elective courses in CON, BUS, ACT, CIS, ENY, MAR, MAN, COM, HVA, EIC, PLU

Solar Thermal Business Owner Specialty AAS

Required Courses	Credits
ENY 101 Intro to Energy	3
ENY 102 Building Energy Audit	3
OSH 127 10 hour Construction Industry Standards	1
HVA 105 Basic Electricity	4
ENY 120 Thermal Install	4
CON 105 Construction Tech	4
ENY 231 Solar Contracting	4
ENY 240 Estimating for Energy	4
Advisor approved electives	15
Internship or elective	4
General Education Courses:	
ENG 131 Technical Writing	3
MAT 107 Career Math	3
PHY 107 Physics	4
PHI 118 Philosophy of the Environment	3

Choose three credits from the following areas:

ART, FRE, GER, HUM, LIT, MUS, PHI, SPA, AST, BIO, CHE, GEY, PHY, ANT, ECO, GEO, HIS, POS, PSY, SOC, & CIS 118

Total Credits **62**

*Elective list for owner, a mix of advisor approved classes within CON, BUS, ACT, MAR, MAN, COM, CIS, PSY

Certificate**Grid Tie Entry Level**

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
EIC 110 Electrical Installations I	4
CAR 123 Roof Framing	1
CAR 125 Roofing Materials and Methods	1
ENY 130 Solar Photovoltaics Grid Tie	2
EIC 130 National Electrical Code I	4
Total Credits	20

Certificate**Advanced PV Installation**

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
EIC 110 Electrical Installations I	4
CAR 123 Roof Framing	1
CAR 125 Roofing Materials and Methods	1
ENY 130 Solar Photovoltaics Grid Tie	2
EIC 130 National Electrical Code I	4
ENY 131 Advanced Solar PV	2
ENY 132 NABCEP Entry Level Prep Class	1
ENY 230 PV Maintenance and Troubleshooting	2
ENY 231 Solar Contracting	4
Total credits	29

Certificate**Solar PV Designer**

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
ENY 102 Building Energy Audit Tech	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
ENY 130 Solar Photovoltaics Grid Tie	2
CON 105 Construction Tech	4
ENY 131 Advanced Solar PV	2
ENY 231 Solar Contracting	4
ENY 240 Estimating	4
ENG 131 Technical Writing	3
Total Credits	30

Certificate**Solar Thermal Entry Level**

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
CAR 123 Roof Framing	1
CAR 125 Roofing Materials and Methods	1
ENY 120 Solar Thermal System Install I	4
PLU 101 Piping skills	4
Total credits	18

Certificate**Solar Thermal Installer**

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
CAR 123 Roof Framing	1
CAR 125 Roofing Materials and Methods	1
ENY 120 Solar Thermal System Install I	4
ENY 175 SP TP: Thermal Install II Controls	4
PLU 101 Piping skills	4
ENY 231 Solar Contracting	4
Total Credits	26

Certificate**Solar Thermal Designer**

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
ENY 102 Building Energy Audit Tech	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
ENY 120 Solar Thermal System Install I	4
CON 105 Construction Tech	4
ENY 231 Solar Contracting	4
ENY 240 Estimating	4
ENG 131 Technical Writing	3
Total Credits	30

Certificate**Post EIC Degree Solar Photovoltaic**

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
CAR 123 Roof Framing	1
CAR 125 Roofing Materials and Methods	1
ENY 130 Solar Photovoltaics Grid-tie	2
ENY 131 Advanced Solar PV	2
ENY 230 PV Maintenance & Troubleshoot	2
ENY 280 Internship or Advisor Approved Electives	4
Total Credits	20

Certificate

Post HVA Degree Solar Thermal

Required Courses	Credits
ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
HVA 105 Electricity for HVAC/R	4
CAR 123 Roof Framing	1
CAR 125 Roofing Materials and Methods	1
ENY 120 Solar Thermal System Install I	4
ENY 175 SP TP: Thermal Install II Controls	4
ENY 280 Internship or Advisor Approved Electives	4
Total Credits	22

Certificate

Energy Auditing

ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
ENY 102 Building Energy Audit Tech	3
ENY 275 SP TP: Energy Auditing Field Course	3
ENY 176 SP TP: Commercial Building Energy Audit	4
ENY 280 Internship	3
Advisor Approved Electives*	6
Total Credits	23

*Seek advisor approval for elective courses in SOC, PSY, PHI, AEC

Students completing ENY 102 and ENY 275 will have the option to sit for the BPI Building Analyst exam. Please note exam costs are in addition to course tuition and fees.

Certificate

Energy Efficiency Weatherization

ENY 101 Intro to Energy Technologies	3
OSH 127 10 Hour Construction Industry Standards	1
ENY 175 SP TP: Green Advantage Technologies	3
CAR 130 Windows and Exterior Doors	1
CAR 135 Thermal/Moisture Methods/Mat	1
CAR 102 Hand and Power Tools	1
CAR xxx EPA Certified Lead Renovator/Dust Sampling	1
Total Credits	11

Sociology

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 Sociology.

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

Degree: Associate of Arts

Required Courses	Credits
SOC 101 Introduction to Sociology I *	3
SOC 102 Introduction to Sociology II *	3
Choose one from the following advanced classes	3
SOC 205 Sociology of Family Dynamics	
SOC 215 Contemporary Social Problems	
SOC 218 Sociology of Diversity	
SOC 237 Sociology of Death and Dying	3
Additional General Education Courses	32
Approved Electives	19
Total Credits	60

*Fulfills General Education requirements.

Speech and Communication

(See Communication)

Sonography

Degrees: Associate of Applied Science

Diagnostic Medical Sonography
Vascular Technology
Diagnostic Cardiac Sonography

Certificates:

Diagnostic Medical Sonography
Vascular Technology
Diagnostic Cardiac Sonography

The Sonography program prepares you for entry-level positions in the field with specialization in general sonography, vascular technology, or cardiac sonography. Upon completion of the program, you will be eligible to take the American Registry for Diagnostic Medical

Sonography (ARDMS) certifying examination. You may choose between the associate of applied science degree option or the certificate of completion option. You must earn a C or better in all DMS courses to graduate.

**Additional fees apply for DMS 280.

Information: 303.914.6034

AAS Degree

Diagnostic Medical Sonography

www.rrcc.edu/dms

Prerequisite course:	Credits
RTE 255 Multiplanar Sectional Imaging or equivalent	2
Required Courses	Credits
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 244 Ultrasound Scan Lab	6
DMS 280 Ultrasound Clinical Observation	2.5
DMS 281 Clinical Internship I	8
DMS 282 Clinical Internship II	10
DMS 283 Clinical Internship III	10
DMS 289 Ultrasound Capstone	3
DMS Elective Courses	4
General Education Requirements	15
Total Credits	74.5

AAS Degree

Vascular Technology

Required Courses	Credits
DMS 203 Cerebrovascular Sonography	2
DMS 204 Venous Sonography	2
DMS 241 Ultrasound Physics I	2
DMS 242 Ultrasound Physics II	2
DMS 244 Ultrasound Scan Lab	6
DMS 251 Vascular Anatomy and Physiology	2
DMS 252 Abdominal Vascular Sonography	2
DMS 261 Introduction to Vascular Testing	2
DMS 262 Arterial Sonography	2
DMS 280 Ultrasound Clinical Observation	2.5
DMS 281 Clinical Internship I	8
DMS 282 Clinical Internship II	10
DMS 283 Clinical Internship III	10
DMS 289 Ultrasound Capstone	3
DMS Elective Courses	4
General Education Requirements	15
Total Credits	74.5

AAS Degree

Diagnostic Cardiac Sonography

Required Courses	Credits
DMS 255 Adult Echocardiography I	2
DMS 256 Adult Echocardiography II	2
DMS 265 Echocardiographic Pathology I	2
DMS 266 Echocardiographic Pathology II	2
DMS 235 Pediatric Echocardiography	2
DMS 206 Vascular Sonography	2
DMS 241 Ultrasound Physics I	2
DMS 242 Ultrasound Physics II	2
DMS 244 Ultrasound Scan Lab	6
DMS 280 Ultrasound Clinical Observation	2.5
DMS 281 Clinical Internship I	8
DMS 282 Clinical Internship II	10
DMS 283 Clinical Internship III	10
DMS 289 Ultrasound Capstone	3
DMS Elective Courses	4
General Education Requirements	15
Total Credits	74.5

Certificate

Diagnostic Medical Sonography

Prerequisite Course	Credits
RTE 255 Multiplanar Sectional Imaging or equivalent	2
Required Courses	Credits
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 244 Ultrasound Scan Lab	6
DMS 280 Ultrasound Clinical Observation	2.5
DMS 281 Clinical Internship I	8
DMS 282 Clinical Internship II	10
DMS 283 Clinical Internship III	10
DMS 289 Ultrasound Capstone	3
DMS Elective Courses	4
Total Credits	59.5

Certificate

Vascular Technology

Required Courses

	Credits
DMS 203 Cerebrovascular Sonography	2
DMS 204 Venous Sonography	2
DMS 241 Ultrasound Physics I	2
DMS 242 Ultrasound Physics II	2
DMS 244 Ultrasound Scan Lab	6
DMS 251 Vascular Anatomy and Physiology	2
DMS 252 Abdominal Vascular Sonography	2
DMS 261 Introduction to Vascular Testing	2
DMS 262 Arterial Sonography	2
DMS 280 Ultrasound Clinical Observation	2.5
DMS 281 Clinical Internship I	8
DMS 282 Clinical Internship II	10
DMS 283 Clinical Internship III	10
DMS 289 Ultrasound Capstone	3
DMS Elective Courses	4
Total Credits	59.5

Certificate

Diagnostic Cardiac Sonography

Required Courses

DMS 255 Adult Echocardiography I	2
DMS 256 Adult Echocardiography II	2
DMS 265 Echocardiographic Pathology I	2
DMS 266 Echocardiographic Pathology II	2
DMS 235 Pediatric Echocardiography	2
DMS 206 Vascular Sonography	2
DMS 241 Ultrasound Physics I	2
DMS 242 Ultrasound Physics II	2
DMS 244 Ultrasound Scan Lab	6
DMS 280 Ultrasound Clinical Observation	2.5
DMS 281 Clinical Internship I	8
DMS 282 Clinical Internship II	10
DMS 283 Clinical Internship III	10
DMS 289 Ultrasound Capstone	3
DMS Elective Courses	4
Total Credits	59.5

Teacher Education

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

Degrees: Associate of Arts

Elementary Education

Secondary Education

Degree: Associate of Applied Science

Paraeducator

Certificates:

Paraeducator

Adult Education and Family Literacy (RRCC)

AA Degree

Elementary Education

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.

General Education Courses

Credits

Communication

ENG 121 English Composition I (B or better)	3
ENG 122 English Composition II (B or better)	3

Humanities

LIT 115, LIT 201, or LIT 202	3
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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

Statewide Education Requirements:

COM 115	Public Speaking	3
PSY 238	Child Development	3
EDU 221	Introduction to Teacher Education	3
EDU 288	Practicum	1

Transfer Institution Approved Credits 19
(Meet with the teacher education faculty advisor for a list of approved credits for each institution.)

Total Credits 61

AA Degree

Secondary Education

If you plan to transfer to a four-year college or university to complete a secondary education certification program, meet with the RRCC Teacher Education faculty advisor to design a course of study. Electives will include RRCC education courses and courses in your area of emphasis.

AAS Degree

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:

- successfully complete 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 AAS degree prepares you to work as a paraeducator in the K-12 classroom.

Required Courses	Credits	
EDU 110	Overview of Special Populations	3
EDU 151	Literacy Interventions for Paras	4
EDU 152	Math Interventions for Paras	3
EDU 153	ESL and Cultural Issues	3
EDU 261	Teaching, Learning and Technology	3
EDU 221	Introduction to Teacher Education	3
EDU 288	Practicum	1
PSY 238	Child Development	3
COM 115	Public Speaking	3

Faculty advisor-approved electives 19

General Education Requirements 15

Select the general education core requirements and electives from the general education courses in the AA in elementary education.

Total Credits 60

Certificate

Paraeducator

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

Select 11 credits from the following recommended

courses: (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 288	Practicum	1
PSY 238	Child Psychology	3
EDU 240	Teaching the Exceptional Learner	3
EDU 234	Multicultural Education	3

Total Required Credits 21

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. Literacy Instruction Authorization (LIA) 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	Credits	
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

Total Credits 15

Theatre Arts

Degrees: Associate of Arts

Emphasis in Theatre Arts

Emphasis in Musical Theatre

Degree: Associate of Applied Science

Theatre Technology

Certificates:

Costume Basics

Costume and Fashion

Stagehand Basics

Stagecraft

AA Degree

Emphasis in Theatre Arts

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

Recommended Courses	Credits
THE 105 Theatre Appreciation	3
THE 111 Acting I	3
or	
THE 118 Acting Skills for Trades/Business	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

In addition to the above, include General Education transfer requirements for A.A. degrees at Red Rocks Community College.

Total Required Credits 60

AA Degree

Emphasis in Musical Theatre

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

Recommended Courses	Credits
THE 105 Theatre Appreciation	3
THE 111 Acting I	3
THE 115 Stage Movement for Actors	3
THE 275 Special Topics: Voice Practicum	3
THE 135 Stage Makeup I	2
THE 136 Stage Makeup II	2
THE 210 Singing for Actors	3
DAN 3 credits of dance classes	

or

THE 275 Musical Theatre Performance

In addition to the above, include General Education transfer requirements for A.A. degrees at Red Rocks Community College.

Total Required Credits 60

AAS Degree

Theatre Technology

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 Program Chair 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 Theatre Appreciation	3
THE 116 Technical Theatre	3
THE 109 Basics of Pattern Drafting	3
Or	
THE 200 Paint, Draw, Render, Modeling Techniques	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)	1-6

choose one from the following:

THE 131	Theatre Production I	3
THE 132	Theatre Production II	3
THE 231	Theatre Production III	3
THE 232	Theatre Production IV	3

General Education Requirements*: 15

*A.A.S. in Theatre Technology requires THE 118: Acting Skills: Trades/Business in place of COM 115 or COM 125.

Total Credits 60

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 stitchers, wardrobe assistants, and costume shop assistants. You should consult with the Program Chair of Theatre Arts and Dance early in your college career to explore all of your educational options. You must earn a C or better in all theatre courses to graduate.

This certificate is intended for a one semester course of study.

Required Courses	Credits
THE 105 Theatre Appreciation	3
THE 104 Basic Costume and Apparel Construction	3
THE 109 Basics of Pattern Drafting	3
THE 135 Stage Makeup I	2
THE 275 SpT: Advanced Sewing Techniques	3
THE 211 Development of Theatre I	3
Total Credits	17

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 stitchers, wardrobe assistants, costume shop assistants, working in alterations and tailoring, makeup artists, window dressers, and other fashion and entertainment-related employment opportunities. This certificate also prepares you for pursuing an advanced degree in costume design and the fashion industry. You should consult with the Program Chair of Theatre Arts and Dance early in your college career to explore all of your educational options. You must earn a C or better in all theatre courses to graduate. This certificate is intended for a one year course of study, divided into two semesters.

Required Courses	Credits
THE 105 Theatre Appreciation	3
THE 104 Basic Costume and Apparel Construction	3
THE 109 Basics of Pattern Drafting	3
THE 135 Stage Makeup I	2
THE 136 Stage Makeup II	2
THE 200 Paint, Draw, Render, Modeling Techniques	3
THE 275 SpT: Advanced Sewing Techniques	3
THE 211 Development of Theatre I	3
THE 212 Development of Theatre II	3
THE 245 Basic Costume Design and Construction	3
THE 260 Employment Skills for Technical Theatre	1
Total Credits	29

Certificate

Stagehand Basics

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

Required Courses	Credits
THE 105 Theatre Appreciation	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
Total Credits	14

Certificate

Stagecraft

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

This certificate is intended for a one year course of study, divided in two semesters.

Required Courses		Credits
THE 105	Theatre Appreciation	3
THE 104	Basic Costume and Apparel Construction	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 120	Drafting for the Performing Arts	3
	or	
THE 200	Paint, Draw, Render, Modeling Techniques	3
THE 151	Stagecraft I	3
THE 212	Development of Theatre II	3
THE 225	Sound Operation and Design Basics	2
THE 241	Stage Properties	3
Total Credits		30

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	3
	or	
THE 109	Basics of Pattern Drafting	3
THE 135	Stage Makeup I	2
THE 136	Stage Makeup II	2
THE 151	Stagecraft I	3

THE 152	Production Stage Management I	3
THE 216	Theatre Lighting and Design	3
	or	
THE 245	Basic Costume Design and Construction	3
THE 211	Development of Theatre I	3
THE 212	Development of Theatre II	3
THE 221	Set Design	3
	or	
THE 237	History of Costumes and Fashion	3
THE 241	Stage Properties	3
THE 225	Sound Operation and Design	2
THE 260	Employment Skills for Technical Theatre	1
THE 280	Theatre Technology Internship - (Field Education)	1-6
THE 118	Acting Skills: Trades/Business	3
(THE 118 is required in place of COM 125 under General Education Requirements.)		

Choose one from the following:

THE 131	Theatre Production I	3
THE 132	Theatre Production II	3
THE 231	Theatre Production III	3
THE 232	Theatre Production IV	3

General Education Requirements:

Total Credits 60

Water Quality Management Technology

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: Mike Smith 303.914.6325

www.rccc.edu/wqm/

Degree: Associate of Applied Science

Water Quality Management

Certificates:

Introduction to Water Treatment

Introduction to Wastewater Treatment Laboratory Analysis

**Mathematics in Water Quality
Education and Experience
Distribution and Collection Systems
Advanced Water Treatment Certification
Advanced Wastewater Treatment
Certification**

AAS Degree

Water Quality Management

Required Courses	Credits
WQM 100 Introduction to Water Quality Management	3
WQM 105 Specific Calculations for Water Quality Management	4
WQM 119 Basic Water Quality Analysis	4
WQM 120 Water Quality Equipment Maintenance	4
WQM 126 Safety and Security Systems in the Water Quality Industry	3
WQM 200 Hydraulics for Water Quality Management	4
WQM 206 Design Interpretation of Water Quality Systems	4
WQM 216 Biological and Bacteriological Water Quality Analysis	4
WQM 217 Disinfection Techniques in Water Quality Systems	4
General Education Requirements	12
Faculty advisor-approved WQM electives	12
Required Electives	
CIS 118 Introduction to PC Applications	3
GIS 101 Introduction To Geographic Information Systems	3
Total Credits	64

Water Quality Certificates:

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

Certificate

Introduction to Water Treatment

Required Courses	Credits
WQM 100 Introduction to Water Quality Management	3
WQM 160 Managing the Global Water Supply	3
Total Credits	6

Certificate

Introduction to Wastewater Treatment

Required Courses	Credits
WQM 100 Introduction to Water Quality Management	3
WQM 123 Water Reuse Systems	3
Total Credits	6

Certificate

Laboratory Analysis

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

Certificate

Mathematics in Water Quality

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

Certificate

Education and Experience

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

Certificate

Distribution and Collection Systems

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

Certificate

Advanced Water Treatment Certification

Required Courses	Credits
WQM 124 Water Treatment Review for C and D	3
WQM 224 Water Treatment Review for A and B	3
Total Credits	6

Certificate

Advanced Wastewater Treatment Certification

Required Courses	Credits
WQM 125 C and D Review for Wastewater Treatment	3
WQM 225 A and B Review for Wastewater Treatment	3
Total Credits	6

Welding

(In cooperation with and taught at Warren Tech)

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 101 Computer Aided Drafting I	3
General Education Requirements	
ENG 131 Technical Writing	3
MAT 107 Career Math (or higher)	3
COM 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, COM, SPA, THE)	
Science (AST, BIO, CHE, GEY, PHY)	
Social Science (ANT, ECO, HIS, POS, PSY, SOC)	
Total Credits	64

Welding Certificates

For the following certificates, you must complete WEL 100 Safety for Welders as a prerequisite course.

Certificate

Ox-fuel Welding and Cutting (OFW and OFC)

Required Courses	Credits
WEL 100 Safety for Welders	1
WEL 101 Allied Cutting Process	4
WEL 102 Oxyacetylene Joining Processes	4
Total Credits	9

Certificate

Shield Metal Arc Welding (SMAW)

Required Courses	Credits
WEL 103 Basic Shielded Metal Arc Welding I	4
WEL 110 Advanced Shielded Metal Arc Welding I	4
Total Credits	8

Certificate

Gas Metal Arc Welding (GMAW)

Required Courses	Credits
WEL 201 Gas Metal Arc Welding I	4
WEL 202 Gas Metal Arc Welding II	4
Total Credits	8

Certificate

Flux Core Arc Welding (FCAW)

Required Courses	Credits
WEL 203 Flux Cored Arc Welding I	4
WEL 204 Flux Cored Arc Welding II	4
Total Credits	8

Certificate

Gas Tungsten Arc Welding (GTAW)

Required Courses	Credits
WEL 124 Intro. to Gas Tungsten Arc Welding	4
WEL 224 Advanced Gas Tungsten Arc Welding	4
Total Credits	8

Wind Energy Technology

The Wind Energy Technology Program will prepare students for entry level employment as wind energy equipment technicians, often referred to as Wind Smiths. A wind energy technician is a key member of a team of people responsible for the operation and maintenance of electrical energy generation equipment and control systems for wind turbine generation systems. Individuals interested in the Wind Energy Technology program must be prepared for working in confined spaces and at heights greater than 100 feet. The individuals should be capable of lifting and carrying loads of 75 lbs plus. Individuals will be required to make a vertical climb of 300 feet with only two rest stops. The work will often be in extreme weather conditions at remote locations for extended periods. The Wind Energy Technology program is focused on the maintenance and repair of commercial wind turbines; gear boxes, generators, digital controllers, and other industrial maintenance skills.

The industries interested in the graduates from the program include, but are not limited to Wind Energy Farm owners and operators and firms that specialize in the maintenance and overhaul of wind powered generation equipment.

Information:
Chuck Beck 303.914.6063, chuck.beck@rrcc.edu or
Larry Snyder 303 914 6306, larry.snyder@rrcc.edu
www.rrcc.edu/wind

Degree: Associate of Applied Science

Wind Energy Technology

Certificates:

- Introduction to Wind Energy Technology
- Wind Energy Safety
- Wind Energy Basic Electro-Mechanical
- Wind Energy Advanced Electrical
- Wind Energy Advanced Mechanical

AAS Degree

Wind Energy Technology

Required Courses	Credits
ENY 175 Introduction to Wind Energy Technology	3
IMA 100 Introduction to Industrial Maintenance	3
EIC 124 Electrical Safety Requirements	1
OSH 175 Personal Safety for the Energy Industry	3
HVA 105 Electricity for HVAC/R	4
ENT 106 Print Reading	3

IMA 120 Pumps, Seals and Rotating Equipment	3
IMA 250 Industrial Machine Lubrication	3
MIL 107 Installing Belts Chains and Bearings	4
ENT 238 Fluid Power and Controls	3
EIC 160 Electrical Instruments and Measurement	4
EIC 220 Industrial Electrical Controls I	4

Total Credits 38

Required General Education Courses Credits

CIS 118 Introduction to PC Applications	3
BUS 118 Business Survival Skills	3
ENG 121 English Composition I	3
MAT 107 Career Math	3
PHY 107 Energy Science and Technology	4
SOC 101 Introduction to Sociology	3

OR

PSY 101 General Psychology I 3

Electives from HVA, and/or IMA prefixes 3

Total General Education and Electives Courses 22

Total Degree Credits 60

Certificate

Introduction to Wind Energy Technology

Required Courses Credits

ENY 175 Introduction to Wind Energy Technology	3
IMA 100 Introduction to Industrial Maintenance	3
EIC 124 Electrical Safety Requirements	1
HVA 105 Electricity for HVAC/R	4
OSH 175 Personal Safety for the Energy Industry	3

Total Credits: 14

Certificate

Wind Energy Safety

Required Courses Credits

EIC 124 Electrical Safety Requirements	1
OSH 175 Personal Safety for the Energy Industry	3

Total Credits 4

Certificate

Wind Energy Basic Electro-Mechanical

Required Courses Credits

ENT 106 Print Reading	3
IMA 250 Industrial Machine Lubrication	3
MIL 107 Installing Belts, Chain Drives and Bearings	4
IMA 120 Pumps, Seals and Rotating Equipment	3
ENT 238 Fluid Power and Controls	3
EIC 160 Electrical Instruments and Measurement	4
EIC 220 Industrial Electrical Controls I	4

Total Credits 24

Certificate

Wind Energy Advanced Electrical

PPT	215	Power Generation Technology	3
IMA	150	Industrial Problem Solving Methods	2
EIC	230	Industrial Instrumentation and Controls	4
EIC	225	Programmable Controllers	4
Total credits			13

Certificate

Wind Energy Advanced Mechanical

Required Courses			Credits
IMA	150	Industrial Problem Solving Methodss	2
MAC	105	Intro to Machining Technology	3
WEL	131	Intro to Industrial Welding	4
IMA	210	Vibration Analysis	3
Total Credits			12

Woodworking

(See Fine Woodworking)

COURSE DESCRIPTIONS

Here you will 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. (A course numbered XXX means that the course is pending approval by the RRCC Curriculum Committee and CCCS.)



(A course numbered XXX means that the course is pending approval by the RRCC Curriculum Committee and CCCS.)

AAA – Academic Achievement

AAA 050 SEMESTER SURVIVAL 2 CREDITS

Emphasizes basic study skills in order to bolster your chances of completing the current semester successfully.

AAA 101 THE STUDENT EXPERIENCE 1 CREDIT

Introduces you to college culture and prepares you for the challenges you will face in higher education. Through a series of interactive seminars, you will discover learning in a multicultural environment and use college and community resources to attain educational and career goals.

ACC – Accounting

WWW.RRCC.EDU/BUSINESS

ACC 101 FUNDAMENTALS OF ACCOUNTING 3 CREDITS

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.

To apply toward graduation, this course must be taken prior to successfully competing ACC 121.

ACC 116 COMPUTERIZED BILLING 3 CREDITS

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

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.

Prerequisites: Accuplacer scores of 80 or better for reading and 45 or better for elementary algebra or equivalent SAT scores ACT scores or equivalent course work.

ACC 122 ACCOUNTING PRINCIPLES II 4 CREDITS

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.

Prerequisite: ACC 121 or equivalent.

ACC 123 ACCOUNTING PRINCIPLES I RECITATION 1 CREDIT

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.
Corequisite: ACC 121.

ACC 124 ACCOUNTING PRINCIPLES II RECITATION 1 CREDIT

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.
Corequisite: ACC 122.

ACC 131 INCOME TAX 3 CREDITS

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.
Prerequisite: ACC 121 strongly recommended.

ACC 135 SPREADSHEET APPLICATIONS FOR ACCOUNTING 3 CREDITS

Introduces spreadsheets as an accounting tool. Using an accounting perspective, you will apply fundamental spreadsheet concepts. The spreadsheets are used as a problem solving and decision making tool.
Prerequisite: ACC 121.

ACC 138 PAYROLL AND SALES TAX 3 CREDITS

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.
Corequisite or prerequisite: ACC 101, ACC 121 or equivalent knowledge.

**ACC 211 INTERMEDIATE ACCOUNTING I
4 CREDITS**

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.

Prerequisite: ACC 122.

**ACC 212 INTERMEDIATE ACCOUNTING II
4 CREDITS**

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.

Prerequisite: ACC 211.

**ACC 216 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING
3 CREDITS**

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.

Prerequisite: ACC 122.

**ACC 226 COST ACCOUNTING
3 CREDITS**

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.

Prerequisite: ACC 122.

**ACC 227 COST ACCOUNTING II
3 CREDITS**

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.

Prerequisite: ACC 226.

**ACC 245 COMPUTERIZED ACCOUNTING WITH A PROFESSIONAL PACKAGE
3 CREDITS**

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.

Prerequisite: ACC 121 or ACC 101

**ACC 275 SPECIAL TOPICS IN ACCOUNTING
1-3 CREDITS**

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

**ACC 280 INTERNSHIP
1-3 CREDITS**

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.

Prerequisite: Permission of instructor.

**ACC 285 INDEPENDENT STUDY
1-3 CREDITS**

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

ACT – Automotive Collision Technology

WWW.RRCC.EDU/AUTOTECH

**ACT 101 INTRODUCTION TO AUTOMOTIVE COLLISION TECHNOLOGY
4 CREDITS**

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. of parts. Safety procedures and equipment use are included.

**ACT 110 SAFETY IN COLLISION REPAIR
2 CREDITS**

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

ACT 111 METAL WELDING AND CUTTING I
3 CREDITS

Covers sheet metal oxygen-acetylene welding and MIG welding techniques including safety, materials, equipment and setups. Personal and vehicle protective measures prior to welding procedures is presented.

ACT 121 NON-STRUCTURAL REPAIR PREPARATION
3 CREDITS

Covers the basic characteristics of preparation for automotive repair. Students familiarize themselves with damage analysis, extent of damage and the sequence of repair. 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

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.

Prerequisite: ACT 101, ACT 110, or Faculty Consent

ACT 123 METAL FINISHING AND BODY FILLING
3 CREDITS

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.

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

ACT 124 EXTERIOR PANEL REPLACEMENT (WELD-ON)
3 CREDITS

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.

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

ACT 131 STRUCTURAL DAMAGE DIAGNOSIS
3 CREDITS

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.

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

ACT 132 STRUCTURAL DAMAGE REPAIR
3 CREDITS

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.

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

ACT 141 REFINISHING SAFETY
1 CREDIT

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.

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

ACT 142 SURFACE PREPARATION I
2 CREDITS

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.

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

ACT 143 SPRAY EQUIPMENT OPERATION
2 CREDITS

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.

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

ACT 144 REFINISHING I
2 CREDITS

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.

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

ACT 151 PLASTICS AND ADHESIVES I 1 CREDIT

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.

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

ACT 170 AUTOMOTIVE COLLISION TECHNOLOGY LAB EXPERIENCES I 1-9 CREDITS

Designed to prepare you to perform basic tasks for a specialized area in a controlled instructional lab.

Prerequisite: Completion of all courses in ACT specialization area.

ACT 171 AUTOMOTIVE COLLISION TECHNOLOGY LAB EXPERIENCES II 1-9 CREDITS

Continuation of lab experience designed to prepare the individual to perform basic tasks for a specialized area in a controlled instructional lab.

Prerequisite: Completion of all courses in ACT specialization area.

ACT 172 AUTOMOTIVE COLLISION TECHNOLOGY LAB EXPERIENCES III 1-9 CREDITS

A continuation of Lab experience designed to prepare the individual to perform basic tasks for a specialized area in a controlled instructional lab.

Prerequisite: Completion of all courses in ACT specialization area.

ACT 175 SPECIAL TOPICS 0.5-9 CREDITS

Assists those 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

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.

Prerequisite: Completion of coursework in specialized area.

ACT 181 AUTOMOTIVE COLLISION REPAIR LEVEL II INTERNSHIP 1-9 CREDITS

A continuation of Level I Internship. Student uses the knowledge and skills acquired throughout the ACT program in a job site placement.

ACT 205 ESTIMATING AND SHOP MANAGEMENT 3 CREDITS

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.

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

ACT 211 METAL WELDING AND CUTTING II 2 CREDITS

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.

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

Corequisite: ACT 111, 124.

ACT 220 STRUCTURAL REPAIR II 4 CREDITS

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.

Prerequisite: ACT 101, ACT 110, and all other lower level Structural Repair courses or Faculty Consent.

ACT 226 PRODUCTION 4 CREDITS

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.

Prerequisite: ACT 101, ACT 110, ACT 205, or Faculty Consent.

ACT 231 ADVANCED STRUCTURAL DAMAGE DIAGNOSIS AND REPAIR 3 CREDITS

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.

Prerequisite: ACT 101, ACT 110, and all other lower level Structural Repair courses or Faculty Consent

ACT 232 FIXED GLASS REPAIR 2 CREDITS

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.

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

ACT 241 PAINT DEFECTS 3 CREDITS

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.

Prerequisites: ACT 101, ACT 110, and all other lower level Refinishing courses or Faculty Consent.

ACT 242 SURFACE PREPARATION II 2 CREDITS

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.

Prerequisite: ACT 101, ACT 110, and all other lower level Refinishing courses or Faculty Consent

ACT 243 REFINISHING II 2 CREDITS

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.

Prerequisite: ACT 101, ACT 110, and all other lower level Refinishing courses or Faculty Consent.

ACT 244 FINAL DETAIL 2 CREDITS

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.

Prerequisites: ACT 101, ACT 110, or Faculty Consent.

ACT 251 PLASTICS AND ADHESIVES II 1 CREDIT

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 Molding Compound procedures and the use of proper adhesives are covered.

Prerequisites: ACT 101, ACT 110, ACT 151, or Faculty Consent.

ACT 266 RESTRAINT SYSTEMS 1 CREDIT

Students 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.

AEC – Architecture, Engineering and Construction

AEC 121 CONSTRUCTION MATERIALS AND SYSTEMS 3 CREDITS

Examines building materials and construction techniques. Topics include a study of soils, concrete, brick, masonry, steel, timber, and plastics and a study of types of building structural systems and components. Principles of interpreting light commercial construction drawings (blueprints) for structural and trade information are also introduced.

AEC 218 SUSTAINABLE BUILDING SYSTEMS 3 CREDITS

Investigates the technologies and strategies related to sustainable (green) materials and systems for buildings. Topics include: energy and environmental consciousness/regulations; the high performance building envelope; alternative construction techniques (adobe, cob, rammed earth, straw bale); microclimate/site factors; sustainable/green materials; and passive solar; active thermal solar, photovoltaic energy, wind energy conversion, on site water use/reuse and waste disposal systems.

AEC 275 SPECIAL TOPICS 1-6 CREDITS

Provides students with a vehicle to pursue in depth exploration of special topics of interest.

ANT – Anthropology

**WWW.RRCC.EDU/
ANTHROPOLOGY**

ANT 101 CULTURAL ANTHROPOLOGY 3 CREDITS

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

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 107 is generally offered in the late spring.

ANT 111 PHYSICAL ANTHROPOLOGY 3 CREDITS

Studies human biology and its effects on behavior. It includes principles of genetics and evolution, vertebrates and primates, human origins, human variation, and ecology.

ANT 215 INDIANS OF NORTH AMERICA 3 CREDITS

Studies the Indians of North America from the origins of native peoples in the New World, through the development of geographic culture areas, to European contact and subsequent contemporary Native American issues.

ANT 215 is generally offered in the fall.

ANT 221 EXPLORING OTHER CULTURES I 3 CREDITS

Provides an anthropological understanding of a selected culture. Areas of study include the culture's language, processes of enculturation, subsistence patterns and economics, kinship and descent, political organization, religion, art, history, and its reactions to the forces of globalization.

ANT 250 MEDICAL ANTHROPOLOGY 3 CREDITS

Studies the basic principles of medical anthropology, an applied field within the discipline of cultural anthropology. It includes the cross-cultural study of practices and beliefs regarding illness, health, death, prevention and therapy; and the interaction of the medical systems between Western and other cultures.

ARA – Arabic

WWW.RRCC.EDU/LANGUAGES

ARA 101 CONVERSATIONAL ARABIC I 3 CREDITS

Introduces beginning students to conversational Arabic and focuses on understanding and speaking Arabic. Covers basic vocabulary, grammar, and expressions that are used in daily situations and in travel.

ARA 102 CONVERSATIONAL ARABIC II 3 CREDITS

Continues the sequence for students who wish to understand and speak Arabic. Covers basic conversational patterns, expressions, and grammar.

ARM – Military Science (U.S. Army ROTC)

ARM 111 ADVENTURES IN LEADERSHIP I 2 CREDITS FALL SEMESTER

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. (Lab Fee).

ARM 112 ADVENTURES IN LEADERSHIP II 2 CREDITS SPRING SEMESTER

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. (Lab Fee).

ARM 211 METHODS OF LEADERSHIP AND MANAGEMENT I 3 CREDITS FALL SEMESTER

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. (Lab Fee).

ARM 212 METHODS OF LEADERSHIP AND MANAGEMENT II

3 CREDITS

SPRING SEMESTER

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. (Lab Fee).

ART – Art

WWW.RRCC.EDU/ARTS

ART 110 ART APPRECIATION **3 CREDITS**

Introduces the cultural significance of the visual arts, including media, processes, techniques, traditions, and terminology.

ART 111 ART HISTORY ANCIENT TO MEDIEVAL **3 CREDITS**

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**

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**

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. You are required to have a basic knowledge of computers prior to taking this class. You should be able to upload and download files from the Internet, external devices, and flash drives; use the Internet for basic research; be able to send email and attachments; save information to CD/DVD, flash drive, and/or other external devices. Students without these skills are required to take MGD 101 Introduction to Computer Graphics either concurrently or prior to taking courses in digital photography.

Prerequisite: basic computer skills.

ART 121 DRAWING I **3 CREDITS**

Investigates the various approaches and media that you need in order to develop drawing skills and visual perception.

ART 122 DRAWING II **3 CREDITS**

Explores expressive drawing techniques with an emphasis on formal composition, color media, and content or thematic development.

Prerequisite: ART 121 or permission of instructor.

ART 123 WATERCOLOR I **3 CREDITS**

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.

Prerequisite: ART 121, ART 131, or permission of instructor.

ART 124 WATERCOLOR II **3 CREDITS**

Continues the study of watercolor techniques, emphasizing original compositions and experimentation with materials. Color theory is included.

Prerequisite: ART 123, or permission of instructor.

ART 131 2-D DESIGN **3 CREDITS**

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**

Focuses on learning to apply the elements and principles of design to three-dimensional problems.

ART 138 FILM PHOTOGRAPHY I **3 CREDITS**

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 141 JEWELRY AND METAL WORK I **3 CREDITS**

Introduces the construction of jewelry designs in metals and small casting techniques.

ART 142 JEWELRY AND METAL WORK II **3 CREDITS**

Emphasizes conceptual design development, using casting and specialized techniques.

Prerequisite: ART 141, or permission of instructor.

**ART 143 DIGITAL PHOTOGRAPHY I
3 CREDITS**

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. You are required to have a basic knowledge of computers prior to taking this class. You should be able to upload and download files from the Internet, external devices, and flash drives; use the Internet for basic research; be able to send email and attachments; save information to CD/DVD, flash drive, or other external devices. Students without these skills are required to take MGD 101 Introduction to Computer Graphics either concurrently or prior to taking courses in digital photography.
Recommended Prerequisite: basic computer skills or MGD 101.

**ART 146 STAINED GLASS I
3 CREDITS**

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**

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
Prerequisite: ART 146 or permission of instructor.

**ART 149 ANIMATION DRAWING/DESIGN
3 CREDITS**

Introduces the foundational skills necessary to create characters for use in computer based animation courses. Students learn to draw human and animal forms using pencil and paper. Character development, anatomy, dynamic movement and action, and scenery are emphasized.

**ART 154 SCULPTURE I
3 CREDITS**

Introduces the fundamentals of sculpture such as modeling, casting, carving, and the processes of assemblage.
Prerequisite: ART 131, ART 132, or permission of instructor.

**ART 155 SCULPTURE II
3 CREDITS**

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**

Introduces the basic techniques of drawing the human figure.

**ART 157 FIGURE PAINTING I
3 CREDITS**

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 158 FIGURE PHOTOGRAPHY I
3 CREDITS**

Introduces students to the social, artistic and photographic aspects of fine art figure studies in photography, as the human figure is one of the most studied and practiced subjects in the field of creative visual expression. Students have the opportunity to photograph the figure using professional lighting

equipment and professional models. Students are expected to push the limits of their artistic and creative abilities, as well as develop technical skills used in figure and other areas of fine art photography. Professional ethics, concerns, as well as group critiques are used throughout the course. Choice of camera, either digital or film, is left up to the student.

**ART 161 CERAMICS I
3 CREDITS**

Introduces traditional and contemporary ceramic forms and processes, including handbuilding and throwing on the potter's wheel.

**ART 162 CERAMICS II
3 CREDITS**

A continuation of ART 161. This course emphasizes skill, technique and form.
Prerequisite: ART 161.

**ART 175-177 SPECIAL TOPICS
1-6 CREDITS**

Covers 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).
Prerequisite: Permission of instructor.

**ART 207 ART HISTORY – 1900 TO PRESENT
3 CREDITS**

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**

Designed for advanced students interested in further exploring an art discipline to develop a more comprehensive portfolio.
Prerequisite: Permission of instructor.

**ART 211 PAINTING I
3 CREDITS**

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.

Prerequisite: ART 121, ART 131, or permission of instructor.

**ART 212 PAINTING II
3 CREDITS**

Further explores techniques, materials, and concepts used in opaque painting processes in oil or acrylic painting, with emphasis on composition and content development.

Prerequisite: ART 211 or permission of instructor.

**ART 213 PAINTING III
3 CREDITS**

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.

Prerequisite: ART 212 or permission of instructor.

**ART 214 PAINTING IV
3 CREDITS**

Explores advanced techniques, materials, and concepts used in opaque painting processes, with emphasis on the development of themes and a cohesive body of work.

Prerequisite: ART 213 or permission of instructor.

**ART 221 DRAWING III
3 CREDITS**

Offers a continued study of expressive drawing techniques and development of individual style, with an emphasis on composition and technique variation.

Prerequisite: ART 122 or permission of instructor.

**ART 222 DRAWING IV
3 CREDITS**

Explores advanced drawing problems with an emphasis on conceptual development and portfolio and/or exhibition quality presentation.

Prerequisite: ART 221 or permission of instructor.

**ART 223 WATERCOLOR III
3 CREDITS**

Concentrates on the advanced study of subject development, form, color, and theme in watercolor.

Prerequisite: ART 124 or permission of instructor.

**ART 224 WATERCOLOR IV
3 CREDITS**

Concentrates on the advanced study of techniques, individual style of expression, and consistency of compositional problem-solving in watercolor.

Prerequisite: ART 223 or permission of instructor.

**ART 225 PRINTMAKING I
3 CREDITS**

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.

Prerequisites: ART 121 and ART 131, or permission of instructor.

**ART 226 PRINTMAKING II
3 CREDITS**

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.

Prerequisite: ART 225 or permission of instructor.

**ART 231 ADVANCED 2D
DESIGN
3 CREDITS**

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.

Prerequisite: ART 131.

**ART 232 ADVANCED 3D
DESIGN
3 CREDITS**

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.

Prerequisite: ART 132.

**ART 238 FILM PHOTOGRAPHY II
3 CREDITS**

Explores in depth, in film camera and lab operations with an emphasis on individual creativity. It includes the development of a comprehensive portfolio.

Recommended Prerequisite: ART 138.

**ART 241 JEWELRY AND METAL
WORK III
3 CREDITS**

Focuses upon advanced work and emphasizes experimentation with materials and techniques, individual designs, and superior craftsmanship.

Prerequisite: ART 142 or permission of instructor.

**ART 242 JEWELRY AND
METAL WORK IV
3 CREDITS**

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.

Prerequisite: ART 241 or permission of instructor.

**ART 243 DIGITAL PHOTOGRAPHY II
3 CREDITS**

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. You are required to have basic computer skills or to have taken MGD 101 Intro to Computer Graphics.

Prerequisite: ART 143 Digital Photography I or permission of instructor and basic computer skills.

**ART 246 STAINED GLASS III
3 CREDITS**

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.

Prerequisite: ART 147.

**ART 247 STAINED GLASS IV
3 CREDITS**

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.

Prerequisite: ART 246.

**ART 248 DIGITAL DARKROOM:
ADOBE PHOTOSHOP
3 CREDITS**

ART 248 is essentially Photoshop for Photographers and teaches 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. You are required to have basic computer skills or to have taken MGD 101 Intro to Computer Graphics.

Recommended Prerequisites: ART 143 Digital Photography I and MGD 111 Photoshop I or permission of instructor and basic computer skills.

**ART 251 PORTRAIT PHOTOGRAPHY
3 CREDITS**

Teaches the technical and aesthetic aspects of studio and location portrait photography. This course explores the personal style of portraiture, the history of the field, and portraiture as a visual language and creative expression and also includes lighting, composition, posing, and equipment selection. Both film and/or digital SLR cameras with manual settings may be used for this class.

Recommended Prerequisites: ART 138 Photography I or ART 143 Digital Photography I.

**ART 252 LANDSCAPE PHOTOGRAPHY
2 CREDITS**

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 and 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.

Co-requisite: PHO 240 Field Techniques and Exploration (1 credit).

Recommended Prerequisites: ART 138 Photography I or ART143 Digital Photography I.

**ART 254 SCULPTING THE FIGURE
3 CREDITS**

Focuses on sculpting the human figure using modeling techniques in clay.

**ART 256 ADVANCED FIGURE DRAWING
3 CREDITS**

Provides continuing study of the various methods of drawing the human figure, with emphasis on the description of form and individual style.

Prerequisite: ART 156.

**ART 257 ADVANCED FIGURE PAINTING
3 CREDITS**

Offers continued study of painting the human figure with advanced problem-solving in composition and experimentation with materials and techniques.

Prerequisite: ART 157.

**ART 261 CERAMICS III
3 CREDITS**

Encourages you to develop an individual style of wheel-thrown and hand-built ceramic forms with continuing involvement in surface treatment.

Prerequisite: ART 162.

**ART 262 CERAMICS IV
3 CREDITS**

Continues advanced work with emphasis on various clay bodies, unique glazes and engobes, combining different textures and shapes, and development of personal forms.

Prerequisite: ART 261.

ART 264 MARKETING FOR THE VISUAL ARTIST
3 CREDITS

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.

Prerequisite: 12 credits of any combination of ART courses.

ART 268 SCULPTURE III
3 CREDITS

Focuses on advanced individual sculpture projects, emphasizing experimentation with materials, accomplished technique and conceptual significance.

Prerequisite: ART 155 or permission of instructor.

ART 275-277 SPECIAL TOPICS
1-6 CREDITS

Covers 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).

Prerequisite: Permission of instructor.

ART 280 INTERNSHIP
1-6 CREDITS

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.

Prerequisite: Permission of instructor.

ASE – Automotive Service Technology

WWW.RRCC.EDU/AUTOTECH

ASE 101 AUTO SHOP ORIENTATION
2 CREDITS

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

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

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 AUTO ELECTRICITY
2 CREDITS

Introduces automotive electricity and includes basic electrical theory, circuit designs, and wiring methods. Focuses on multi-meter usage and wiring diagrams.

ASE 123 BATTERY STARTING AND CHARGING
2 CREDITS

Covers the operation, testing, and servicing of automotive battery, starting, and charging systems. Includes voltage and amperage testing of starter and generator, load testing and maintenance of a battery, and starter and generator overhaul.

ASE 130 GENERAL ENGINE DIAGNOSIS
2 CREDITS

Focuses on lecture and related laboratory experiences in the diagnosis and necessary corrective actions of automotive engine performance factors.

ASE 132 IGNITION SYSTEM DIAGNOSIS AND REPAIR
2 CREDITS

Focuses on theory and related laboratory experiences in the diagnosis, service, adjustments and repair of various automotive ignition systems.

Prerequisite: ASE 130.

ASE 134 AUTOMOTIVE EMISSIONS
2 CREDITS

Focuses on theory and laboratory experiences in the diagnosis and repair of automotive emission control systems.

Prerequisite: ASE 132.

ASE 140 SUSPENSION AND STEERING I
3 CREDITS

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

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

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

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

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

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

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

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.

Prerequisite: ASE 110.

ASE 221 AUTOMOTIVE BODY ELECTRICAL
4 CREDITS

Provides a comprehensive study of the theory, operation, diagnosis, and repair of electrical/electronic vehicle accessories such as lights, wipers, horns.

Prerequisite: ASE 120.

ASE 231 AUTOMOTIVE COMPUTERS
2 CREDITS

Focuses on theory and laboratory experiences in the inspection and testing of typical computerized engine control systems.

Prerequisites: ASE 120, ASE 134, ASE 220.

ASE 233 FUEL INJECTION AND EXHAUST SYSTEMS
4 CREDITS

Focuses on theory and related laboratory experiences in the diagnosis and repair of electronic fuel injection systems and modern exhaust systems.

Prerequisites: ASE 120, ASE 134, ASE 231.

ASE 235 DRIVEABILITY DIAGNOSIS
1 CREDIT

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.

Prerequisite: ASE 233.

ASE 240 SUSPENSION AND STEERING II
3 CREDITS

Emphasizes theory and related experiences in the diagnosis and service of active suspensions and steering systems and wheel alignment.

Prerequisite: ASE 140.

ASE 250 AUTOMATIC TRANSMISSION/TRANSAXLE SERVICE
1 CREDIT

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

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.

Prerequisite: ASE 250.

ASE 265 AUTOMOTIVE HEATING AND AIR CONDITIONING
5 CREDITS

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

Focuses on practical on-the-job, work related experience that corresponds to the area of study.

Prerequisites: ASE 120, ASE 130.

ASE 281 INTERNSHIP: HEAVY DUTY AND POWER TRAIN
0.5-6 CREDIT

Focuses on practical on-the-job, work related experience that corresponds to the area of study.

Prerequisite: ASE 130.

**ASE 282 INTERNSHIP:
GENERAL (SUMMER)
0.5-6 CREDITS**

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.
Prerequisite: Permission of instructor.

**ASE 285 INDEPENDENT
STUDY
0.5-6 CREDITS**

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.
Prerequisite: Permission of instructor.

**ASE 287 COOPERATIVE
EDUCATION
0.5-6 CREDITS**

Develops practical objectives assigned by an automotive employer providing an on-the-job learning experience at an approved automotive repair facility.
Prerequisite: 24 credit hours of automotive classes.

**ASL – American Sign
Language**

WWW.RRCC.EDU/LANGUAGES

**ASL 121 AMERICAN SIGN
LANGUAGE I
5 CREDITS**

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**

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.
Prerequisite: Successful completion of ASL 121 or passing the ASL 121 proficiency exam.
Corequisite: Permission of instructor.

AST – Astronomy

**AST 101 ASTRONOMY I
4 CREDITS**

Focuses on the night sky, the history of astronomy, the tools of the astronomer, and the contents of the solar system, including the planets, moons, and small bodies.

**AST 102 ASTRONOMY II
4 CREDITS**

Emphasizes the structure and life cycle of the stars, the sun, galaxies, and the universe as a whole, including cosmology and relativity.

BIO – Biology

WWW.RRCC.EDU/BIOLOGY

**BIO 105 SCIENCE OF BIOLOGY
4 CREDITS**

Examines the basis of biology in the modern world and surveys the

current knowledge and conceptual framework of the discipline. BIO 105 explores biology as a science - a process of gaining new knowledge - and the impact of biological science on society. This course includes laboratory experiences and is designed for non-science majors.

**BIO 106 BASIC ANATOMY AND
PHYSIOLOGY
4 CREDITS**

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 Medical Office Technology Program.

**BIO 111 GENERAL COLLEGE
BIOLOGY I
5 CREDITS**

Examines the fundamental molecular, cellular, and genetic principles characterizing plants and animals. This course includes cell structure and function and the metabolic processes of cellular respiration, photosynthesis, cell reproduction, and basic concepts of heredity. This course includes laboratory experience.

**BIO 112 GENERAL COLLEGE
BIOLOGY II
5 CREDITS**

A continuation of General College Biology I. This course includes ecology, evolution, classification, structure, and function in plants and animals. This course includes laboratory experience.
Prerequisite: BIO 111.

**BIO 201 HUMAN ANATOMY
AND PHYSIOLOGY I
4 CREDITS**

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.

Prerequisite: BIO 111.

BIO 202 HUMAN ANATOMY AND PHYSIOLOGY II 4 CREDITS

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.

Prerequisite: BIO 201.

BIO 204 MICROBIOLOGY 4 CREDITS

Designed for health science majors. This course examines microorganisms with an emphasis on their structure, development, physiology, classification, and identification. The laboratory experience includes culturing, identifying, and controlling microorganisms with an emphasis on their role in infectious disease.

Prerequisite: BIO 111.

BIO 220 GENERAL ZOOLOGY 5 CREDITS

Designed for biology majors. This course focuses on the study of invertebrate and vertebrate animals and examines structure, evolutionary development, ecology, classification, physiology, reproduction, and zoogeography. A survey of zoological diversity emphasizes the characteristics, zoological contributions, and classification of animal phyla and major classes. This course requires hands-on laboratory and field experience.

Prerequisite: BIO 111.

BIO 221 BOTANY 5 CREDITS

Designed for biology majors. This course is a study of nonvascular and vascular plants. It emphasizes photosynthetic pathways, form and function, reproduction, physiology, genetics, diversity, evolution, and ecology. This course requires mandatory hands-on laboratory and field experience.

Prerequisite: BIO 111.

BIO 228 FIELD BIOLOGY III 4 CREDITS

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

BTE 100 COMPUTER KEYBOARDING 1 CREDIT

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

Designed for students with minimal keyboarding skills. Letters, tables, memos and manuscripts are introduced. Speed and accuracy are also emphasized.

Prerequisite: BTE 100 or minimum typing speed of 20 wpm.

BTE 108 TEN-KEY BY TOUCH 1 CREDIT

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

Designed to increase speed and improve accuracy in keyboarding on the PC through the use of correct techniques and concentrated effort.

Prerequisite: BTE 102 or minimum typing speed of 20 wpm.

BTE 112 KEYBOARDING SPEEDBUILDING II 2 CREDITS

Prerequisite: BTE 111.

Designed to increase speed and improve accuracy in keyboarding on the PC through the use of correct techniques and concentrated effort.

Prerequisite: BTE 111.

BTE 125 RECORDS MANAGEMENT 3 CREDITS

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.

Prerequisite: Acceptable keyboarding proficiency.

BTE 166 BUSINESS EDITING SKILLS
3 CREDITS

Provides proofreading techniques and reviews spelling, punctuation, grammar and formatting of various business documents and worksheets.

Co-requisite: BTE 102.

BTE 202 OFFICE SIMULATION I
3 CREDITS

Provides experience 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.

Prerequisite: CIS 118 or permission of instructor.

BTE 203 OFFICE SIMULATION II
3 CREDITS

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.

Prerequisite: BTE 202 or experience with advanced word processing and electronic spreadsheet applications; minimum keyboarding skill 35 wpm; or permission of instructor.

BTE 225 ADMINISTRATIVE OFFICE MANAGEMENT
3 CREDITS

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

Provides the student with the opportunity to supplement coursework with practical work experience related to his/her educational program. The student will work under the immediate

supervision of experienced personnel at the business location and with the direct guidance of the instructor.

Prerequisite: Permission of instructor.

BUS – Business

WWW.RRCC.EDU/BUSINESS

BUS 102 ENTREPRENEURIAL OPERATIONS
3 CREDITS

Covers the major aspects of small business management to enable the entrepreneur to successfully begin his own business. This course provides the basic concepts of marketing, principles of management, and finance needed to manage a small business. Further, students develop a business plan and explore methods of obtaining the financing required to launch the business.

BUS 115 INTRODUCTION TO BUSINESS
3 CREDITS

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 116 PERSONAL FINANCE
3 CREDITS

Surveys the basic personal financial needs of most individuals. The course emphasizes the basics of budgeting and buying, saving and borrowing money, the intricacies of home ownership, income tax and investments, and the wise use of insurance, wills and trusts.

BUS 120 INTRODUCTION TO E-COMMERCE
3 CREDITS

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.

Prerequisite: BUS 115 suggested.

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.

Prerequisite: BUS 115 suggested.

BUS 216 LEGAL ENVIRONMENT OF BUSINESS
3 CREDITS

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.

Prerequisite: A grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading and writing readiness, or permission of instructor.

BUS 217 BUSINESS COMMUNICATION AND REPORT WRITING
3 CREDITS

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.

Prerequisite: ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college writing readiness, or permission of instructor.

BUS 226 BUSINESS STATISTICS
3 CREDITS

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.

Prerequisite: MAT 099 (Intermediate Algebra) or equivalent.

BUS 275 SPECIAL TOPICS
1-3 CREDITS

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

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.

Prerequisite: Permission of instructor.

BUS 285 INDEPENDENT STUDY
1-3 CREDITS

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

CAD – Computer-Aided Drafting

WWW.RRCC.EDU/EGT

CAD 101 COMPUTER AIDED DRAFTING I
3 CREDITS

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 102 COMPUTER AIDED DRAFTING II
3 CREDITS

Focuses on advanced computer aided drafting skills using the latest release of CAD software. Includes blocks and wblocks, polylines, multilines, polyline editing, advanced editing, editing with grips, hatching, isometric drawings, dimensions and dimension variables, paper space and viewports, templates, external references, and printing/plotting.

Pre-requisite: CAD 101.

CAD 219 3DS/MAX
3 CREDITS

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.

Prerequisite: CAD 101, 102, or equivalent.

CAD 224 REVIT
3 CREDITS

Provides you with the software application training in AutoDesk Revit necessary to produce 3D architectural models and 2D drawings using AIA standards.

Prerequisite: EGT 230 or permission of instructor.

CAD 227 REVIT ADVANCED
3 CREDITS

Focuses on the advanced applications of the Revit software. Includes Family Editing, Topographic Site Plans, Worksharing, Phases, Advanced Scheduling, Custom Annotation, and Presentation Techniques.

Prerequisite: CAD 224

CAD 233 CIVIL 3D (SOFTWARE)
3 CREDITS

Provides you with the basics of 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, and 2D to 3D civil CAD applications.

Prerequisite: CAD 102 or equivalent.

CAD 256 SOLIDWORKS BASICS
6 CREDITS

Examines the basics of SolidWorks software to produce parametric models.

Prerequisite: 2-D/3-D CAD applications, permission of instructor.

**CAD 257 SOLIDWORKS
INTERMEDIATE
6 CREDITS**

Teaches you to apply intermediate SolidWorks applications to produce parametric models of parts and assemblies.

Prerequisite: CAD 256.

**CAD 258 SOLIDWORKS
ADVANCED
6 CREDITS**

Demonstrates the advanced applications of SolidWorks software.

Prerequisite CAD 257.

**CAD 280 INTERNSHIP
1-6 CREDITS**

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.

Prerequisite: Permission of instructor.

**CAD 285 INDEPENDENT
STUDY
1-6 CREDITS**

Meets individual needs. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: CAD 289 or permission of instructor.

**CAD 289 CAPSTONE
1-6 CREDITS**

A demonstrated culmination of learning within a given program of study.

Prerequisite: EGT 231.

CAR – Carpentry

WWW.RRCC.EDU/CARPENTRY

**CAR 123 ROOF FRAMING
1 CREDIT**

Describes the various kinds of roofs and contains instructions for laying out rafters for gable roofs, hip roofs and valley intersections. Coverage includes both stick-built and truss-built roofs.

**CAR 125 ROOFING MATERIALS
& METHODS
1 CREDIT**

Covers application techniques and estimation of asphalt and wood roofing products and accessories including gutters and flashing.

**CAR 133 CONSTRUCTION
FRAMING & SAFETY
4 CREDITS**

Utilizes hands-on techniques to illustrate basic framing methods and materials. Floor/wall and roof framing will be discussed, demonstrated, and taught. There will be extensive utilization of modern and western residential framing methods. The course will also include 10 hours of OSHA approved safety instruction which will qualify you for a 10-hour safety card.

**CAR 134 EXTERIOR FINISHES
AND TRIM
4 CREDITS**

Utilizes hands-on techniques to illustrate exterior moisture, trim, and exterior doors and window installation. Student will explore various residential materials and methods. Estimation of time and material will be discussed as well as general business practices.

**CAR 136 REMODELING,
RENOVATION, AND
ADDITIONS
4 CREDITS**

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**

Utilizes 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**

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**

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**

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.

Prerequisite: Permission of instructor.

CAR 166 STAIR DESIGN & CONSTRUCTION
4 CREDITS

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.

Prerequisite: CAR 156 or permission of Instructor.

CAR 253 ADVANCED INTERIOR TRIM - CABINET/ COUNTERTOPS
4 CREDITS

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.

Prerequisite: CAR 156, or permission of instructor.

CAR 275 SPECIAL TOPICS
1-6 CREDITS

Provides you with a vehicle to pursue in depth exploration of special topics of interest

Prerequisite: CAR 156 or permission of Instructor.

CAR 280 TECHNICAL PROJECT
4-12 CREDITS

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.

Prerequisite: Permission of the instructor.

CAR 282 INTERNSHIP
0.5-12 CREDITS

Provides students with prior course work an opportunity to apply their course studies.

Prerequisite: Permission of the instructor.

CAR 285 INDEPENDENT STUDY
0.5-12 CREDITS

Provides you the opportunity to work with the instructor on a specific area with specific objectives and a predetermined project completion date.

Prerequisite: Permission of the instructor.

CAR XXX EPA CERTIFIED LEAD RENOVATOR/DUST SAMPLING
1 CREDIT

Trains the workforce in proper handling and notification of local personal of lead based paint contamination and renovation. EPA is particularly concerned about dust lead hazards generated by renovations because children, especially younger children, are at risk for high exposures of lead-based paint dust via hand-to-mouth exposure.

CHE 102 INTRODUCTION TO CHEMISTRY II
5 CREDITS

Focuses on introductory organic and biochemistry (sequel to Introduction to Chemistry I). This course includes the study of hybridization of atomic orbitals for carbon, nomenclature of both organic and biochemical compounds, physical and chemical properties of various functional groups of organic chemistry, and physical and chemical properties of biochemical compounds along with their biochemical pathways. Laboratory experiments are included.

CHE 111 GENERAL COLLEGE CHEMISTRY I
5 CREDITS

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.

Prerequisite: One year of high school chemistry or equivalent.

Corequisite: MAT 121.

CHE 112 GENERAL COLLEGE CHEMISTRY II
5 CREDITS

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.

Prerequisites: CHE 111, MAT 121.

CHE – Chemistry

WWW.RRCC.EDU/CHEMISTRY

CHE 101 INTRODUCTION TO CHEMISTRY I
5 CREDITS

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 non-science majors, students in occupational and health programs, or students with no chemistry background.

Prerequisite: MAT 099.

CHE 208 INTRODUCTION TO ORGANIC AND BIOCHEMISTRY 5 CREDITS

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.
Prerequisites: CHE 111 and CHE 112.

CHE 211 ORGANIC CHEMISTRY I 5 CREDITS

Focuses on compounds associated with the element carbon. This course includes structure and reactions of aliphatic hydrocarbons, selected functional groups and some unsaturated hydrocarbons. This course covers nomenclature of organic compounds, stereochemistry, reaction mechanisms and an introduction to chemical synthesis.
Prerequisite: CHE 112.

CHE 212 ORGANIC CHEMISTRY II 5 CREDITS

Continues the investigation into the chemistry of carbon-based compounds, their reactions and synthesis. This course includes the structure, reactivities, and synthesis of organic functional groups not covered in the first semester, as well as some analytical techniques. CHE 212 explores functional groups including aromatics hydrocarbons, aldehydes, ketones, amines, amides, esters, and carboxylic acids. An introduction to biochemical topics may be included if time permits
Prerequisite: CHE 211.

CIS – Computer Information Systems

WWW.RRCC.EDU/CIS

CIS 103 LEARNING WINDOWS 1 CREDIT

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

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

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

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 118 INTRODUCTION TO PC APPLICATIONS: MS OFFICE 3 CREDITS

Introduces basic computer terminology, file management, and PC system components. It provides an overview of the operating system and office application software including word processing, spreadsheets, and databases. It includes the use of a Web browser to access the Internet.

CIS 128 WINDOWS COMPLETE 3 CREDITS

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

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.
Prerequisite: A working knowledge of Windows.

CIS 131 WORD PROCESSING I: MS WORD 1 CREDIT

Gives the student 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.
Prerequisite: CIS 128 or a working knowledge of Windows.

**CIS 132 WORD PROCESSING II: MS WORD
1 CREDIT**

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.

Prerequisite: CIS 131.

**CIS 133 WORD PROCESSING III: MS WORD
1 CREDIT**

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.

Prerequisite: CIS 132.

**CIS 135 COMPLETE PC WORD PROCESSING: MS WORD
3 CREDITS**

Utilizes 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.

Prerequisite: CIS 118 or CIS 128 or a working knowledge of Windows.

**CIS 140 MICROSOFT OUTLOOK
1 CREDIT**

Introduces the functions used in Microsoft Outlook including email messages, calendaring, contacts, tasks, journals, and notes.

**CIS 141 PC DATABASES I: MS ACCESS
1 CREDIT**

Introduces the functions of a database. It includes skills such as file creation, searches, sorts, simple editing and indexing.

Prerequisite: CIS 128 or a working knowledge of Windows.

**CIS 142 PC DATABASES II: MS ACCESS
1 CREDIT**

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.

Prerequisite: CIS 141.

**CIS 143 PC DATABASES III: MS ACCESS
1 CREDIT**

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.

Prerequisite: CIS 142.

**CIS 145 COMPLETE PC DATABASE: MS ACCESS
3 CREDITS**

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.

Prerequisite: CIS 118 or CIS 128 or a working knowledge of Windows.

**CIS 151 PC SPREADSHEETS I: MS EXCEL
1 CREDIT**

Introduces you to concepts and applications of an electronic spreadsheet. Topics include creating a worksheet, developing a professional looking worksheet and creating charts.

Prerequisite: CIS 118 or CIS 128 or a working knowledge of Windows.

**CIS 152 PC SPREADSHEETS II: MS EXCEL
1 CREDIT**

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.

Prerequisite: CIS 151.

**CIS 153 ADVANCED SPREADSHEETS: MS EXCEL
1 CREDIT**

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.

Prerequisite: CIS 152.

**CIS 155 PC SPREADSHEET
CONCEPTS: MS EXCEL
3 CREDITS**

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. *Prerequisite: CIS 118 or CIS 128 or a working knowledge of Windows.*

**CIS 165 COMPLETE
PRESENTATION GRAPHICS:
MS POWERPOINT
3 CREDITS**

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. *Prerequisite: CIS 118 or CIS 128 or a working knowledge of Windows.*

**CIS 167 DESKTOP
PUBLISHING: MS PUBLISHER
3 CREDITS**

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. *Prerequisite: CIS 128 or a working knowledge of Windows.*

**CIS 220 FUNDAMENTALS OF
UNIX
3 CREDITS**

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. *Prerequisite: CSC 119 equivalent experience or permission of instructor.*

**CIS 221 UNIX
SHELLSCRIPTING
3 CREDITS**

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. *Prerequisite: CIS 220.*

**CIS 240 DATABASE DESIGN
AND DEVELOPMENT
3 CREDITS**

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 243 INTRODUCTION TO
PL/SQL
3 CREDITS**

Introduces students to creating database structures and storing, retrieving, and manipulating data in a relational database. SQL is the set of statements that all users and programs must use to access data in the Oracle database. Also focuses on SQL*Plus to manipulate SQL statements.

**CIS 244 SQL PL/SQL
3 CREDITS**

Provides a detailed introduction to the Structured Query Language (SQL) as used in modern relational database systems. Students will develop skills in storing, retrieving and manipulating data using SQL as well as in defining database objects using the portion of SQL known as the Data Definition Language (DDL). The course will also provide a detailed introduction to the PL/SQL programming language that

is integral to some widely-used relational database systems, such as Oracle. Students will learn to create and maintain blocks of PL/SQL code that are used and shared by multiple forms, reports and program libraries. Users will learn to implement database triggers and other coded structures applicable to client/server databases

**CIS 246 ORACLE DATABASE
ADMIN I
4 CREDITS**

Provides a foundation in basic Oracle architecture, storage structure and database administrative tasks. Emphasizes the knowledge and skills to create databases and data dictionary views, and to manage Oracle instances, tables, tablespaces, data files, control files, redo log files and rollback segments.

**CIS 247 ORACLE DATABASE
ADMIN II
4 CREDITS**

Provides basic administrative skills that build on those learned in CIS 246. Emphasizes the knowledge and skills to manage indexes, restraints and data integrity. Develops the ability to load and reorganize data, to use national support language, to create and manage users and their profiles, resources, privileges and roles, and to manage password security.

**CIS 251 INTRODUCTION
TO STRUCTURED QUERY
LANGUAGE (SQL)
3 CREDITS**

Introduces students to ANSI SQL which is the basis for most other Structured Query Languages. Students learn to query and update data, create table and views, use indexes, secure data, develop stored procedures and triggers learn object relational concepts and develop applications with embedded SQL and ODBC. *Prerequisite: CIS 240.*

**CIS 252 IMPLEMENT AND MAINTAIN SQL SERVER DATABASE
3 CREDITS**

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.

Prerequisite: CIS 251 or equivalent knowledge.

**CIS 253 PROGRAMMING WITH A MS SQL SERVER DATABASE
3 CREDITS**

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.

Prerequisite: CIS 252 or equivalent knowledge and experience.

**CIS 268 SYSTEMS ANALYSIS AND DESIGN I
3 CREDITS
SPRING ONLY EXCEPT ONLINE**

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.

Prerequisite: This course should be taken during the last semester of your certificate/degree program.

**CIS 289 CAPSTONE
3 CREDITS
SPRING ONLY**

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.

Prerequisite: Last semester of your certificate/ degree program.

CMD – Communication Disorders

WWW.RRCC.EDU/SPEECH

**CMD 160 INTRODUCTION TO HUMAN COMMUNICATION DISORDERS
3 CREDITS**

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**

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**

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.

Prerequisite: College-level reading and math skills.

**CMD 266 NORMAL LANGUAGE DEVELOPMENT
3 CREDITS**

Discusses the study of normal speech and language development and its relationship to other aspects of child development and childhood disabilities.

**CMD 267 ANATOMY AND PHYSIOLOGY OF THE SPEECH AND HEARING MECHANISM
3 CREDITS**

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.

Prerequisite: CMD 160.

CNG – Computer Networking

WWW.RRCC.EDU/CIS

CNG 101 INTRO TO NETWORKING 3 CREDITS

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

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

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.
Prerequisite: CNG 121.

CNG 124 NETWORKING I: NETWORK+ 3 CREDITS

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.
Prerequisite: CNG 122 or comparable knowledge or experience.

CNG 125 NETWORKING II: NETWORK+ 3 CREDITS

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.
Prerequisite: CNG 124.

CNG 131 NETWORK SECURITY FUNDAMENTALS 3 CREDITS

Delivers a comprehensive overview of network security, including general security concepts. Communication Security is studied, including remote access, e-mail, the Web, directory and file transfer, and wireless data. Common network attacks are introduced. Cryptography basics are incorporated, and operational/organizational security is discussed as it relates to physical security, disaster recovery, and business continuity. Computer forensics is introduced.
Prerequisite: Instructor Approval.

CNG 209 MS WINDOWS SERVER ACTIVE DIRECTORY CONFIGURATION 4 CREDITS

Provides students with the knowledge and skills to configure Active Directory Domain Services in a distributed environment, implement Group Policies, perform backup and restore, and monitor and troubleshoot Active Directory related issues.
Prerequisite: CNG 125 or comparable knowledge or experience.

CNG 210 MS WINDOWS SERVER NETWORK INFRASTRUCTURE CONFIGURATION 4 CREDITS

Provides students with the knowledge and skills to configure Active Directory Domain Services in a distributed environment, implement Group Policies, perform backup and restore, and monitor and troubleshoot Active Directory related issues.
Prerequisite: CNG 125 or comparable knowledge or experience.

CNG 211 WINDOWS CONFIGURATION: VISTA 3 CREDITS

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

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 260 CISCO NETWORK ASSOCIATE I
5 CREDITS**

(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**

(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.

Prerequisite: CNG 260.

**CNG 262 CISCO NETWORK ASSOCIATE III
5 CREDITS**

(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).

Prerequisite: CNG 261.

**CNG 263 CISCO NETWORK ASSOCIATE IV
5 CREDITS**

(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.

Prerequisite: CNG 262.

COM – Communication Studies

WWW.RRCC.EDU/SPEECH

**COM 105 CAREER COMMUNICATION
3 CREDITS**

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 115 PUBLIC SPEAKING
3 CREDITS**

Combines the basic theory of speech communication with public speech performance skills. Emphasis is on speech delivery, preparation, organization, support, and audience analysis.

**COM 125 INTERPERSONAL COMMUNICATION
3 CREDITS**

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.

**COM 126 COMMUNICATION IN HEALTHCARE
3 CREDITS**

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 205 VOICE AND DICTION
3 CREDITS**

Studies the physiological production of the speaking voice and methods for improving the quality of the spoken word in general American speech.

**COM 216 PRINCIPLES OF SPEECH COMMUNICATION II
3 CREDITS**

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.

Prerequisite: COM 115.

**COM 217 GROUP COMMUNICATION
3 CREDITS**

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.

**COM 220 INTERCULTURAL COMMUNICATION
3 CREDITS**

Explores the link between culture and communication. The course 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.

Prerequisite: COM 115 or permission of instructor.

**COM 225 ORGANIZATIONAL COMMUNICATION
3 CREDITS**

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 organizational communication environments, networks and goals.

**COM 230 ARGUMENTATION AND DEBATE
3 CREDITS**

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.

Prerequisite: COM 115 or permission of the instructor.

**COM 263 CONFLICT RESOLUTION
1 CREDIT**

Focuses on handling conflict productively. The course enables the student to understand the roots of conflict and how to mediate interpersonal conflict in a variety of settings. The course includes conflict prevention techniques.

**COM 275 SPECIAL TOPICS
0.5-6 CREDITS**

Provides you with a vehicle to pursue in-depth exploration of special topics of interest.

**COM 285 INDEPENDENT STUDY
0.5-6 CREDITS**

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

CON – Construction Technology

**WWW.RRCC.EDU/
CONSTRUCTION**

**CON 105 CONSTRUCTION TECHNOLOGY
4 CREDITS**

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**

Explores the expanding array of careers within the construction industry. Students will be exposed to the construction industry through job site tours, hands-on experience, and classroom activities. Math and science applications will be

established through the academic integration of the job-site experience and the classroom theory.

**CON 140 INTRODUCTION TO BUILDING CODES AND ENFORCEMENT
3 CREDITS**

Introduces the basic concepts of code enforcement.

**CON 142 INTERNATIONAL RESIDENTIAL CODE
4 CREDITS**

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**

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**

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**

Introduces students to reading and interpreting blueprints for residential, commercial and industrial construction.

**CON 240 CODE COMPLIANCE II
3 CREDITS**

Prepares students to successfully complete the building inspector exam. This course studies building codes and enforcement practices.

**CON 241 OVERVIEW OF
INTERNATIONAL CODES
4 CREDITS**

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**

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**

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**

Introduces basic management ideas, principles and skills that will

enable the student to immediately function more effectively in everyday management of a crew on a construction project. This course includes the role of the construction supervisor, motivational strategies, positive discipline, leadership styles, and team building. (Unit 1 of AGC Supervisory Training Program)

**CON 262 ORAL AND
WRITTEN COMMUNICATIONS
FOR CONSTRUCTION
SUPERVISORS
2 CREDITS**

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**

Identifies 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**

Develops 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**

Teaches 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**

Teaches 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**

Teaches 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

Teaches 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

Teaches you to organize a construction project with productivity improvement as a goal is the focus of this course. Topics include calculating and measuring work productivity, work improvement analysis, understanding work worker ability and the impact of environmental factors, implementing and monitoring improvement programs. (Unit 9 of AGC Supervisory Training Program)

CON 280 INTERNSHIP
1-6 CREDITS

Provides you with the opportunity to supplement coursework 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.

Prerequisite: Permission of instructor.

CON 285 INDEPENDENT STUDY
1-6 CREDITS

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

COS – Cosmetology

**WWW.RRCC.EDU/
WARRETECH**

COS 103 SHAMPOO/RINSES/CONDITIONERS I
1 CREDIT

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

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

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

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

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

Combines theory with the practical application of roller placement, shaping, pincurls, finger waves, airforming iron curling, soft pressing and hard pressing.

COS 131 INTERMEDIATE I: HAIRSTYLING
2 CREDITS

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

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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**

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

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

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

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

This course 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.RRCC.EDU/CRIMINAL

Prerequisite for all CRJ courses: Students must have earned an ACT score of 18. If they do not have an 18, students must take ACCUPLACER and score 95 or higher on the Writing Skills portion of ACCUPLACER and 80 or higher on the Reading Skills portion.

**CRJ 110 INTRODUCTION TO
CRIMINAL JUSTICE**

3 CREDITS

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 125 LAW ENFORCEMENT
OPERATIONS**

3 CREDITS

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.

Prerequisite: CRJ 110.

CRJ 135 JUDICIAL FUNCTION

3 CREDITS

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.

Prerequisite: CRJ 110.

**CRJ 145 CORRECTIONAL
PROCESS**

3 CREDITS

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.

Prerequisite: CRJ 110.

**CRJ 150 VICTIMS OF CRIME
AND TRAUMA**

3 CREDITS

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.

Prerequisite: CRJ 110.

CRJ 151 DOMESTIC VIOLENCE

3 CREDITS

Examines theories, issues, legal strategies, and intervention applicable to abuse in intimate relationships.

Prerequisites: CRJ 110 and CRJ 150 .

CRJ 152 SEXUAL ASSAULT

3 CREDITS

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.
Prerequisites: CRJ 110 and CRJ 150.

CRJ 153 VIOLENCE AGAINST CHILDREN
3 CREDITS

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.
Prerequisites: CRJ 110 and CRJ 150.

CRJ 190 FINANCIAL INVESTIGATION
3 CREDITS

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.
Prerequisite: CRJ 110.

CRJ 205 PRINCIPLES OF CRIMINAL LAW
3 CREDITS

Focuses on common law and statutory law crimes, the Model Penal Code, elements defining crimes and penalties, defenses to criminal accusations, and definitions and distinctions between criminal and civil law.
Prerequisite: CRJ 110.

CRJ 210 CONSTITUTIONAL LAW
3 CREDITS

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.
Prerequisite: CRJ 110.

CRJ 220 HUMAN RELATIONS AND SOCIAL CONFLICT
3 CREDITS

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.
Prerequisite: CRJ 110.

CRJ 225 CRISIS INTERVENTION
3 CREDITS

Provides information and application of crisis theories in working with diverse populations. It examines the interventionist role.
Prerequisites: CRJ 110 and CRJ 150

CRJ 230 CRIMINOLOGY
3 CREDITS

Examines the question of crime causation from legal, social, political, psychological and theoretical perspectives. It covers the history and development of criminology.
Prerequisite: CRJ 110.

CRJ 231 INTRODUCTION TO FORENSIC SCIENCE AND CRIMINALISTICS
3 CREDITS

Focuses on the fundamentals of forensic science that are essential for gathering evidence at the crime scene and analyzing it in the crime laboratory.
Prerequisite: CRJ 110.

CRJ 236 CRJ RESEARCH METHODS
3 CREDITS

Introduces and applies methods for criminal justice and criminology with an emphasis on the scientific method and the role of empirical inquiry into criminal justice and criminology. 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 criminal justice and criminology research will also be covered.
Prerequisite: CRJ 110.

CRJ 239 MANAGING EMERGENCY WORKER STRESS
3 CREDITS

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.
Prerequisites: CRJ 110 and CRJ 150.

CRJ 245 INTERVIEW AND INTERROGATION
3 CREDITS

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.
Prerequisite: CRJ 110.

CRJ 275 SPECIAL TOPICS
1-6 CREDITS

Provides you with a vehicle to pursue in-depth exploration of special topics of interest.
Prerequisite: Some topics may be restricted to criminal justice practitioners.

CRJ 280 INTERNSHIP 1-6 CREDITS

Provides placement in the criminal justice field to integrate theory with practice.

Prerequisite: Permission of internship and CRJ coordinators.

CRJ 285 INDEPENDENT STUDY 1-6 CREDITS

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

CRJ 289 CAPSTONE 1 CREDIT

Provides a demonstrated culmination of learning within a given program of study.

CSC – Computer Science

WWW.RRCC.EDU/CIS

CSC 119 INTRODUCTION TO PROGRAMMING 3 CREDITS

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 program designs.

CSC 126 GAME DESIGN AND DEVELOPMENT 3 CREDITS

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

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.
Prerequisite: CSC 119, equivalent experience or permission of instructor.

CSC 160 COMPUTER SCIENCE I 4 CREDITS

Introduces you to the discipline of computer science. Topics covered will include algorithm development, data representation, arithmetic and logical expressions, subprograms and input/output operations using a structured programming language. Intensive computer laboratory activities are required. Object-oriented techniques will also be emphasized.
Prerequisite: MAT 121 College Algebra, equivalent experience, or permission of instructor.

CSC 161 COMPUTER SCIENCE II 4 CREDITS

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 is required. Object-oriented techniques will also be emphasized.

Prerequisite: CSC 160 or equivalent experience or permission of instructor.

CSC 165 DISCRETE STRUCTURES 3 CREDITS

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.

Prerequisite: CSC 160 or equivalent experience or permission of instructor.

CSC 227 3D GAME PROGRAMMING 3 CREDITS

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.
Prerequisite: CSC 126, CSC 160 or CSC 236 or equivalent experience, or permission of instructor.

CSC 228 3D GAME SCRIPTING 3 CREDITS

Allows you to engage in advanced game engine scripting. Topics include problem-solving, objects, string, Artificial Intelligence (AI), and group behaviors.
Prerequisites: CSC 126 and CSC 227, CSC 160 or CSC 236 or equivalent experience or permission of instructor.

CSC 236 C# PROGRAMMING 4 CREDITS

Introduces the C# programming language and covers all syntactical components of the language including arrays, structures, functions, and classes. Content

will focus on writing clear properly structured and well-documented programs using C# and object oriented methodology.

Prerequisite: CSC 119.

CSC 240 JAVA PROGRAMMING 3 CREDITS

Introduces the Java programming language and covers 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.

Prerequisite: CSC 160, equivalent experience, or permission of instructor.

CSC 248 JAVA INTERNET PROGRAMMING 3 CREDITS

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.

Prerequisite: CSC 240, equivalent experience, or permission of instructor.

CSC 250 PROGRAMMING WITH MICROSOFT ADO .NET 3 CREDITS

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.

Prerequisite: CSC 154, CSC 236, CSC 251, CSC 261, or equivalent experience or permission of instructor.

CSC 251 PROGRAMMING IN VISUAL BASIC .NET 3 CREDITS

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.

Prerequisite: CSC 154, equivalent experience, or permission of instructor.

CSC 253 MS ASP.NET WEB APPLICATION DEVELOPMENT 3 CREDITS

Teaches 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 Web site.

Prerequisite: CSC 251 or CSC 261.

CSC 261 PROGRAMMING IN C# .NET 3 CREDITS

Provides you with the knowledge and skills needed to develop C# applications for the Microsoft .NET Platform. This course focuses on C# program structure, language syntax, and implementation details.

Prerequisite: CSC 236 or CSC 160, equivalent experience, or permission of instructor.

CSC 262 VS.NET APPLICATION DEVELOPMENT: VB & C# 3 CREDITS

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.

Prerequisites: CSC 251, CSC 261, or equivalent experience.

CUA – Culinary Arts

WWW.RRCC.EDU/CULINARY

CUA 101 FOOD SAFETY AND SANITATION 2 CREDITS

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 will take a nationally recognized test from the Education Foundation of the National Restaurant Association. If passed with a score of 75% or more, you will receive a Certificate of Completion from the Education Foundation.

CUA 105 FOOD SERVICE CONCEPTS AND MANAGEMENT SKILLS 3 CREDITS

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**

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**

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**

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**

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**

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**

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 the preparation area. It allows

you to apply pre-preparation skills and efficient organization of work techniques.

**CUA 132 CENTER OF THE PLATE: MEAT
1 CREDIT**

Provides you with the basics of meat handling, including principles used for selecting meat products, their basic cuts, and cooking methods. It focuses on a variety of meat products in a commercial kitchen.

**CUA 133 CENTER OF THE PLATE: POULTRY, FISH, AND SEAFOOD
1 CREDIT**

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 141 BAKING: PRINCIPLES AND INGREDIENTS
1 CREDIT**

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**

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

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

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

Examines the preparation and production of cakes, pastries, different styles of decorating, commercial equipment, and types of products used for decoration. It covers plate painting, national products, and designing show pieces.

CUA 151 BAKING: INTERMEDIATE BREAD PREPARATION
3 CREDITS

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

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

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

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 1
5 CREDITS

Provides you with the opportunity to supplement coursework 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.

CUA 182 CULINARY ARTS INTERNSHIP 2
5 CREDITS

Provides you with the opportunity to supplement coursework 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.

CUA 210 ADVANCED CUISINE AND GARDE MANGER
4 CREDITS

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 the 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

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

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 using management principles in the selection, training, evaluating, delegating, motivating, rewarding, and disciplining of employees. It stresses skills for success through people development.

CUA 261 COST CONTROLS CREDITS: 3

Provides students with the opportunity to learn the types of costs usually found in the food service industry. Students 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. Students 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.

CUA 281 CULINARY ARTS INTERNSHIP 3 5 CREDITS

Places you in an actual work situation where you will participate in the operation of a foodservice establishment. Hours of work are arranged by the site supervisor and you, the intern. The number of hours required is determined by the number of credits the course carries.

CWB – Computer Web

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CWB 110 COMPLETE WEB AUTHORING: HTML 3 CREDITS

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).
Prerequisites: CIS 130 and CIS 128 or a working knowledge of Windows

CWB 130 COMPLETE WEB EDITING TOOLS: DREAMWEAVER 3 CREDITS

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.
Prerequisites: CWB 110 and CIS 128 or a working knowledge of Windows.

CWB 162 INTRO TO IMAGE EDITING: PHOTOSHOP 3 CREDITS

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.
Prerequisite: CIS 128 or a working knowledge of Windows.

CWB 164 XML 3 CREDITS

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.

Prerequisite: CWB 110 or a working knowledge of HTML, including CSS.

CWB 205 COMPLETE WEB SCRIPTING: JAVASCRIPT 3 CREDITS

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.
Prerequisites: CWB 110 and one programming language (CSC 154 or higher) or permission of instructor.

CWB 208 WEB APPLICATION DEVELOPMENT: PHP 3 CREDITS

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 also will learn key application standards, such as source and revision control, coding standards, code optimization, and data integrity.
Prerequisite: CSC160, CIS 251, and CWB 110, or permission of instructor.

CWB 245 COMPLETE WEB ANIMATION: FLASH 3 CREDITS

Explores the complete set of Web animation tools. Topics include creating an .swf file; publishing the file with interactivity and animation;

creating .swf files encompassing navigation, animation, event sound, streaming sound, behavior actions; getting a movie clip, tell targets, preliminary Generator discussion, and preloaded sequences; integration of 3D objects; and producing a high-end project.
Prerequisites: CSC 119 or CSC 160; CWB 245 and CWB 162 are recommended, or permission of instructor.

CWB 246 ADVANCED WEB ANIMATION: FLASH 3 CREDITS

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.

Prerequisite: CWB 245 or permission of instructor.

CWB 262 IMAGE EDITING II: PHOTOSHOP 3 CREDITS

Covers advanced features of Adobe Photoshop, including advanced 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.

Prerequisite: CWB 162.

CWB 289 CAPSTONE 3 CREDITS

Requires a demonstrated culmination of learning within a given program of study.

DAN – Dance

WWW.RRCC.EDU/DANCE

DAN 105 HIP HOP I 1 CREDIT

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 1 CREDIT

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 111 MODERN DANCE I 1 CREDIT

Introduces basic concepts and skills of modern dance and focuses on technique work to increase strength, flexibility, endurance, coordination, rhythm, and spatial awareness. The course also explores dance as a tool for communication and dance as an art form. DAN 111 may be repeated for no more than three credits.

DAN 112 MODERN DANCE II 1 CREDIT

Includes a more in-depth study of modern dance concepts as well as more specific techniques of modern dance choreography. It focuses on more advanced technique work with more emphasis on improvisation. DAN 112 may be repeated for a total of three credits.

DAN 113 MODERN DANCE III 1 CREDIT

Builds on the skills learned in DAN 112 with more advanced technique work. Enables students to increase knowledge of specific modern

choreographers' techniques and develop more experience with movement improvisation. May be repeated for a total of three credits.

DAN 115 COUNTRY SWING I 1 CREDIT

Includes many styles and various combinations of steps for Western dance music. Will also teach the students how to convert combinations of others dances of traditional and fad as they become popular.

DAN 117 SALSA I 1 CREDIT

Introduces the beginning dancer to popular Salsa steps and dance combinations. This course includes basic partnering concepts and techniques. Dancers will explore rhythm, proper body alignment and music recognition. A partner is not required for this course.

DAN 118 SALSA II 1 CREDIT

Continues Salsa I with an increased knowledge of Salsa dance. This course focuses on Salsa dancing in groups of couples with frequent partner exchanges. Dancers learn a more in-depth study of Salsa dance concepts and techniques. A partner is not required for this course.

DAN 121 JAZZ I 1 CREDIT

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 1 CREDIT

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 123 JAZZ III 1 CREDIT

Builds on skills learned in DAN 122 and incorporates work at an intermediate/advanced level. Expands on jazz dance technique through more challenging movement combinations. Requires knowledge of the learned basics in dance.

DAN 125 HISTORY OF DANCE I 3 CREDITS

Introduces the history of dance as a theatre or performing art. Examines dance from Classical Greece through the Renaissance, including court and classical ballet to modern dance with African and Caribbean influences.

DAN 129 INTRODUCTION TO DANCE 1 CREDIT

Introduces the art of dance and movement expression from a variety of viewpoints: historical, cultural, aesthetic, critical and creative. Examines the art and craft of dance as an expression of culture and community while exploring personal expression, imagery, dance techniques and performance qualities.

DAN 130 DANCE SAMPLER 1 CREDIT

Introduces the beginning dancer to popular dances through a social dance sampler in Salsa, Swing, and Country Western Dance technique, footwork, body posturing, rhythms, and dance floor etiquette. Examines a variety of dances such as Salsa's Mambo, Cha-Cha, and Rumba; Swing's Lindy Hop (jitterbug); and Country Western's Two Step, Cowboy Waltz, Cotton-Eyed Joe and various Country Western line dances.

DAN 131 BALLET I 1 CREDIT

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 1 CREDIT

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 133 BALLET III 1 CREDIT

Builds on Ballet II at an intermediate/advanced level. Continues learning within the basic structure of a ballet class while increasing the level of skills through more experience with challenging movement combinations. May be repeated for a maximum of three credits.

DAN 141 BALLROOM DANCE I 1 CREDIT

Introduces the basic terminology, techniques and routines of several dances from a specific country or region. Focuses on the music, costumes and customs related to the dances they study. Partners are not required. May be repeated for a maximum of three credits.

DAN 142 BALLROOM DANCE II 1 CREDIT

Continues Dance 141 with focus on regional dances, customs and rhythms. Partners are not required. May be repeated for a maximum of three credits.

DAN 143 TAP I 1 CREDIT

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

Presents belly dance - the oldest dance form known to humankind as 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

Continues DAN 151, with emphasis on coordination and balance and additional techniques. It includes costume design.

DAN 154 DANCE AND STAGE MOVEMENT 3 CREDITS

Introduces you to the basic elements of modern dance and to the potential of dance and stage movement as a means of communication.

DAN 211 DANCE COMPOSITION 3 CREDITS

Focuses on principles of choreography and development of individual expressive style.

DAN 221 DANCE PERFORMANCE I 2 CREDITS

Enables students to rehearse and perform dances for community concerts after selection through

audition. Covers warm-up/advanced technique, rehearsals and cool down in a dance company atmosphere. Focuses on choreography for original ballet, modern dance and jazz dance works.

**DAN 222 DANCE PERFORMANCE II
2 CREDITS**

Continues Dance Performance class offering more opportunities for students to perform in different settings.

**DAN 224 DANCE FOR MUSICAL THEATRE
3 CREDITS**

Introduces you to dance within the context of musical theatre. The course enables you to practice non-verbal communication and expressive movement techniques.

Prerequisites: DAN 154 or permission of instructor.

**DAN 251 BELLY DANCE III
1 CREDIT**

Continues Belly Dance II (DAN 152) with emphasis on coordination, balance and additional techniques. Includes costume design, fitness, and the emphasis of learning advanced dance techniques to perform professionally.

**DAN 275 SPECIAL TOPICS
1-6 CREDITS**

Provides you with a vehicle for in-depth exploration of special topics of interest.

**DMS – Diagnostic
Medical Sonography**

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You must be accepted into the DMS program to take any courses other than RTE 255 and DMS 101. 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**

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 101 INTRODUCTION TO SONOGRAPHY
2 CREDITS**

Provides an overview of sonography for students interested in the Diagnostic Medical Sonography program with an introduction to pulse-echo imaging, general sonography, cardiac sonography, vascular technology and typical career opportunities.

**DMS 201 SURVEY OF GENERAL SONOGRAPHY
2 CREDITS**

Provides an overview of general sonography emphasizing normal abdomen, superficial structures, female pelvis and obstetrical ultrasound including common abnormalities and typical career opportunities.

**DMS 202 NEUROSONOLOGY
2 CREDITS**

Introduces students to gross anatomy, sectional anatomy, and pathology of the brain and spinal cord in addition to the sonographic appearances of normal and abnormal structures.

**DMS 203 CEREBROVASCULAR SONOGRAPHY
2 CREDITS**

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**

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

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

Covers 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 207 ADVANCED OBSTETRIC SONOGRAPHY 2 CREDITS

Introduces students to the practice and concepts of advanced/high-risk obstetrical sonography. Students will study genetics and genetic testing, maternal and fetal conditions, fetal testing and interventions, and perinatal screening.

DMS 208 SURVEY OF ECHOCARDIOGRAPHY 2 CREDITS

Provides an overview of echocardiography emphasizing normal anatomy, including common abnormalities and typical career opportunities.

DMS 221 OB/GYN ULTRASOUND I 2 CREDITS

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

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 225 FETAL ECHOCARDIOGRAPHY 2 CREDITS

Provides an overview of fetal echocardiography including fetal cardiac anatomy, physiology, normal fetal heart, the abnormal fetal heart to include congenital anomalies and an overview of scanning techniques.

DMS 231 ABDOMINAL ULTRASOUND I 2 CREDITS

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

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 235 PEDIATRIC ECHOCARDIOGRAPHY 2 CREDITS

Provides an overview of pediatric echocardiography including cardiac anatomy, physiology, normal pediatric heart, the abnormal pediatric heart to include congenital anomalies and an overview of scanning techniques using the ASE guidelines.

DMS 241 ULTRASOUND PHYSICS I 2 CREDITS

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

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 244 ULTRASOUND SCANNING LAB
6 CREDITS**

Prepares the sonography student for ultrasound internship with an emphasis on applied instrumentation, ergonomics, and image optimization.

**DMS 251 VASCULAR ANATOMY AND PHYSIOLOGY
2 CREDITS**

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**

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 255 ADULT ECHOCARDIOGRAPHY I
2 CREDITS**

Introduces the student to the field of echocardiography to include echocardiographic anatomy, physiology, scanning technique

with an emphasis on 2-D, M-mode and Doppler imaging following ASE guidelines.

**DMS 256 ADULT ECHOCARDIOGRAPHY II
2 CREDITS**

Expands echocardiographic imaging techniques with an emphasis on stress echocardiography, transesophageal, intraoperative, advanced cardiac imaging. ECG techniques are introduced with an emphasis on normal and abnormal rhythms encountered in echocardiography.

**DMS 261 INTRODUCTION TO VASCULAR TESTING
2 CREDITS**

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**

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 265 ADULT ECHO PATHOLOGY I
2 CREDITS**

Introduces echocardiographic pathology with an emphasis on valvular heart disease, ventricular function and hypertensive heart disease.

**DMS 266 ADULT ECHO PATHOLOGY II
2 CREDITS**

Expands echocardiographic pathology with an emphasis on pericardial disease, cardiomyopathies, congenital heart disease and diseases of the aorta.

**DMS 280 CLINICAL OBSERVATION
2.5 CREDITS**

Prepares the beginning ultrasound student for clinical internship under the direct supervision of a registered sonographer with a focus on introductory skills necessary for clinical internship to include instrumentation, scanning techniques and image evaluation. The student will spend seven to eight hours per week at the clinical site for training in patient care and work efficiency in the clinical setting.

**DMS 281 ULTRASOUND INTERNSHIP I
10 CREDITS**

Provides clinical experience for the beginning ultrasound student. You will master the foundations of instrumentation, scanning techniques and image evaluation of sectional anatomy. 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**

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**

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.

**DMS 289 ULTRASOUND
CAPSTONE
3 CREDITS**

Prepares the sonography student to effectively search for a job and sit for the American Registry of Diagnostic Medical Sonographers examination in their specialty.

DPM – Diesel

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**DPM 106 DIESEL FUEL
SYSTEMS
3 CREDITS**

Covers the theory of operation and repair of fuel injection systems. Provides laboratory assignments that involve disassembly, assembly, and service procedures on fuel system components.

**ECE – Early Childhood
Education**

WWW.RRCC.EDU/ECE

**ECE 101 INTRODUCTION
TO EARLY CHILDHOOD
EDUCATION
3 CREDITS**

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.

Prerequisite: A grade of B or higher in REA 060 or appropriate SAT, ACT or Accuplacer score.

**ECE 102 INTRODUCTION
TO EARLY CHILDHOOD LAB
TECHNIQUES
3 CREDITS**

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.

Co-requisite: ECE 188 Field Experience.

Prerequisite: ECE 101 and a grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability.

**ECE 103 GUIDANCE
STRATEGIES FOR CHILDREN
3 CREDITS**

Explores guidance theories, applications, goals, techniques, and factors that influence expectations, classroom management issues, and prosocial skills from birth through age eight.

Prerequisite: A grade of B or higher in REA 060 or appropriate SAT, ACT or Accuplacer score.

**ECE 111 INFANT AND
TODDLER THEORY AND
PRACTICE
3 CREDITS**

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.

Prerequisite: A grade of B or higher in REA 060 or appropriate SAT, ACT or Accuplacer score.

**ECE 112 INTRODUCTION
TO INFANT/TODDLER LAB
TECHNIQUES
3 CREDITS**

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.
Co or pre-requisite: ECE 111 or permission of instructor.

**ECE 125 SCIENCE/MATH AND
THE YOUNG CHILD
3 CREDITS**

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.

Prerequisite: ECE 101.

ECE 126 ART AND THE YOUNG CHILD 2 CREDITS

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.

Prerequisite: ECE 101.

ECE 127 MUSIC/MOVEMENT FOR THE YOUNG CHILD 1 CREDIT

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.

Prerequisite: ECE 101.

ECE 188 PRACTICUM: EARLY CHILDHOOD EDUCATION 1 CREDIT

Provides you with field experience in early childhood programs.

Co-requisite: ECE 102 Introduction to Early Childhood Lab Techniques.

ECE 191 SCHOOL AGE THEORY AND PRACTICE 3 CREDITS

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

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

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.

Prerequisite: ECE 101 and a grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability.

ECE 220 CURRICULUM DEVELOPMENT: METHODS AND TECHNIQUES 3 CREDITS

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.

Prerequisite: ECE or PSY 238 or permission of instructor.

ECE 225 LANGUAGE AND COGNITION FOR THE YOUNG CHILD 3 CREDITS

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.

Prerequisite: ECE or PSY 238 or permission of instructor.

ECE 226 CREATIVITY AND THE YOUNG CHILD 3 CREDITS

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.

Prerequisite: ECE or PSY 238 or permission of instructor.

ECE 228 LANGUAGE AND LITERACY 3 CREDITS

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.

Prerequisite: ECE 101 and a grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability.

ECE 237 THEORIES AND TECHNIQUES OF SOCIAL AND EMOTIONAL GROWTH
3 CREDITS

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.

Prerequisite: ECE or PSY 238 and ECE 220.

ECE 238 CHILD GROWTH AND DEVELOPMENT
4 CREDITS

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.

Prerequisite: ECE 101 and a grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability.

ECE 240 ADMINISTRATION OF EARLY CHILDHOOD CARE AND EDUCATION PROGRAMS
3 CREDITS

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.

Prerequisite: ECE 101 and a grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability. It is recommended that you have

completed all director certification courses before taking this course.

ECE 241 ADMIN: HUMAN RELATIONS FOR EARLY CHILDHOOD PROFESSIONS
3 CREDITS

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.

Prerequisite: ECE 101 and a grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability

ECE 256 WORKING WITH PARENTS, FAMILIES, AND COMMUNITY SYSTEMS
3 CREDITS

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.

Prerequisite: ECE 101 and a grade of C or higher in REA 090 and ENG 090 or appropriate SAT, ACT or Accuplacer score that indicates college reading ability.

ECE 260 EXCEPTIONAL CHILD
3 CREDITS

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.

Prerequisite: ECE or PSY 238 or permission of instructor.

ECE 275 SPECIAL TOPICS
1-6 CREDITS

Explores current topics, issues, and activities related to one or more aspects of the early childhood care and education profession.

ECE 280 INTERNSHIP IN EARLY CHILDHOOD EDUCATION
1-12 CREDITS

Focuses on work experience in a licensed child care and education program (30 contact hours per credit).

ECE 288 EARLY CHILDHOOD EDUCATION PRACTICUM
1-12 CREDITS

Provides students with advanced field experience opportunities in early childhood education programs. *Capston course for AAS Degree.*

ECO – Economics

WWW.RRCC.EDU/ECONOMICS

Prerequisite for all ECO courses: Students must have earned an ACT score of 18. If they do not have an 18, students must take ACCUPLACER and score 95 or higher on the Writing Skills portion of ACCUPLACER and 80 or higher on the Reading Skills portion.

ECO 101 ECONOMICS OF SOCIAL ISSUES
3 CREDITS

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**

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.

Prerequisite: MAT 121 suggested.

**ECO 202 PRINCIPLES OF
MICROECONOMICS
3 CREDITS**

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.

Prerequisite: MAT 121 suggested.

EDU – Education

WWW.RRCC.EDU/EDUCATION

**EDU 101 CRLA TUTOR
CERTIFICATION–REGULAR
1 CREDIT**

Introduces tutors to effective tutoring strategies. Topics include guidelines for tutoring; how to plan, conduct, and evaluate a productive tutoring session; how to recognize needs of students; and how to develop effective learning strategies with students.

**EDU 102 CRLA TUTOR
CERTIFICATION–ADVANCED
1 CREDIT**

Presents an extension of EDU 101 and continues the study of effective tutoring skills. Topics include working with a diverse student population, studying communication skills, and developing effective learning strategies with students.

**EDU 103 CRLA TUTOR
CERTIFICATION–MASTER
1 CREDIT**

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**

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**

Reviews the format and content for the ACT Paraeducator WorkKeys 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**

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**

Covers 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**

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**

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**

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 parent time—will be covered, both in theory and practical application.

**EDU 151 LITERACY INTERVENTION FOR PARAEducATORS
4 CREDITS**

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 for reading instruction and provide the participants with a systematic and sequential scope and sequence of the reading process.

**EDU 152 MATH INTERVENTIONS FOR PARAEducATORS
3 CREDITS**

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 FOR PARAEducATORS
3 CREDITS**

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**

Focuses on 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 diversity in the classroom, educational reform, technology as it relates to education, and considerations related to becoming a teacher in the state of Colorado.
Co-requisite: EDU 288.

**EDU 234 MULTICULTURAL EDUCATION
3 CREDITS**

Focuses on the need to recognize and understand the similarities and differences among people and to develop a respect for all individuals and groups. The course assists teachers who need to recognize the special learning needs of children from different racial, ethnic, cultural, and socio-economic groups and to encourage teachers to integrate multicultural/diversity teaching into the school curriculum. This class can also count toward teacher recertification.

**EDU 240 TEACHING THE EXCEPTIONAL LEARNER
3 CREDITS**

Focuses on the individual differences and modifications that are necessary in the educational practices of the exceptional learner. The course covers applicable law - IDEA, ADA and 504, discusses IEPs and IFSPs, and covers the major disability categories. The class also discusses the various challenges, problems and contradictions of the law and its application both in early childhood and the K-12 educational settings. Finally, the class discusses ways to work with the entire family, and not just the child.

**EDU 261 TEACHING, LEARNING, AND TECHNOLOGY
3 CREDITS**

Prepares you to integrate technology into your teaching curriculum. It enables you to design educational and training materials by incorporating instructional technology. The course explores a variety of technologies, including the computer, Internet, Smartboard, 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 288 PRACTICUM II **1 CREDIT**

Provides you with the opportunity to supplement coursework with 30 hours of practical field experience related to your educational program. You will work under the immediate supervision of experienced teachers at an education facility and with the direct guidance of an RRCC faculty member.

Co-requisite: EDU 221.

EGT – Engineering Graphics Technology

WWW.RRCC.EDU/EGT

(See CAD for more listings)

EGT 230 DRAFTING AND DESIGN I **6 CREDITS**

Develops a fundamental understanding of Single Family Residence 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 the certificate or degree program.

Prerequisite: CAD 101, CAD 102, or equivalent.

EGT 231 DRAFTING AND DESIGN II **6 CREDITS**

Examines ideas, sketches, and layouts to create working drawings of a design relative to the certificate of degree program while working within Industry Standards. Projects require full documentation details and the presentation of working drawings. 3D applications are used

and “real world” methods are taught through the course of the semester, from basic understanding to the most complex design.

Prerequisite: EGT 230 and CAD 102.

EIC – Electricity Industrial/Commercial/ Residential

WWW.RRCC.EDU/ELECTRICAL

EIC 100 ELECTRICAL CONSTRUCTIONS AND PLANNING **4 CREDITS**

Introduces the planning of electrical system installations from blueprints to the completed job and 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**

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**

Covers residential building wiring in conformance with the current National Electrical Code and local codes using non-metallic cable. The course emphasizes proper use of tools and safety.

EIC 120 ELECTRICAL INSTALLATION II **4 CREDITS**

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.

Prerequisite: EIC 110 or permission of instructor.

EIC 124 ELECTRICAL SAFETY REQUIREMENTS **1 CREDIT**

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 and covers the use of personal protective equipment.

EIC 130 NATIONAL ELECTRICAL CODE I **4 CREDITS**

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**

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**

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

Prepares you for 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

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 addresses common measuring instruments and safety.
Prerequisite: MAT 107 or equivalent.

EIC 155 AC CIRCUIT FUNDAMENTALS
4 CREDITS

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; safety procedures will be explored.
Prerequisites: EIC 150 or permission of instructor.

EIC 160 ELECTRICAL INSTRUMENTS AND MEASUREMENTS
4 CREDITS

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.
Prerequisite: EIC 150 or permission of instructor.

EIC 165 SOLID STATE DEVICES AND CIRCUITS
4 CREDITS

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.
Prerequisites: EIC150, EIC155, or permission of instructor.

EIC 166 TUNING DDC/ PROCESS CONT. LOOPS
1.5 CREDITS

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 to practice different tuning methods.

EIC 167 ELECTRICAL MAINTENANCE
4 CREDITS

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

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

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

Explores the planning and layout of large commercial and industrial electrical installations.

EIC 210 ADVANCED NATIONAL ELECTRICAL CODE
4 CREDITS

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.
Prerequisite: EIC 130, EIC 135, or permission of instructor.

**EIC 211 IECC INTERNATIONAL ENERGY CONSERVATION CODE
4 CREDITS**

IECC International Energy Conservation Code encourages energy conservation through efficiency in envelope design, mechanical systems, lighting systems and the use of new materials and techniques. This class provides an overview of critical concepts of the latest edition of the IECC and provides a basis for the correct use of the code in the design, plan review, inspection, and analysis of projects. It provides a clear understanding and correct use of the requirements identified by these basic code provisions, tables and categorizations that allow code users to apply the code in clear-cut situations, and helps to build their understanding of the intent of the code when asked to make code compliance decisions.

**EIC 215 ADVANCED CODE CALCULATIONS
4 CREDITS**

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.

Prerequisite: EIC 169 or permission of instructor.

**EIC 217 ELECTRICAL ESTIMATING/COSTING
4 CREDITS**

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**

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 systems in the laboratory. The course stresses accuracy, safety, and National Electric Code requirements.

Prerequisite: EIC 150 or permission of instructor.

**EIC 221 TROUBLE-SHOOTING CONTROL CIRCUITS
1.5 CREDITS**

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 on teaching hands-on troubleshooting.

**EIC 222 INTRO. INSTR. AND PROCESS CONTROL
1.5 CREDITS**

Investigates the theory of industrial instrumentation measurement through process control. The course includes theory and measurement and 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 223 ADVANCED INDUSTRIAL ELECTRICAL CONTROLS
4 CREDITS**

Builds on the application of electrical and electromechanical sensing/control devices; heating, motor control; conveyor drives; and other industrial applications. 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. You will be introduced to real world uses of pneumatic and electro-pneumatic control through hands-on learning; you will learn to read symbols, and understanding of component technologies. You will design advanced control systems to meet assigned conditions, use principles of relay logic to prepare correct ladder diagrams and wire up, and test and trouble-shoot systems in the laboratory. The course stresses accuracy, safety, and National Electric Code requirements.

Prerequisite: EIC 220 or permission of instructor.

**EIC 224 UNDERSTANDING PLC'S
1.5 CREDITS**

Improves your 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**

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. It enables you to design, implement, and test control systems in the laboratory to meet specifically-assigned control problems and also emphasizes accuracy, safety and National Electrical Code requirements.

Prerequisites: EIC 150 and 220 or permission of instructor.

EIC 226 PLC CONTROLLERS ADVANCED 4 CREDITS

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.

Prerequisite: EIC 225 or permission of instructor.

EIC 227 MECHANICAL DRIVES 1.5 CREDITS

Covers the basics of mechanical drives including chain drives, belt drives, bushings, couplings, gear drives, bearings, and lubrication. It includes study of 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

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 230 INSTRUMENTATION & CONTROLS I 4 CREDITS

Introduces the basic concepts, principles, equipment, and components of instrumentation and control systems found in the process and energy supply industries. The fundamental process variables of pressure, temperature, level, flow and physical properties will be presented. Control loop structure and function will be introduced. The function and operation of a proportional-integral-derivative (PID) controller will be introduced. You will assemble and operate basic control loops in a laboratory setting.

EIC 231 ELECTRO-PNEUMATIC TRAINING 1.5 CREDITS

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 will learn to apply simple gas laws, reading of symbols, and understanding of component technologies.

EIC 234 HIGH VOLTAGE ELECT. SAFETY 1.5 CREDITS

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

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

Covers design, installation, documentation, testing, and codes. The course focuses on advanced layout and principles involved in fire alarm system design and construction, allowing you to test for NICET II certification.

Prerequisite: EIC 240.

EIC 242 NATIONAL FIRE ALARM CODE 4 CREDITS

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 261 PROJECT MANAGEMENT
1 CREDIT

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, analysis of 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 264 CABLING SYSTEM GROUNDING AND BONDING
1 CREDIT

Prepares you for 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 275 SPECIAL TOPICS
0.5-12 CREDITS

Provides you with a vehicle to pursue in-depth exploration of special topics of interest.

Prerequisite: Permission of instructor.

EIC 282 INTERNSHIP
0.5-12 CREDITS

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.

Prerequisite: Permission of instructor.

EIC 285 INDEPENDENT STUDY
0.5-12 CREDITS

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

EMP – Emergency Management and Planning

[WWW.RRCC.EDU/EMPLAN](http://www.rrcc.edu/emplan)

EMP 101 PRINCIPLES OF EMERGENCY MANAGEMENT
3 CREDITS

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

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

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

Provides the knowledge and skills to manage and operate an EOC during crisis situations.

EMP 109 INCIDENT COMMAND SYSTEM
3 CREDITS

Explores the dynamics of managing major emergency incidents and examines the National Incident Management System.

EMP 240 LEADERSHIP AND INFLUENCE
3 CREDITS

Examines the dynamics of leadership techniques as they apply to emergency and disaster situations.

EMP 241 DECISION MAKING AND PROBLEM SOLVING
3 CREDITS

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

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

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

Focuses on individual and group decisions based on a model problem-solving process.

**EMP 280 – BUSINESS
EMERGENCY MANAGEMENT
3 CREDITS**

Develops contingency planning and emergency response skills required by private sector companies.

**EMP 291 - BASIC PUBLIC
INFORMATION OFFICER
3 CREDITS**

Provides you an opportunity to practice and expand on public information skills in a crisis environment.

**EMS – Emergency
Medical Services**

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**EMS 115 FIRST RESPONDER
3 CREDITS**

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**

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.

Prerequisites: Age 18 by the first day of class, high school diploma or GED, assessment scores at the college level in reading and writing.
Corequisite: EMS 170.

**EMS 126 EMERGENCY
MEDICAL TECHNICIAN –
BASIC REFRESHER
2 CREDITS**

Provides required didactic and skills review for renewing EMT students.
Prerequisites: Current or less than 6 months expired Colorado or NREMT EMT Basic certification.

**EMS 130 EMERGENCY
MEDICAL TECHNICIAN
INTRAVENOUS THERAPY
2 CREDITS**

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.
Prerequisite: Current Colorado State EMT Basic certification; permission of instructor.

**EMS 150 PEDIATRIC
EDUCATION FOR
PREHOSPITAL
PROFESSIONALS
1 CREDIT**

Provides the student with core knowledge and skills necessary to provide emergency care to the pediatric patient.
Prerequisite: EMT-Basic or higher certification.

**EMS 154 TRAUMA LIFE
SUPPORT
1 CREDIT**

Provides the student with information and skill practice to treat trauma patients in the prehospital environment.
Prerequisite: EMT-Basic or higher certification.

**EMS 155 MEDICAL LIFE
SUPPORT
1 CREDIT**

Provides the student with information and skill practice to assess and treat medical patients in the prehospital environment.
Prerequisite: EMT-Basic or higher certification.

**EMS 162 WILDERNESS EMT
UPGRADE
2 CREDITS**

Provides the student with information and skill practice to apply their assessment and treatment skills to patients in a remote setting.
Prerequisite: EMT-Basic or higher certification.

**EMS 170 EMT-BASIC CLINICAL
1 CREDIT**

Provides the EMT student with the clinical experience required.
Prerequisite: Permission of instructor.
Co requisite: EMS 125 or 126.

**EMS 180 EMT-CLINICAL
INTERNSHIP
1-6 CREDITS**

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 to develop an understanding of the role and responsibilities of the EMT-Basic.
Prerequisite: Current Colorado State EMT Basic certification; permission of instructor.

**EMS 220 PARAMEDIC REFRESHER
3 CREDITS**

Updates the Paramedic in four specific areas of prehospital emergency care. It includes trauma, medical, Advanced Life Support (ALS) and elective topics focused on ancillary issues in EMS.

Prerequisite: Current or less than 6 months expired Colorado or NREMT Paramedic certificate.

THE FOLLOWING COURSES ARE OFFERED IN CONJUNCTION WITH HOSPITAL-BASED PARAMEDIC PROGRAMS.

Only students accepted into the Hospital-based Paramedic programs may register for them. Prerequisites for these 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**

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**

Serves as the lab experience to coincide with EMS 225 topics.

**EMS 227 PARAMEDIC SPECIAL CONSIDERATIONS
3 CREDITS**

Focuses on a comprehensive study of Advanced Life Support Practice.

**EMS 228 PARAMEDIC SPECIAL CONSIDERATIONS LAB
2 CREDITS**

Serves as the lab experience for those students enrolled in EMS 227.

**EMS 229 PARAMEDIC PHARMACOLOGY
3 CREDITS**

Focuses on a comprehensive study of emergency pharmacology.

**EMS 230 PARAMEDIC PHARMACOLOGY LAB
2 CREDITS**

Serves as the required lab course in the paramedic education program.

**EMS 231 PARAMEDIC CARDIOLOGY
5 CREDITS**

Addresses cardiology topics as presented in the National Standard Curriculum for paramedics.

**EMS 232 PARAMEDIC CARDIOLOGY LAB
1 CREDIT**

Incorporates a hands-on application of principles of cardiac care in the pre-hospital environment.

**EMS 233 PARAMEDIC MEDICAL EMERGENCIES
4 CREDITS**

Focuses on a comprehensive study of adult and pediatric medical emergencies.

**EMS 234 PARAMEDIC MEDICAL EMERGENCIES LAB
1 CREDIT**

Focuses on a clinical study of adult and pediatric medical emergencies.

**EMS 235 PARAMEDIC TRAUMA EMERGENCIES
4 CREDITS**

Focuses on a comprehensive study of adult and pediatric trauma emergencies.

**EMS 236 PARAMEDIC TRAUMA EMERGENCIES LAB
1 CREDIT**

Serves as a lab presenting various acute trauma scenarios.

**EMS 237 PARAMEDIC INTERNSHIP PREPARATORY
2 CREDITS**

Reviews concepts and techniques used in the pre-hospital setting.

**EMS 280 PARAMEDIC INTERNSHIP I
6 CREDITS**

Serves as the preceptor/internship program for paramedic students.

**EMS 281 PARAMEDIC INTERNSHIP II
6 CREDITS**

Serves as the continuation of EMS 280, preceptor program for paramedic students.

ENG – English

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**ENG 030 BASIC WRITING SKILLS
2 CREDITS**

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**

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.

Prerequisite: ENG 030 or appropriate ACCUPLACER score.

ENG 090 BASIC COMPOSITION 3 CREDITS

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.

Prerequisite: ENG 060 or appropriate ACCUPLACER score.

ENG 119 RESUMÉS AND COVER LETTERS 1 CREDIT

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

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.

Prerequisite: A grade of C or higher in ENG 090, ESL 053, or appropriate SAT, ACT or ACCUPLACER score.

ENG 122 ENGLISH COMPOSITION II 3 CREDITS

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.

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

ENG 131 TECHNICAL WRITING 3 CREDITS

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.

Prerequisite: A grade of C or higher in ENG 090, ESL 053, or appropriate SAT, ACT or ACCUPLACER score.

ENG 132 TECHNICAL WRITING II 3 CREDITS

Expands and refines the objectives of ENG 131, emphasizing formal presentations, both written and oral.

Prerequisites: Grade of C or better in ENG 131 (or its equivalent) or permission of instructor.

ENG 205 TECHNICAL EDITING 3 CREDITS

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

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.

Prerequisites: Either co-enrollment in ENG 121 or a grade of C or better in ENG 121.

ENG 226 FICTION WRITING 3 CREDITS

Teaches techniques for creating fiction, including the study and appreciation of the language and forms of the short story.

Prerequisite: A grade of C or better in ENG 221 or permission of instructor.

ENG 227 POETRY WRITING 3 CREDITS

Teaches techniques for creating poems, including study of figurative language, forms, and sound patterns of poetry.

Prerequisite: A grade of C or better in ENG 221 or permission of instructor.

ENG 230 CREATIVE NONFICTION 3 CREDITS

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 your own nonfiction in a supportive, constructive setting.

Prerequisite: A grade of C or better in ENG 221 or permission of instructor.

ENG 231 LITERARY MAGAZINE 3 CREDITS

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.

Prerequisite: A grade of C or better in ENG 221 or permission of instructor.

ENT – Engineering Technology

ENT 106 - PRINT READING FOR MANUFACTURING 3 CREDITS

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

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

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

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.

ENY 102 BUILDING ENERGY AUDIT TECHNIQUES 3 CREDITS

Teaches the principles of building energy audit techniques to include diagnostic software. During the course the student will perform an energy audit. As a result of the audit, he/she will be able to recommend application of the most appropriate energy-saving treatments such as insulation, windows, appliances and HVAC equipment.

ENY 120 THERMAL INSTALL 4 CREDITS

Teaches the student about solar thermal panels and installation techniques. The student will apply the principles of solar energy, site analysis, cost vs. payback, sizing, energy audit, and solar system design into a project.

ENY 121 THERMAL INSTALL 2 & CONTROLS 4 CREDITS

A continuation of the skills learned in ENY 120 with additional labs to help reinforce the learning process. The student will learn additional control techniques and troubleshooting will be a major part of the class.

ENY 130 SOLAR PV GRID-TIE 2 CREDITS

Teaches the student how to layout an installation for maximum performance using standard industry tools such as a Solar Path Finder. Conduit Bending, wiring, roof penetrations are also part of the course.

ENY 131 ADVANCED PV INSTALL 3 CREDITS

Exposes the student to additional labs having to do with panel racking and installation. Battery storage and usage calculations for off grid housing will be part of the course.

ENY 132 NABCEP PREP 1 CREDIT

Provides the student with a review of what might be on the NABCEP Entry Level certification test.

ENY 153 RENEWABLE ENERGY CONSTRUCTION 4 CREDITS

Introduces solar construction techniques, terminology and green building construction materials in detail. Covers moisture and air quality in tight construction as well as an overview of the building shell and interior walls. This course will meet LEED Green Associate education pre requisite.

ENY 230 TROUBLESHOOTING 3 CREDITS

Teaches the student the trouble areas they might encounter while servicing a PV system.

ENY 231 CONTRACTORS CLASS 4 CREDITS

Helps students to understand the electrical code 690. Permitting, Excel rebate forms and sample forms from local jurisdictions will be explored.

ENY 235 ENERGY SYSTEMS DESIGN
3 CREDITS

Focuses on integration of energy system functions in a typical building including: codes and standards; energy economics; electrical system organization; waste heat recovery; utility system optimization; HVAC building system optimization

ENY 240 ESTIMATING
4 CREDITS

A capstone class for the student "bringing it all together." The student will be required to bid a job to include all materials properly priced with labor, sub contracting, sales tax and all other required fees in a package that will provide a quality job to the customer while showing a profit.

ENY XXX INTRODUCTION TO WIND ENERGY
3 CREDITS

Students are introduced to the fundamentals of electrical power generation from wind energy. Students are introduced to the working conditions and requirements for wind power technicians. Students identify the function of basic wind turbine equipment and systems. The governmental policies and guidelines are introduced.

ESL – English as a Second Language

**WWW.RRCC.EDU/
INTERNATIONAL**

ESL 012 INTERMEDIATE PRONUNCIATION
3 CREDITS

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.

Prerequisite: appropriate placement score.

ESL 033 ADVANCED CONVERSATION
3 CREDITS

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.

Prerequisite: appropriate placement score.

ESL 043 ADVANCED READING
3 CREDITS

Prepares you for academic reading assignments. It assists you to read more accurately and critically thought the development of vocabulary knowledge and reading skills. It introduces research skills.

Prerequisites: completion of Intensive English Program or appropriate placement score.

ESL 053 ADVANCED COMPOSITION
3 CREDITS

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.

Prerequisites: completion of Intensive English Program or appropriate ACCUPLACER score.

ESL 091 BASIC INTENSIVE ENGLISH
8 CREDITS

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.

Prerequisite: appropriate assessment score.

ESL 092 HIGH BASIC INTENSIVE ENGLISH
8 CREDITS

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.

Prerequisite: ESL 091 or appropriate assessment score.

ESL 093 LOW INTERMEDIATE INTENSIVE ENGLISH
8 CREDITS

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.

Prerequisite: ESL 092 or appropriate assessment score.

ESL 094 INTERMEDIATE INTENSIVE ENGLISH
8 CREDITS

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.

Prerequisite: ESL 093 or appropriate assessment score.

ESL 095 HIGH INTERMEDIATE INTENSIVE ENGLISH
8 CREDITS

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.

Prerequisite: ESL 094 or appropriate assessment score.

ESL 096 LOW ADVANCED INTENSIVE ENGLISH 8 CREDITS

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.

Prerequisite: ESL 095 or appropriate assessment score.

ESL 275 SPECIAL TOPICS: SEMI-INTENSIVE ESL 6 CREDITS

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.

Prerequisites: appropriate assessment score.

ESL 276 SPECIAL TOPICS: IBT TOEFL PREPARATION 4 CREDITS

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.

Prerequisite: successful completion of Intensive English Program or appropriate assessment score.

EST – Esthetician

**WWW.RRCC.EDU/
WARRENTech**

EST 110 INTRODUCTION TO FACIALS AND SKIN CARE 3 CREDITS

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

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

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

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

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.

EVT – Environmental Technology – Natural Resource Management

PENDING APPROVAL

EVT 100 SUSTAINABILITY IN ENVIRONMENTAL TECHNOLOGY 3 CREDITS

Provides you with an in-depth study of the environmental regulatory industry as it applies to air, water, soils and solids.

The student is instructed in areas of investigations, reporting, assessments and compliance strategy programs for industrial, commercial and environmental industries. This course is designed as an introduction to environmental issues around the world and offers suggestive insight to career development.

EVT 110 ATMOSPHERIC ENVIRONMENTAL APPLICATION 4 CREDITS

A complete study in atmospheric monitoring including weather patterns, temperature, storm projection and it's affects on airborne discharges from industry, commercial and domestic sources. Students are instructed on air

sampling techniques, data entry and modeling techniques as well as compliance strategies and regulations.

**EVT 120 SOIL AND SOLID WASTE STUDIES
4 CREDITS**

Covers the purpose, components regulatory disposal requirements for solid wastes as well as soil sampling techniques, data interpretation. The student will also study types of soils, solid wastes and recycling programs available in the United States. Additionally, proper disposal programs and land reuse development. Superfund sites are investigated to use a model for study which include mining operations and hazardous disposal sites.

**EVT 140 REGULATORY STUDIES
4 CREDITS**

A detailed study with the United States Environmental Protection Agency's regulatory system including its operations, research, compliance management system and regulatory implementation. The student will become fully versed in terminology, legal procedures, legislation and Acts that are used in today's environmental enforcement and control efforts including the Clean Water Act, Soils Management and Air Discharge Requirements as well as current goal setting programs.

**EVT 150 GLOBAL ENVIRONMENTAL AWARENESS
4 CREDITS**

A comprehensive study of global environmental issues that are of concern to individual country development efforts. Studies include China, India, the United States, Europe, Antarctica and the Western Pacific. The course also presents various environmental programs

that are being used to assist with social and environmental problems including those using multiple country and resource programs.

**EVT 200 ENVIRONMENTAL ENGINEERING
4 CREDITS**

An entry level engineering course that is designed to develop engineering skills and considerations towards environmental projects. Topics include, assessment, plotting, planning basic design and process development. Engineering basics are instructed in water treatment and storage facilities, power generation facilities and solid waste disposal facilities.

(Students who participate in this course must have completed ENV 100, 110 and 120.)

**EVT 210 ENERGY SCIENCE AND TECHNOLOGY
4 CREDITS**

A general study course on various alternative energy developments including wind, solar and hydroelectric facilities. The course also includes case studies of bio fuels, waste management and gas generation from waste facilities. Topics include design, development, application, environmental impact and costs analysis of alternative energies. The student gains insight to the many alternative energy options available and can associate these options to direct application as it applies to general industry and commercial facilities that must rely on energy for production and manufacturing.

FIW – Fine Woodworking

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**FIW 100 FUNDAMENTALS OF WOODWORKING
4 CREDITS**

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**

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**

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

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

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

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.

Prerequisite: FIW 100, FIW 101, FIW 109 or permission of instructor.

FIW 108 TOOLMAKING AND JIGS 4 CREDITS

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.

Prerequisite: FIW 100, FIW 101, FIW 109 or permission of instructor.

FIW 109 INTRODUCTION TO CABINETMAKING 4 CREDITS

Introduces 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

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

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.

Prerequisite: FIW 100, FIW 101, FIW 109 or permission of instructor.

FIW 118 LATHE TURNING 4 CREDITS

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

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.

Prerequisite: FIW 118 or permission of instructor

FIW 121 INTERMEDIATE TURNING II 4 CREDITS

Teaches you how to create unique turning through the use of finish applications, burning, inlays, and texturing.

Prerequisite: FIW 119 or permission of instructor.

FIW 122 WOOD CARVING 4 CREDITS

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

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

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.

Prerequisites: FIW 100, FIW 101, FIW 109 or permission of instructor

FIW 200 VENEERING AND MARQUETRY

4 CREDITS

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.

Prerequisites: FIW 100, FIW 101, FIW 109 or permission of instructor.

FIW 201 JOINERY

4 CREDITS

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.

Prerequisite: FIW 100, FIW 101, FIW 109 or permission of instructor.

FIW 205 TABLEMAKING

4 CREDITS

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.

Prerequisite: FIW 201.

FIW 206 CHAIRMAKING

4 CREDITS

Utilizes chair construction to examine some of the alternatives of machine and hand-tool construction as illustrated by seat shaping through router surfacing vs. inshave use, for example. Spindle turnings, spokes have 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.

Prerequisite: FIW 201.

FIW 208 FURNITURE REPAIR

4 CREDITS

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.

Prerequisites: FIW 100 (or equivalent) and FIW 125.

FIW 209 CABINETMAKING

4 CREDITS

You 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.

Prerequisites: FIW 109, FIW 100, FIW 101 or permission of instructor.

FIW 210 BENDING AND LAMINATIONS

4 CREDITS

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.

Prerequisites: FIW 100, FIW 101, FIW 109 or permission of instructor.

FIW 211 SHOP CARPENTRY

4 CREDITS

For the non-site, shop carpenter and includes jig and patternmaking; stationary power tool maintenance

and adjustment; machining of woods; and techniques unique to shops, cabinetmakers and mill workers.

Prerequisite: Permission of instructor.

FIW 213 FURNITURE MAKING

4 CREDITS

Teaches furniture design, construction techniques and material selection.

Prerequisite: FIW 201.

FIW 215 ADVANCED JOINERY

4 CREDITS

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.

Prerequisites: FIW 201 and FIW 206.

FIW 217 ADVANCED CABINETMAKING

4 CREDITS

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.

Prerequisite: FIW 209.

FIW 219 WOODWORKING LAB

4 CREDITS

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.

Prerequisite: FIW 100 or FIW 109.

FIW 220 ADVANCED FURNITURE AND CABINET CONSTRUCTION **4 CREDITS**

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.

Prerequisite: FIW 213 or FIW 209.

FIW 250 PERIOD FURNITURE REPRODUCTION **4 CREDITS**

Involves researching and selecting a period and style of furnitureraaking 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.

Prerequisite: FIW 201.

FIW 275 SPECIAL TOPICS **0 – 6 CREDITS**

Provides you with a vehicle to pursue in depth exploration of special topics of interest

FIW 280 TECHNICAL PROJECT **4 CREDITS**

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.

Prerequisite: Permission of the instructor.

FIW 285 INTERNSHIP **4 CREDITS**

Provides you with the opportunity to apply your skills in a real woodworking environment.

Prerequisite: Permission of the instructor.

FRE – French

WWW.RRCC.EDU/LANGUAGES

FRE 101 CONVERSATIONAL FRENCH I **3 CREDITS**

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**

Continues the sequence for beginning students who wish to understand and speak French. It covers basic conversational patterns, expressions, and grammar.

Prerequisite: FRE 101 or instructor permission.

FRE 111 FRENCH LANGUAGE I **5 CREDITS**

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**

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.

Prerequisite: FRE 111 or instructor permission.

FRE 211 FRENCH LANGUAGE III **3 CREDITS**

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.

Prerequisite: FRE 112 or instructor permission.

FRE 212 FRENCH LANGUAGE IV **3 CREDITS**

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

Prerequisite: FRE 211 or instructor permission.

FST – Fire Science Technology

WWW.RRCC.EDU/FIRE

FST 100 FIREFIGHTER I 9 CREDITS

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.

Prerequisite or Corequisite: FST 102 strongly recommended before taking Fire Academy: EMS 125/170 (EMT-Basic) and FST 160 (CPAT Test Prep).

FST 102 INTRODUCTION TO FIRE SCIENCE AND SUPPRESSION 3 CREDITS

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

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. This course parallels NFPA 1500 Standards

FST 104 FIRE PROTECTION SYSTEMS 3 CREDITS

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.

Prerequisites: FST 100 and 105, or permission of instructor.

FST 105 BUILDING PLANS AND CONSTRUCTION 3 CREDITS

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

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.

FST 107 HAZARDOUS MATERIALS AWARENESS OPERATIONS 3 CREDITS

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

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

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

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

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

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

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

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

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
3 CREDITS

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 160 CANDIDATE PHYSICAL ABILITIES TEST PREP COURSE
3 CREDITS

Prepares students for the job of a firefighter as well as the testing requirements to test for CPAT. The tools for all classes will be fire service tools, such as, sledge hammer, hose, nozzle, ladders, pike pole, power saws, and rescue dummy. The course will include the basic fire skills of rescue, hose lay, equipment movement, ladder raise and extend, forcible entry, search, and ceiling breach. The course also includes aerobic and strength training to assist student in passing CPAT.

FST 175 SPECIAL TOPIC
1-6 CREDITS

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.

Prerequisite: Permission of instructor.

FST 180 INTERNSHIP
1-6 CREDITS

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.

Prerequisite: Permission of program advisor.

FST 201 INSTRUCTIONAL METHODOLOGY (FIRE INSTRUCTOR I)
3 CREDITS

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.

Prerequisites: FST 100 and 102, or permission of instructor.

FST 202 FIREFIGHTING STRATEGY AND TACTICS
3 CREDITS

Covers firefighting strategy and tactics, methods of fire attack, fire behavior, building construction, and pre-fire planning.

Prerequisites: FST 102, 104, and 107, or permission of instructor.

FST 203 FIRE SCIENCE HYDRAULICS
3 CREDITS

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.

Prerequisites: FST 105 and MAT 107.

FST 204 FIRE CODES AND ORDINANCES
3 CREDITS

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.

Prerequisites: FST 102, 104, 105, 106 or permission of instructor.

FST 205 FIRE CAUSE DETERMINATION 3 CREDITS

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

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.

Prerequisites: ENG 121; FST 102, 202, or permission of instructor.

FST 207 FIREFIGHTING STRATEGY AND TACTICS II 3 CREDITS

Focuses on tactics and strategies associated with transportation emergencies and fires, high-rise fires, below-ground incidents, confined space emergencies, and special rescue situations.

Prerequisite: FST 202.

FST 251 FIRE SERVICE AND THE LAW 3 CREDITS

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

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.

Prerequisites: FST 100, 102, and 205, or permission of instructor.

FST 253 FIRE GROUND ORGANIZATION AND COMMAND (NATIONAL INCIDENT MANAGEMENT SYSTEM) 3 CREDITS

Focuses on fire ground management, resource availability, management and deployment, National Incident Management System and all related components, communications, problem solving, and table top exercises.

Prerequisite: FST 202.

FST 254 HAZARDOUS MATERIALS TECHNICIAN 3 CREDITS

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.

Prerequisite: FST 107.

FST 255 FIRE SERVICE MANAGEMENT 3 CREDITS

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.

Prerequisites: FST 202 and FST 206, or permission of instructor.

FST 256 FIRE SERVICE EMS MANAGEMENT 3 CREDITS

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

Focuses on the operations of volunteer and combination fire departments; compliance with standards and ordinances; funding and budgeting; recruiting, hiring, and retaining employees; organizational planning; and public relations.

Prerequisite: FST 206.

FST 258 WILDLAND FIRE INCIDENT MANAGEMENT AND ORGANIZATION 3 CREDITS

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.

Prerequisite: FST 152 or previous certified red card training.

FST 259 WILDLAND FIREFIGHTING 3 CREDITS

Focuses on management of uncontrolled fire burning, urban/wildland interface, strategy and tactics used in controlling wildland fires, prevention methods, and incident command practices.

FST 260 INTERMEDIATE FIRE BEHAVIOR S290 2 CREDITS

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

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.

Prerequisites: Firefighter II in the National Wildfire Coordinating Group and ability to perform wildland firefighting tasks.

FST 262 WILDLAND FIRE BEHAVIOR 3 CREDITS

Gives students 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.

Prerequisites: Firefighter II in the NWCG system and ability to perform wildland firefighting tasks in the field.

FST 263 POWERSAWS S212 2 CREDITS

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.

Prerequisites: Firefighter Type II in National Wildfire Coordinating Group and ability to perform chainsaw operations.

FST 264 HELICOPTER CREW S217 2 CREDITS

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

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.

Prerequisite: FST 152 or equivalent, Intermediate Fire Behavior; qualification as a Squad Boss/Firefighter Type 1.

FST 266 CREW BOSS S230 2 CREDITS

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.

Prerequisite: FST 260 or completion of S290 Intermediate Fire Behavior, squad boss qualification.

FST 270 BASIC AIR OPS S270 1 CREDIT

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.

Prerequisites: FST 202 and FST 206 or permission of instructor.

FST 275 SPECIAL TOPICS- FIRE ANALYSIS THESIS 1-4 CREDITS

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.

Prerequisite: Permission of instructor.

FST 285 INDEPENDENT STUDY 1-6 CREDITS

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor. The product of this course is an applied research project that will not only benefit the student but the student's organizational skills as well.

Prerequisite: Permission of instructor.

GEO – Geography

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GEO 105 WORLD REGIONAL GEOGRAPHY 3 CREDITS

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

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.

GEO 111 PHYSICAL GEOGRAPHY: LANDFORMS 4 CREDITS

Introduces the principles of landforms as a major aspect of our natural environment. The course incorporates an integrated process of lecture, discussion, and laboratory assignments. GEO 111 may be transferred to colleges and universities as a science credit. The course is offered in the fall.

GEO 112 PHYSICAL GEOGRAPHY: WEATHER & CLIMATE 4 CREDITS

Introduces the principles of meteorology, climatology, world vegetation patterns, and world regional climate classification. The course incorporates an integrated process of lecture, discussion, and laboratory assignments. The course is offered in the spring.

GEO 165 HUMAN ECOLOGY 3 CREDITS

Provides a current outlook for the global environment, describing the threats imposed on different natural ecological systems. The course enables the student to develop a set of intellectual tools and ways of thinking about the environment to evaluate for themselves how serious a given environmental problem will be.

GED – General Education

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GED 011 GED PREPARATION 1 CREDIT

GED 011 presents material for students who need to prepare for the GED tests: Language Arts, Writing; Language Arts, Reading; Mathematics; Science; and Social Studies.

GER – German

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GER 101 CONVERSATIONAL GERMAN I 3 CREDITS

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

Continues the sequence for students who wish to understand and speak German. It covers basic patterns, expressions, and grammar.
Prerequisite: GER 101 or permission of instructor.

GER 111 GERMAN LANGUAGE I 5 CREDITS

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

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.

Prerequisite: GER 111 or instructor permission.

**GER 211 GERMAN LANGUAGE III
3 CREDITS**

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.

Prerequisites: GER 112 or instructor permission.

**GER 212 GERMAN LANGUAGE IV
3 CREDITS**

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.

Prerequisite: GER 211 or instructor permission.

GEY – Geology

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**GEY 111 PHYSICAL GEOLOGY
4 CREDITS**

Studies the materials of the earth, its structure, surface features, and the geologic processes involved in its development.

**GEY 116 GEMS, CRYSTALS,
AND MINERALS
1 CREDIT**

Introduces basic information on the definition, formation, identification, and uses of gems, crystals, and minerals.

**GEY 118 ROCK AND MINERAL
IDENTIFICATION
1 CREDIT**

Introduces basic information on the definition, formation, identification, and uses of rocks and minerals.

**GEY 119 THE GREAT ICE AGE
1 CREDIT**

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
4 CREDITS**

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.

Prerequisite: GEY 111.

**GEY 125 CONTINENTAL DRIFT
1 CREDIT**

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**

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**

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**

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**

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.

Prerequisites: Permission of Instructor.

**GEY 208 GEOLOGY FIELD TRIP
1-5 CREDITS**

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.

Prerequisites: Permission of Instructor.

GIS – Geographic Information Systems

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GIS 101 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS 3 CREDITS

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

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. The course is generally taught in the fall.

GIS 210 INTERMEDIATE GIS 3 CREDITS

Builds upon the spatial analysis principles and concepts of GIS 101. Students work with more advanced analytical tools and develop skills in spatial problem solving. The course is generally taught in the spring.

HEM – Heavy Equipment Mechanics

HEM 110 GASOLINE AND POWER PLANTS AND ELECTRICAL SYSTEMS 5 CREDITS

Focuses on construction, operation, parts identification and service procedure for two and four cycle engines, cooling systems, lubrication, clutches, and electrical systems. Includes instruction on special equipment such as micrometers, cylinders gauges, valve grinding machines, electrical testing equipment, and various other necessary power tools.

HEM 113 DIESEL FUEL SYSTEMS 3 CREDITS

Focuses on the study of fuel injection systems of both gasoline and diesel engines. Covers diagnostics, service, and standard repair techniques.

HEM 161 HEAVY EQUIPMENT LABORATORY 4 CREDITS

Incorporates work on equipment pertaining to the concurrent theory classes with practical application on available equipment.

HEM 210 HYDRAULICS AND TRANSMISSIONS 3 CREDITS

Focuses on the study of hydraulic systems and power flow from the engine to the drive wheels or tracks. Provides the fundamentals of pumps, cylinders, valves, transmissions, clutches, and related components. Covers the proper uses of testing equipment and troubleshooting of systems.

HEM 211 FINAL DRIVES AND BRAKES 2 CREDITS

Focuses on the study of single and double final drives and brake systems on both light and heavy duty equipment. Covers diagnostics, service and repair techniques.

HEM 268 HEAVY EQUIPMENT LABORATORY I 4 CREDITS

Incorporates work on equipment pertaining to the concurrent theory classes with practical application of available equipment.

HEM 269 HEAVY EQUIPMENT LABORATORY II 4 CREDITS

Incorporates actual work experience on equipment pertaining to the concurrent theory classes with practical application of available equipment.

HHP – Holistic Health Professional

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THE PREREQUISITE FOR ALL HHP COURSES IS A GRADE OF C OR BETTER IN ENGLISH 121 OR APPROPRIATE SAT, ACT, OR ACCUPLACER SCORE .

HHP 100 COMPLEMENTARY HEALING METHODS 1 CREDIT

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 INTRODUCTION TO CIRCLE OF HEALING
1 CREDIT**

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**

Explores the scientific research surrounding mind-healing as well as enhancing mind-body communication skills.

**HHP 105 PHYTOTHERAPY AND DISEASE PREVENTION
1 CREDIT**

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 107 MANAGING LIFE'S STRESSES
0.5 CREDIT**

Enables you to work with energy, confidence and enthusiasm in your life by learning specific skills that will give you control over stressful situations or people in your life. This experiential class is designed for all who are interested in a higher quality of life and want to reach their full potential. Learn how to relax quickly, improve self-image, improve concentration, and how to control your worry. You can experience freedom from old patterns that create stress, fatigue and restricting beliefs.

**HHP 108 AROMATHERAPY
0.5 CREDITS**

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 110 NEUROLINGUISTIC PROGRAMMING
0.5 CREDITS**

Familiarizes students with the core presuppositions of NLP, explores conscious and unconscious communications on a structural level, and experimentally teaches how non-verbal and verbal communications can allow one to effectively establish (and maintain) rapport with others. Students will discover how people get "stuck" and how to get themselves and others "unstuck," culminating with an elegant change pattern; proven to be as useful with intrusive memories as it is with accessing new choices.

**HHP 111 HERBOLOGY I
1 CREDIT**

Explores the pharmacokinetics and composition of herbs and their effect on the body systems. 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. The course focuses on the habitat, harvesting, storage, and usage of a select group of herbs.

**HHP 122 QIGONG
1 CREDIT**

Emphasizes the application of the 18 soft exercises found in Qigong to help relax, increase strength, agility, and vitality while calming the mind.

**HHP 125 FELDENKRASIS AWARENESS THROUGH MOVEMENT
0.5 CREDITS**

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**

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 142 INTRODUCTION TO TRADITIONAL CHINESE MEDICINE
3 CREDITS**

Introduces the theories and practice of Traditional Chinese Medicine (TCM), an ancient medical art. Basic theories are discussed, differentiation skills are practiced and treatment modalities are demonstrated.

HHP 145 DIGESTIVE WELLNESS
1 CREDIT

Provides you with information on nutritional and herbal self-care treatments. Digestive disorders will be discussed such as acid reflux, Crohns, heartburn, hernia, gas, and bloating.

HHP 161 MEDITATION FOR HEALING
1 CREDIT

Incorporates the practice of fundamental techniques for training your mind to be quiet and peaceful; to focus your thoughts on what you choose; to stimulate the Mind-Body conversation to enhance your own health.

HHP 164 INTRODUCTION TO HAND REFLEXOLOGY
1 CREDIT

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

Provides you with knowledge and skill in foot anatomy, basic hand stroke, and foot reflex points. Reflexology is a gentle art that holistically facilitates opening the channels for healing energy to circulate to all parts of the body. Benefits include stress reduction and deep relaxation, improved circulation, cleansing of body toxins and impurities, revitalization of energy and preventative health care.

HHP 169 INTRODUCTION TO HEALING HANDS AND FEET
1 CREDIT

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 into practice. Seven major energy charkas, how they affect one's own self-healing, and the four energy fields that surround people will be explored.

Prerequisite HHP 164 or 166.
Corequisite HHP188.

HHP 188 REFLEXOLOGY PRACTICUM
1 CREDIT

Provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

Corequisite HHP 169.

HHP 190 CRYSTAL AND MINERAL USAGE IN HEALTH CARE
0.5 CREDITS

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 204 APPLIED AROMATHERAPY
3 CREDITS

Examination of aromatherapy will be implemented from a holistic view. How different practitioners use this healing art will also be studied, including aromatherapists, medical practitioners, nurses, counselors, psychologists, massage therapists,

herbalists, and manufacturers of perfume. Current research on essential oils will be covered, and how this research is advancing the practical applications of aromatherapy. This course will also explore holistic factors in aromatherapy, among them the spiritual, biological, social, and environmental sectors.

HHP 211 HERBOLOGY II
2 CREDITS

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.

Prerequisite: HHP 111.

HHP 212 NEUROLINGUISTIC PROGRAMMING II
0.5 CREDITS

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. NLP II offers further integration of the rapport skills taught in NLP I and moves on toward setting "well-formed" outcomes for any and all contexts. Students will discover why many goals do not manifest and differences that can make the difference. Students will explore how the mind (literally) codes experience and how it can be recorded. Additionally, a powerful pattern change is taught, which allows a person to stop unwanted habits or create desired behaviors.

HHP 213 SPIRITUAL CARE
0.5 CREDITS

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**

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**

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**

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**

Provides basic understanding of the human energy system from an Asian perspective. Jin Shin is non-invasive, performed with light touch on various 'acupoints' 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**

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.

Corequisite HHP 225.

**HHP 225 EXPANDED CONCEPTS OF MASSAGE
1 CREDIT**

Builds on techniques you learned during HHP 224 Introduction to Massage. It includes application of massage techniques with special populations and it also examines related basic therapeutic approaches such as hydrotherapy and acupressure. Considerations for developing professional practice are also addressed.

**HHP 227 COMMUNICATION SKILLS
0.5 CREDITS**

Assists you in acquiring essential skills in communication, conflict resolution, negotiation, and team building.

**HHP 228 SOLUTION FOCUSED PERSONAL COACHING
0.5 CREDITS**

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**

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**

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 235 MIND, BODY HEALING AND HEALTH
3 CREDITS**

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**

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

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

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

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.

Prerequisite: HHP 242.

HHP 244 HOLISTIC HEALTH LEVEL I
1 CREDIT

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

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

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.

Prerequisite: HHP 130.

HHP 249 HEALING AND SPIRITUAL JOURNALING
1 CREDIT

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

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.

Prerequisite: HHP 244.

HHP 256 HOLISTIC HEALTH LEVEL III
2 CREDITS

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.

Prerequisites: HHP 244 and HHP 254.

HHP 260 ADVANCED REFLEXOLOGY
1 CREDIT

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.

Prerequisite: HHP 164 or 166.

**HHP 262
PSYCHONEUROIMMUNOLOGY
0.5 CREDITS**

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**

Focuses on the necessary skills 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**

Explores self-talk, self-appreciation, self-responsibility, belief, expectations and provides tools for increasing personal power.

**HHP 267 LIVING WITHOUT
LIMITS
0.5 CREDITS**

Focuses on the steps that can be taken to clarify goals, obtain support for challenges, and act effectively to accomplish life dreams.

**HHP 269 HEALING PRESENCE
1 CREDIT**

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.

**HHP 270 CLINICAL
2 CREDITS**

Continues to build upon the principles that are expected to be understood by students in the holistic health discipline.

**HHP 276 YOUR HEART'S
INTENTION
1 CREDIT**

Looks at our heart's intention and what this means in our healing practice, work practice and everyday living. We will observe and discuss: intuition, knowing, seeing, different techniques for manifesting, the laws of attraction, and journaling growth as a healer or as you continue your chosen path. Discussion about self, self worth and how to accept success. The student will be exposed to different types of medications, journaling, and working on manifesting their personal goals.

HIS – History

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**HIS 101 WESTERN CIV:
ANTIQUITY-1650
3 CREDITS**

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 CIV:
1650-PRESENT
3 CREDITS**

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 THE WORLD:
ANTIQUITY-1500
3 CREDITS**

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 THE WORLD:
1500-PRESENT
3 CREDITS**

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 U.S. HISTORY TO
RECONSTRUCTION
3 CREDITS**

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 U.S. HISTORY SINCE
CIVIL WAR
3 CREDITS**

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 207 AMERICAN ENVIRONMENTAL HISTORY 3 CREDITS

Traces and analyzes the relationships between Americans and their natural environments throughout the history of the United States. Environmental history interprets the changing ways diverse people have used and viewed their environments over time. It examines the development of conservation movements and environmental policies in modern America.

HIS 208 AMERICAN INDIAN HISTORY 3 CREDITS

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

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

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

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 U.S. HISTORY SINCE 1945 3 CREDITS

Focuses on the major political, economic, social, and cultural developments that have shaped modern America.

HIS 244 HISTORY OF LATIN AMERICA 3 CREDITS

Focuses on the political, social, cultural and economic developments that have shaped Latin America from Pre-European conquest to the present.

HIS 247 20TH CENTURY WORLD HISTORY 3 CREDITS

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

Focuses on the exploration of current topics, issues, and activities related to one or more aspects of history.

HPR – Health Professional

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HPR 100 INTRODUCTION TO HEALTH 3 CREDITS

Provides an exploratory course for students interested in a health career. Basic health skills such as vital signs and CPR will be included

HPR 102 CPR FOR PROFESSIONALS 0.5 CREDITS

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 106 LAW AND ETHICS FOR HEALTH PROFESSIONS 2 CREDITS

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

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**

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 waived laboratory tests. Those students who successfully complete this course may apply for a National Phlebotomy Registry Examination.

Permission of the instructor needed.

**HPR 120 ADVANCED CARDIAC
LIFE SUPPORT (ACLS)
1 CREDIT**

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.

Prerequisite: Current basic life-support health care provider card

**HPR 121 ADVANCED CARDIAC
LIFE SUPPORT RENEWAL
0.5 CREDITS**

Presents the required material for ACLS renewal. The course will cover rhythm recognition, cardiac drugs, cardiac monitors, and case-based scenarios.

Prerequisite: ACLS completion with current card.

**HPR 125 OUTDOOR
EMERGENCY CARE
4 CREDITS**

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**

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**

Provides the needed information and skills required by health care agencies for pediatric emergencies.

**HPR 131 PEDIATRIC
ADVANCED LIFE SUPPORT
RENEWAL
0.5 CREDITS**

Provides updates and skill practice to complete renewal requirements for the PALS completion card.

Prerequisite: Current PALS card.

**HPR 178 MEDICAL
TERMINOLOGY
2 CREDITS**

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**

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. Documentation of immunizations, criminal background check, and permission of instructor are required.

Prerequisite: HPR 112.

**HPR 190 BASIC EKG
INTERPRETATION
2 CREDITS**

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**

Focuses on each wave and interval of the complex, the axis, and the 12-lead presentation of some rhythm disturbances.

Prerequisite: HPR 190.

**HPR 210 PHYSICAL
ASSESSMENT
2 CREDITS**

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.

Prerequisite: Current RN license.

**HPR 215 PHLEBOTOMY
REFRESHER
1 CREDIT,**

Covers collection procedures, and requirements for various laboratory tests, phlebotomy technique, and problem-solving. Basic review and practice of venipuncture techniques will be focused on.

Prerequisite: HPR 112.

Permission of the instructor needed.

**HPR 230 TRAUMA
ASSESSMENT AND
INTERVENTION
1 CREDIT**

Presents the steps for a systematic head-to-toe assessment and intervention in traumatic emergencies.

**HPR 260 BEREAVEMENT
COUNSELING
0.5 CREDITS**

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**

Focuses on skill building in communication, self-expression, and conflict resolution for those dealing with children.

**HPR 269 STRESS
MANAGEMENT
0.5 CREDITS**

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

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**HUM 118 RELIGION IN
AMERICAN CULTURE
3 CREDITS**

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**

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
MIEVEAL TO MODERN
3 CREDITS**

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**

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.RRCC.EDU/
CONSTRUCTION**

**HVA 102 BASIC
REFRIGERATION
4 CREDITS**

Introduces the basic theory of refrigeration systems, components, charging, recycling, and evacuation of refrigeration units.

Prerequisite: HVA 100 or OSH 127 or 10 Hour OSHA card.

**HVA 105 ELECTRICITY FOR
HVAC/R
4 CREDITS**

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.

Prerequisite: HVA 100 or OSH 127 or 10 Hour OSHA card.

**HVA 110 FUNDAMENTALS OF
GAS HEATING
4 CREDITS**

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.

Co-requisite: OSH 127, HVA 105 or permission of the instructor.

**HVA 111 PIPING SKILLS
4 CREDITS**

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.

Corequisite: OSH 127.

HVA 112 R-410A 1 CREDIT

Enlightens you on conditions required for proper operation with R-410a.

HVA 113 REFRIGERANT RECOVERY TRAINING 1 CREDIT

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. Test is offered following the class. Test fee is not included in course fee.

Prerequisite: OSH 127, VA 102 or permission of the instructor.

HVA 114 CENTRIFUGAL PUMPS 1.5 CREDITS

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

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

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

Applies the knowledge of basic electricity to controls related to air conditioning and refrigeration equipment. The course also works on reading and drawing schematic and ladder diagrams.

Prerequisites: HVA 102 and 105, or permission of instructor.

HVA 134 AIR CONDITIONING SYSTEMS 4 CREDITS

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

Teaches the basic skills required to install duct systems for those entering the HVAC trade. Information covered includes: tools, safety, common materials, installation standards and practices. The course will cover fabrication of transitions and common fittings.

HVA 141 SHEET METAL FABRICATION 2 CREDITS

Covers the basics of shop based sheet metal tools and hand tools and how they can be used to create fittings for residential ducting

systems. Safety and operation of tools will be stressed. You will learn to layout and fabricate a furnace plenum, a transition, square and radius elbows, and other fittings as time permits.

HVA 146 HVA INSTALLATION CODE 2 CREDITS

Covers mechanical code requirements for combustion air systems, venting systems, fuel piping systems in residential applications.

HVA 162 HEATING CONTROLS 4 CREDITS

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.

Prerequisites: HVA 110 and 105, or permission of the instructor.

HVA 192 REFRIGERANT RETROFIT TRAINING 1.5 CREDITS

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

Increases knowledge of basic hydraulics to become a better troubleshooter and lower maintenance costs. Training stations are utilized in each training session. Cutaways of all major components

are used in the sessions to visually demonstrate the component's construction and operation. Developing an understanding of how it works leads to an understanding of how and why it fails.

HVA 194 FUNDAMENTALS OF PNEUMATIC CONTROLS 1.5 CREDITS

Introduces the subject of pneumatic comfort controls. It is device oriented and provides a thorough treatment of those devices commonly utilized in comfort control systems including theory and basic operation of pneumatic thermostats, receiver-controllers, relays, dampers, valves and pneumatic actuators. Calibration, operation and preventive maintenance aspects of these components are highlighted.

HVA 200 INTERNATIONAL RESIDENTIAL CODE – MECHANICAL & FUEL GAS 2 CREDITS

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 CODES 4 CREDITS

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

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.
Prerequisite: Documental boiler experience or permission of the instructor.

HVA 231 PNEUMATIC CONTROLS 4 CREDITS

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.

Prerequisites: HVA 102,105,132 or permission of the instructor.

HVA 232 ADVANCED AIR CONDITIONING AND REFRIGERATION CONTROLS 4 CREDITS

Covers the advanced study of air conditioning and refrigeration controls.

Prerequisites: HVA 102, HVA 105, HVA 113, HVA 132.

HVA 233 ADVANCED REFRIGERATION 4 CREDITS

Prerequisites: HVA 100 or OSH 127, HVA 102, 105, 113, 132.
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

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.
Prerequisites: HVA 100 or OSH 127, HVA110, 105, 162 or permission of the instructor.

HVA 247 HOT WATER HEATING SYSTEMS 4 CREDITS

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.

Prerequisites: HVA 105, HVA 110, HVA 111 or PLU 101, HVA 162 or permission of the instructor.

HVA 251 BUILDING AUTOMATION I, INSTALLER 4 CREDITS

Provides you with an overview of building automation systems. This course helps you to understand the installation of building automation devices with regard to HVAC equipment.

Prerequisite: Basic understanding of PCs and Windows operating system, wiring skills and HVAC experience.

HVA 252 BUILDING AUTOMATION II, SERVICE 4 CREDITS

Covers operating and modifying an installed building automation system. This is a highly interactive course where you will learn and exercise common applications of a building management system.
Prerequisite: HVA 251.

HVA 253 BUILDING AUTOMATION III, ADVANCED OPERATIONS 4 CREDITS

Covers complete set up and programming of a building automation system. The class includes extensive hands-on workshops.
Prerequisite: HVA 252.

**HVA 257 LOW-PRESSURE STEAM HEATING
4 CREDITS**

Examines low pressure steam systems including boilers, piping, heat convectors. Repair and maintenance of these systems is covered as well as theory behind their operation. Boiler feed water and condensate systems are also discussed.

Prerequisites: HVA 105, 110, 162, 206, 247 or permission of the instructor.

**HVA 261 A/C SYSTEMS SERVICE AND REPAIR
4 CREDITS**

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

Prerequisites: HVA 100 or OSH 127, HVA 102, 105, or permission from instructor.

**HVA 263 CHILLERS
4 CREDITS**

Introduces you to chillers and their operating parameters.

Prerequisites: HVA 100 or OSH 127, HVA 102, 105, 113, 132.

**HVA 264 EVAPORATIVE COOLING SYSTEMS WATER TREATMENT
4 CREDITS**

Covers aspects of commercial and residential evaporative cooling systems. Areas examined include maintenance to these systems, water treatment, sizing, pumps and piping.

Prerequisites: HVA 100 or OSH 127, HVA 102, 103, 105, 113, 132, or permission from the instructor.

**HVA 267 RADIANT HEATING SYSTEMS
4 CREDITS**

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 will be able to design, install, document, maintain and trouble-shoot all conventional residential warm water, radiant panel heating systems.

Prerequisites: HVA 111 or PLU 101, HVA 110, 105, 162, 247 or permission of the instructor.

**HVA 268 ADVANCED HYDRONIC CONTROLS
4 CREDITS**

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.

Prerequisites: HVA 110, 111 or PLU 101, HVA 162, 247, 267 or permission of the instructor.

**HVA 269 INDOOR AIR QUALITIES AND VENTILATION
4 CREDITS**

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**

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

**HVA 280 INTERNSHIP
0.5-6 CREDITS**

Gives you an opportunity to apply your course studies in a specific area.

Prerequisite: Permission of the instructor.

**HVA 285 INDEPENDENT STUDY
0.5-6 CREDITS**

Students will work with the instructor on a specific area with specific objectives and a predetermined project completion date.

Prerequisite: Permission of instructor.

HWE – Health and Wellness

WWW.RRCC.EDU/HEALTH

**HWE 100 HUMAN NUTRITION
3 CREDITS**

Introduces basic principles of nutrition with emphasis on personal nutrition. It satisfies the nutrition requirement of students entering health care professions.

**HWE 113 FIRST AID AND ADULT CPR
0.5 CREDITS**

Teaches the recognition and care for breathing and cardiac emergencies for victims 8 years old and up. This course also teaches the student to identify and care for life-threatening bleeding, sudden illness, and injuries.

**HWE 120 WILDERNESS FIRST AID
1 CREDIT**

Provides limited medical information to cope with basic wilderness emergencies.

HWE 129 WILDERNESS FIRST RESPONDER 4 CREDITS

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 130 WFR REFRESHER 1 CREDIT

Meets the standards for recertification of a Wilderness First Responder certification. Topics to be included are CPR, patient assessment, trauma, medical, and environmental emergencies. This course is required to maintain a current Wilderness First Responder certification, which must be recertified every three years.

HWE 250 AMERICAN COUNCIL ON EXERCISE PERSONAL TRAINER PREPARATORY COURSE 2 CREDITS

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.

IMA – Industrial Maintenance Technology

WWW.RRCC.EDU/ISOD

IMA 100 INTRODUCTION TO INDUSTRIAL MAINTENANCE 3 CREDITS

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 which are part of a functioning machine. You will also be exposed to parts and specification manuals utilized in the repair of industrial machinery. Finally, you will begin to learn the logical process utilized in the diagnosis of broken, worn, and defective.

IMA 120 PUMPS, SEALS, ROTATING EQUIPMENT 3 CREDITS

Explains the theory and operation of various types of pumps and compressors in common use in the process and energy supply industries. Mechanical power transmission systems including direct coupling and v-belt drives will be studied. The principles involved in the operation of centrifugal and positive displacement pumps and compressors will be discussed, along with the function of various components in pumps and compressors, disassembly and reassembly of pumps, compressors and mechanical drives, and troubleshooting pumps and compressors.

IMA 140 INDUSTRIAL PIPE AND PIPING SYSTEMS 3 CREDITS

Explains the use of piping standards and specifications, the identification and use of various materials, and material take-offs common to the process and energy supply industry. The installation and repair of industrial pipe systems commonly used in the conveying of gases and fluids will be covered. The course includes manually and automatically operated valves, regulators and other associated components. Students will work with steel, copper, and PVC pipe.

IMA 150 INDUSTRIAL PROBLEM SOLVING METHODS 2 CREDITS

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.

IMA 160 BASIC FLUID POWER 3 CREDITS

Provides an understanding of 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 the function and construction of basic elements of a hydraulic or fluid power system. The course will cover hydraulic symbols and prints used in industry.

IMA 210 VIBRATION PRINCIPLES I 3 CREDITS

Introduces 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.

Prerequisite: permission of instructor.

IMA 211 VIBRATION PRINCIPLES II 3 CREDITS

IMA 211 is a continuation of IMA 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; 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; perform basic bump tests to determine natural frequencies and recommend minor corrective actions

Prerequisite: IMA 210 or permission of instructor.

IMA 250 INDUSTRIAL MACHINE LUBRICATION 3 CREDITS

Provides an understanding of 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.

IND – Interior Design

WWW.RRCC.EDU/IND

IND 100 INTERIOR DESIGN FUNDAMENTALS 4 CREDITS

Introduces to design elements, principles and theory. Application techniques, emphasizing design relationships and composition will be explored. Basic skills and techniques of both visual and oral presentations will be introduced.

IND 108 PROFESSIONAL SURVEY 1 CREDIT

Provides guest speakers who share experiences and insights concerning job types, opportunities, and the educational requirements for them, business practices, current work, professional organizations; tools, methods and educational requirements necessary for various positions ; and prevailing professional attitudes..

IND 111 DRAFTING FOR INTERIORS 4 CREDITS

Introduces the basic drafting tools and techniques, graphic references and symbols, use of pencil and technical pen. Student learns to draft floor plans and interior elevations. Course also covers basic interior dimensioning and lettering as well as isometric drawing construction for interior components.

IND 112 GRAPHICS COMMUNICATION 4 CREDITS

Teaches methods of communicating interior design plans, elements and ideas in 3-D, through perspective drawing construction and quick sketch techniques, and practice rendering and illustration skills.

Prerequisite: IND 111

IND 114 SPACE PLANNING 3 CREDITS

Teaches the principles and factors of space planning, and practice the space planning process through residential and light commercial applications. Students are introduced to interior architecture. Use of bubble diagrams and freehand ink presentation techniques are also included.

Prerequisite: IND 111

IND 117 INTERIOR TEXTILES 2 CREDITS

Emphasizes the study of fabrics, fibers, weaves, finishes, dying, and printing methods for residential and commercial fabrics and carpets. Resources are discussed and developed.

IND 118 INTERIOR FINISHES 2 CREDITS

Examines finish materials for residential and commercial interior design; preparation and installation techniques; introduction to specifications and estimating

Prerequisite: IND 117 or equivalent.

IND 151 RESIDENTIAL DESIGN 4 CREDITS

Teaches and applies the preliminary project phases of the residential design process. Project documentation is introduced and practiced. At least one portfolio project is produced.

Prerequisite: IND 111 or equivalent.

IND 152 COMMERCIAL DESIGN I 2 CREDITS

Introduces commercial design space planning and procedures. Students will study and apply space planning, code requirements and design documentation techniques for a variety of commercial project types through a series of short exercises. Emphasis will be placed on programming and schematic design. Hand drafting, sketching and various office computer software applications will be utilized.

Prerequisite: IND 111 or equivalent.

IND 200 KITCHEN AND BATH DESIGN 4 CREDITS

Provides the specialized design process and documentation requirements of kitchen and bath design and applies NKBA guidelines. Students become familiar with trade resources supporting the design field. At least two portfolio projects are produced. Students will be encouraged to produce project documents using a variety of computer software applications.

Prerequisite: IND 151 or equivalent.

IND 205 PROFESSIONAL PRACTICE FOR INTERIOR DESIGNERS 2 CREDITS

Introduces many of the business procedures encountered in the commercial and residential practice of interior design. The student will generate a business plan and a marketing plan and learn how to establish accounts within the industry.

IND 211 INTERIOR CONSTRUCTION 4 CREDITS

Introduces the student to interior building systems and assemblies, construction documents and details, and codes applicable to interior architecture. Student will apply

this knowledge to various graphic projects and is encouraged to produce projects using the computer and CAD software.

Prerequisite: CAD 101 and CAD 102.

IND 225 LIGHTING DESIGN 3 CREDITS

Teaches and applies basic knowledge of interior lighting technology and design. Content includes lamp classifications, color rendition, how lighting sources effect our perception of space, how to compute and control proper lighting levels, and how to communicate design information by means of a reflected ceiling plan and luminaire schedule. Students will be encouraged to produce projects using a variety of computer software applications.

Prerequisite: IND xxx or equivalent.

IND 231 SUSTAINABLE DESIGN 3 CREDITS

Creates an awareness and understanding of ecological issues while emphasizing the use of environmentally friendly materials and resources that do not compromise the effectiveness of the design. This course also investigates the practice of design to reduce the effects on the environment using renewable materials in the design building for both residential and commercial property. Its emphases are to learn to conserve resources and to reduce the negative impact on the environment.

IND 275 PORTFOLIO 1 CREDIT

Provides work experience in a business or industry.

IND 280 INTERNSHIP 1-6 CREDITS

Provides work experience in a business or industry; 45 fieldwork hours per credit hour.

IND 289 CAPSTONE 1-6 CREDITS

Provides a demonstrated culmination of learning within a given program of study.

ITA – Italian

WWW.RRCC.EDU/LANGUAGES

ITA 101 CONVERSATIONAL ITALIAN I 3 CREDITS

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

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.

Prerequisite: ITA 101 or permission of instructor.

JOU – Journalism

WWW.RRCC.EDU/MULTIMEDIA

Journalism classes reside under both the JOU and MGD prefixes, and classes are held in the Multimedia Graphic Design Department.

Prerequisites: basic computer skills. Basic computer skills are defined as basic keyboarding; uploading and downloading files from the Internet and external devices; using the Web for basic research; sending e-mail and attachments; basic file management; the ability to save information to a CD/DVD, flash drive,

or external device; burning a CD/DVD; the ability to use the dock or start menu to open applications; create a new folder on the desktop or other location; and open files in an application. Students without these skills are required to take MGD 101 Introduction to Computer Graphics either concurrently or prior to taking other courses in the MGD/PHO/JOU department. If MGD 101 Introduction to Computer Graphics is not a requirement for your degree plan, it can be used as an elective

JOU 102 INTRODUCTION TO EDITING 3 CREDITS

Focuses on the process of editing articles for publication in newspapers, newsletters, magazines and the Internet. The Associated Press style is emphasized.

JOU 105 INTRODUCTION TO MASS MEDIA 3 CREDITS

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

Introduces newswriting, reporting and interviewing with an emphasis on clarity, accuracy, completeness, timeliness and fairness.

JOU 111 PRINCIPLES OF ADVERTISING 3 CREDITS

Employs design concepts, principles and practices for advertising management for the mass media.
Recommended Prerequisites: MGD 111, MGD 112, MGD 114 and MGD 104.

JOU 114 TV PRODUCTION 3 CREDITS

Covers principles and techniques of television production, as well as the role of the director/producer.
Recommended Prerequisite: MGD 104.

JOU 121 PHOTOJOURNALISM 3 CREDITS

Provides an introductory, hands-on course in black-and-white photography, with an emphasis on photojournalistic techniques, processing and printing. This course includes an investigation of word/pictures relationships in creating photo essays for publications.

JOU 206 INTERMEDIATE NEWSWRITING AND EDITING 3 CREDITS

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 our courts and regulatory agencies function, and how to cover other challenges as the environment, religion, science, medical, public safety and business.
Recommended Prerequisites: JOU 102 and JOU 106.

JOU 215 PUBLICATIONS PRODUCTION AND DESIGN 3 CREDITS

A Capstone class which students should take in their final semester prior to graduation. Students will participate in the planning, writing, design, and production processes of a non-newspaper publication.

JOU 225 INTERNET MEDIA 3 CREDITS

Explores techniques and approaches to the latest delivery methods for internet-based journalism. Students explore digital media concepts such as blogs, microblogs audio and video podcasting, e-zines and social networking. Students create journalistic pieces for internet based media, focusing on best journalistic practices, ethics of internet media, and technology emergence effecting digital journalism. Concepts in video production, photography, writing, sourcing, editing and additional relevant skills necessary for the citizen journalist are introduced. Students create all components for the online dissemination of news, documentary and infotainment.
Recommended Prerequisites: MGD 101, MGD 104, MGD 111, MGD 112, MGD 114 and MGD 141.

JOU 241 MAGAZINE ARTICLE WRITING 3 CREDITS

Studies trade, consumer and technical markets; manuscript development with emphasis on nonfiction; submission techniques; and trends affecting the marketing of manuscripts.
Recommended prerequisites: JOU 102, JOU 106 and JOU 206.

JPN – Japanese

WWW.RRCC.EDU/LANGUAGES

JPN 101 CONVERSATIONAL JAPANESE I 3 CREDITS

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

Continues the sequence for beginning students who wish to understand and speak Japanese. It covers basic conversational patterns, expressions, and grammar.

Prerequisite: JPN 101 or instructor permission.

JPN 111 JAPANESE LANGUAGE I 5 CREDITS

Introduces a sequence dealing with the development of functional proficiency in listening, speaking, reading and writing the Japanese language. Note: The order of the topics and methodology will vary according to individual texts and instructors.

JPN 112 JAPANESE LANGUAGE II 5 CREDITS

Continues Foreign Language I in the development of functional proficiency in listening, speaking, reading and writing the Japanese language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

LEA – Law Enforcement Academy

LEA 101 BASIC POLICE ACADEMY I 6 CREDITS

Conforms to P.O.S.T. standards and state certification requirements as well as the basic skills and knowledge necessary to perform the entry level duties of a peace officer. Emphasis will be on simulating actual situations utilizing a lecture and laboratory mode of learning.

Prerequisite: Permission of academy director.

LEA 102 BASIC POLICE ACADEMY II 12 CREDITS

Conforms to P.O.S.T. 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.

Prerequisite: Permission of academy director.

LEA 103 BASIC LAW ENFORCEMENT ACADEMY III 2 CREDITS

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.

Prerequisite: Permission of academy director.

LEA 104 BASIC LAW ENFORCEMENT ACADEMY IV 1 CREDIT

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.

Prerequisite: Permission of academy director.

LEA 105 BASIC LAW 8 CREDITS

Conforms to P.O.S.T. standards and state certification requirements as well as the basic skills and knowledge necessary to perform the entry level duties of a 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.

Prerequisite: Permission of academy director.

LEA 106 ARREST CONTROL TECHNIQUES 3 CREDITS

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.

Prerequisite: Permission of academy director.

LEA 107 LAW ENFORCEMENT DRIVING 3 CREDITS

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.

Prerequisite: Permission of academy director.

**LEA 108 FIREARMS
3 CREDITS**

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.

Prerequisite: Permission of academy director.

**LEA 109 CULTURE AND
CONFLICT RESOLUTION
2 CREDITS**

Explores the role culture plays in dispute resolution and ways that gender, race, ethnicity, national origin, age, religion, sexual orientation and language influence conflict resolution.

Prerequisite: POST certification

**LEA 116 CIVIL LIABILITY
3 CREDITS**

Covers the origin and jurisdiction of civil action, procedure and responsibility addressing the liability of criminal justice practitioners.

Prerequisite: POST certification

**LEA 118 REPORT WRITING
3 CREDITS**

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.

Prerequisite: POST certification

**LEA 126 PATROL PROCEDURES
3 CREDITS**

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.

Prerequisite: POST certification

**LEA 130 ADMINISTRATION OF
JUSTICE FOR THE RESERVE
OFFICER
1 CREDIT**

Explains the statutory authority by which the student will function as a Colorado Reserve Peace Officer. Student will become familiar with the operations of the criminal justice system, concepts of ethics in policing and the relationship to the law enforcement profession, and elements of Colorado statutes necessary to function as a Reserve Peace Officer.

Prerequisite: POST certification

**LEA 131 BASIC LAW FOR THE
RESERVE OFFICER
2 CREDITS**

Includes the U.S. Constitution, rules of evidence, Colorado criminal code, victims rights, and legal liability.

Prerequisite: POST certification

**LEA 160 POST REFRESHER
ACADEMY
6 CREDITS**

Allows refresher training for individuals who have held POST certificate in the past or who hold a POST certificate from a state that has a reciprocity agreement with the Colorado POST organization. This course of instruction is designed by Colorado POST. The course of instruction covers administration of justice, basic law, patrol procedures, use of force, law enforcement driving and a firearms training program.

Prerequisite: POST certification

**LEA 167 FINGERPRINTING
3 CREDITS**

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.

Prerequisite: POST certification

**LEA 218 DRUG INVESTIGATIVE
STRATEGIES
3 CREDITS**

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.

Prerequisite: POST certification

**LEA 219 POLICE
INTELLIGENCE
2 CREDITS**

Focuses on the fundamentals of how law enforcement agencies apply intelligence in police operations and combat organized crime. Explains the structure, training, staffing and security of intelligence units and demonstrates operating guidelines at a command level.

Prerequisite: POST certification

**LEA 221 COMMUNITY
PROBLEM SOLVING
3 CREDITS**

Explores community oriented policing and problem solving strategies. Emphasizes the development of skills and tools necessary to implement a program. Focuses on handling stress, problem solving, and verbal communication techniques. Examines special problems that affect the police and community including victim rights, ethics, crime prevention, gangs, ethnic intimidation and child abuse.

Prerequisite: POST certification

LEA 222 LAW ENFORCEMENT INSTRUCTOR DEVELOPMENT PROGRAM

3 CREDITS

Teaches the fundamentals of classroom instruction. It includes the practice and application of classroom skills that involve the preparation and presentation of law enforcement programs, principles of learning, constructing performance objectives and lesson plans, the use of audio-visual aids, test construction and evaluation, and training liability. This is a POST approved course.

Prerequisite: POST certification

LEA 223 FIREARMS INSTRUCTOR COURSE

1 CREDIT

Focuses on understanding and demonstration of safe handling and proper utilization of firearms. Learns safe and proper teaching necessary to instruct others in the safe use of firearms. Demonstrates knowledge in the management of a safe and realistic police firearms training program and the ability to safely and properly control a police firearms range.

Prerequisite: POST certification

LEA 224 PRESSURE POINT CONTROL TACTICS INSTRUCTOR (ACT)

1 CREDIT

Prepares and certifies law enforcement personnel and PPCT instructors. Once certified, they are able to teach a program of Arrest Control Tactics.

Prerequisite: POST certification

LEA 226 FIELD TRAINING OFFICER DEVELOPMENT

2 CREDITS

Covers the topic areas in law enforcement that are unique to Field Training Officer (FTO). The instructional content of this program includes direct supervision,

evaluation procedures, individual instruction, and individual on the spot correction.

Prerequisite: POST certification

LEA 227 L.E. SUPERVISORY TRAINING PROGRAM

2 CREDITS

Develops the law enforcement supervisor. It provides an overview of police supervision and gives the student an understanding of the first-line supervisor's role from three perspectives: management expectations, first-line supervisor concept of the role, and subordinates expectations. This is a POST approved course.

Prerequisite: POST certification

LEA 240 CRIMINAL INVESTIGATIONS

3 CREDITS

Introduces investigation methods and procedures from preliminary through the follow-up stages.

Prerequisite: POST certification

LEA 241 SECURITY OF SPECIALIZED FACILITIES

2 CREDITS

Covers areas within the security field that require special knowledge, such as airport security, nuclear and atomic site control, clearance control, military and civilian integrated security systems, civil demonstrations, strikes, and riot control. Includes specialized areas of accounting, computer control, foreign trade control, and industrial espionage.

Prerequisite: POST certification

LEA 242 PRESSURE POINT CONTROL TACTICS (PPCT) RECERTIFICATION COURSE (ACT)

1 CREDIT

Updates the police officer on the changes of the law and any updates to the course. It is required that the instructor be a certified PPCT instructor. Once completed the

officer will be endorsed by PPCT for one year.

Prerequisite: PPCT certification

LEA 243 COUNTY SHERIFF OPERATIONS

1 CREDIT

Covers the topic areas in law enforcement that are unique to the county sheriff's department. The content of this program includes prisoner transporting, booking procedures, courtroom security, civil process, and duties/responsibilities associated with a county sheriff's department as outlined in CRS 30-10-501 through 523 and CRS 30-2-106 and 107.

Prerequisite: POST certification

LEA 244 DETENTION SKILLS REFRESHER

2 CREDITS

Covers the topic areas in law enforcement that are unique to the detention officers. The instructional content of this program includes prisoner transporting, booking procedures, security in the courtroom, and duties/responsibilities associated with a detention as outlined in CRS 30-10-501 through 523 and CRS 20-2-106 and 107.

Prerequisite: POST certification

LEA 246 TRAFFIC INVESTIGATION

3 CREDITS

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.

Prerequisite: POST certification

**LEA 247 STREET SURVIVAL
TECHNIQUES
2 CREDITS**

Provides an in-depth study of the basic knowledge and skills required of a peace officer to safely and effectively accomplish the patrol function.

Prerequisite: POST certification

**LEA 260 POLICE
PHOTOGRAPHY
3 CREDITS**

Focuses on current methods and techniques of police photography. Includes the use, nomenclature, and operation of a 35mm and 4x4 cameras at simulated crime scenes and traffic accidents. Incorporates the development, printing, and enlargement of photos.

Prerequisite: POST certification

LIT – Literature

WWW.RRCC.EDU/ENGLISH

**LIT 115 INTRODUCTION TO
LITERATURE I
3 CREDITS**

Introduces you to fiction, poetry, and drama. The course emphasizes active and responsive reading.

**LIT 127 STUDY OF THE NOVEL
3 CREDITS**

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**

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**

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**

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**

Focuses on significant texts by ethnic Americans, including African-American, Native American, Latino/a, and Asian American. 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**

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**

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**

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**

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**

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**

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

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

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

Examines the relationship between literature and motion pictures, emphasizing the technique and interpretive function of filmmakers.

LIT 285 INDEPENDENT STUDY 3 CREDITS

Explores particular authors, topics, or themes in depth, such as Ibsen, Faulkner, Twain, or great fiction of the nineteenth century.

MAC – Machining

MAC 101 INTRODUCTION TO MACHINE SHOP 3 CREDITS

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

Teaches you to read blueprints and interpret symbols, notes, dimensions, and tolerances.

MAC 105 INTRODUCTION TO MACHINING TECHNOLOGY 4 CREDITS

Introduces the student 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

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

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

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

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

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

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

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

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

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

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

Prepares you to write basic computer numerical control (CNC) lathe part programs. G & 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

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

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

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

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

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

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

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

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

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

WWW.RRCC.EDU/BUSINESS

MAN 116 PRINCIPLES OF SUPERVISION 3 CREDITS

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.
Prerequisite: BUS 115 suggested.

MAN 117 TIME MANAGEMENT 1 CREDIT

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

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.
Prerequisite: BUS 115 suggested.

MAN 212 NEGOTIATION AND CONFLICT RESOLUTION 3 CREDITS

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.
Prerequisite: BUS 115 suggested.

MAN 215 ORGANIZATIONAL BEHAVIOR 3 CREDITS

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.
Prerequisite: BUS 115 suggested.

MAN 224 LEADERSHIP 3 CREDITS

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.
Prerequisite: BUS 115 suggested.

MAN 225 MANAGERIAL FINANCE 3 CREDITS

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.
Prerequisites: BUS 115, ACC 121, ACC 122.

MAN 226 PRINCIPLES OF MANAGEMENT
3 CREDITS

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.

Prerequisite: BUS 115 suggested.

MAN 275 SPECIAL TOPICS
1-3 CREDITS

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

Meets the individual needs of students who will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

MAN 287 COOPERATIVE EDUCATION/INTERNSHIP
1-3 CREDITS

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.

Prerequisite: Permission of instructor.

MAR – Marketing

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MAR 111 PRINCIPLES OF SALES
3 CREDITS

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.

Prerequisite: BUS 115 suggested.

MAR 117 PRINCIPLES OF RETAILING
3 CREDITS

Emphasizes the study of the basic principles and techniques of merchandising, operations, layout, store organization, site location, and customer service with an emphasis on retailing operations.

Prerequisite: BUS 115 suggested.

MAR 216 PRINCIPLES OF MARKETING
3 CREDITS

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.

Prerequisite: BUS 115 suggested.

MAR 220 PRINCIPLES OF ADVERTISING
3 CREDITS

Examines the principles and practices of advertising and its relationship to business in order to promote a business or organization. Areas of major emphasis include advertising principles, strategies, media, copy and layout, and ethical considerations.

Prerequisite: BUS 115 suggested.

MAR 240 INTERNATIONAL MARKETING
3 CREDITS

Enables the student to explore the international marketing for U.S. products, and to explore the increasing competitive international environment and recent changes in the environment that have challenged U.S. business. The course is designed to make the reader an "informed observer" of the global market place as well as enabling him/her to develop skills to make marketing decisions in a global context.

Prerequisite: BUS 115 suggested.

MAR 275 SPECIAL TOPICS
1-3 CREDITS

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

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.

Prerequisite: Permission of instructor.

MAR 285 INDEPENDENT STUDY
1-3 CREDITS

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

MAT – Mathematics

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MAT 030 FUNDAMENTALS OF MATHEMATICS 2 CREDITS

Includes the vocabulary, operations, and applications of whole numbers, decimals and basic fractions and mixed numbers.

Prerequisite: appropriate math assessment score.

MAT 060 PRE-ALGEBRA 3 CREDITS

Furtheres 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.

Prerequisite: MAT 030 (grade C or better) or appropriate math assessment score.

MAT 090 INTRODUCTORY ALGEBRA 4 CREDITS

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.

Prerequisite: MAT 060 (grade C or better) or appropriate math assessment score.

MAT 099 INTERMEDIATE ALGEBRA 4 CREDITS

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.

Prerequisite: MAT 090 (grade C or better) or appropriate math assessment score.

MAT 107 CAREER MATH 3 CREDITS

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.

Prerequisite: MAT 060 (grade C or better) or appropriate math assessment score.

MAT 120 MATHEMATICS FOR THE LIBERAL ARTS 4 CREDITS

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/ or 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.

Prerequisite: MAT 099 (grade C or better) or appropriate math assessment score.

MAT 121 COLLEGE ALGEBRA 4 CREDITS

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 department chair with questions about these credits.

Prerequisite: MAT 099 (grade C or better) or appropriate math assessment score.

MAT 122 COLLEGE TRIGONOMETRY 3 CREDITS

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.

Prerequisite: MAT 121 (grade C or better).

MAT 123 FINITE MATHEMATICS 4 CREDITS

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.

Prerequisite: MAT 099 (grade C or better) or appropriate math assessment score.

MAT 125 SURVEY OF CALCULUS 4 CREDITS

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.

Prerequisite: MAT 121 or MAT 123 (grade C or better).

MAT 135 INTRODUCTION TO STATISTICS 3 CREDITS

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.

Prerequisite: MAT 099 (grade C or better) or appropriate math assessment score.

MAT 155 INTEGRATED MATH I 3 CREDITS

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.

Prerequisite: MAT 099 (grade C or better) or appropriate math assessment score.

MAT 156 INTEGRATED MATH II 3 CREDITS

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.

Prerequisite: MAT 155 (grade C or better).

MAT 166 PRE-CALCULUS 5 CREDITS

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.

Prerequisite: Permission of Math Department Chair.

MAT 175 SPECIAL TOPICS 1-4 CREDITS

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

Prerequisite: Permission of instructor.

MAT 185 INDEPENDENT STUDY 1-4 CREDITS

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.

Prerequisite: Permission of instructor.

MAT 201 CALCULUS I 5 CREDITS

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.

Prerequisites: MAT 121 and MAT 122 (grade C or better) or Mat 166 (grade C or better).

MAT 202 CALCULUS II 5 CREDITS

A continuation of single variable calculus, which will include techniques of integration, polar coordinates, analytic geometry, improper integrals, and infinite sequences and series. A graphing calculator is required for this course.

Prerequisite: MAT 201 (grade C or better).

MAT 204 CALCULUS III WITH ENGINEERING APPLICATIONS 5 CREDITS

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.

Prerequisite: MAT 202 (grade C or better).

MAT 261 DIFFERENTIAL EQUATIONS WITH ENGINEERING APPLICATIONS 4 CREDITS

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.

Prerequisite: MAT 204 (grade C or better).

MAT 285 INDEPENDENT STUDY

1-3 CREDITS

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

Prerequisite: Permission of Instructor.

MET – Meteorology

MET 150 GENERAL METEOROLOGY **4 CREDITS**

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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Prerequisites: basic computer skills
Basic computer skills are defined as basic keyboarding; uploading and downloading files from the Internet and external devices; using the Web for basic research; sending e-mail and attachments; basic file management; the ability to save information to a CD/DVD, flash drive, or external device; burning a CD/DVD; the ability to use the dock or start menu to open applications; create a new folder on the desktop or other location; and open files in an application. Students without these skills are required to take MGD 101 Introduction to Computer Graphics

either concurrently or prior to taking other courses in the MGD/PHO department. If MGD 101 Introduction to Computer Graphics is not a requirement for your degree plan, it can be used as an elective.

MGD 101 INTRODUCTION TO COMPUTER GRAPHICS **3 CREDITS**

Introduces computer systems developed for graphics. You will learn hardware and software components used in multimedia production and 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**

Introduces the equipment and software used in multimedia production and the multimedia professions 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.

Recommended Prerequisite: MGD 101 and basic computer skills.

MGD 103 PRODUCTION DESIGN **3 CREDITS**

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.

Recommended Prerequisites: MGD 101 or MGD 102 and basic computer skills.

MGD 104 VIDEOGRAPHY **3 CREDITS**

Introduces to the principles and techniques of video 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.

Recommended Prerequisites: MGD 101 or MGD 102 and basic computer skills.

MGD 111 ADOBE PHOTOSHOP I **3 CREDITS**

Recommended Prerequisite: MGD 101 or MGD 102 and basic computer skills.

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 also are explored in this class.

MGD 112 ADOBE ILLUSTRATOR I **3 CREDITS**

Acquaints you 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 also are explored in this class.

Recommended Prerequisites: MGD 101 or MGD 102 and basic computer skills.

MGD 114 ADOBE INDESIGN **3 CREDITS**

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.

Recommended Prerequisites:
MGD 111 and MGD 112 and basic computer skills.

MGD 115 MULTIMEDIA TEAM DEVELOPMENT 3 CREDITS

Further develops the relationships between various roles of multimedia development teams. Topics include the responsibilities of multimedia team members, various types of multimedia productions, managing project dimensions, applications of multimedia technologies and tools.

MGD 116 TYPOGRAPHY 3 CREDITS

Introduces the history and concepts of typography as applied to graphic communications. Explores appropriate use of typography in a variety of design applications, emphasizing the basic design principles of typographic compositions and typesetting. Covers type recognition and typographic terms.

MGD 118 DIGITAL COLOR THEORY 3 CREDITS

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.
Recommended Prerequisites:
MGD 111 and MGD 112 and basic computer skills.

MGD 119 AUTODESK MAYA I 3 CREDITS

Introduces 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.

Recommended Prerequisites:
MGD 152 and MGD 153 and basic computer skills.

MGD 121 COREL PAINTER FOR DIGITAL MEDIA 3 CREDITS

Introduces 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.

Recommended Prerequisites:
MGD 101 or MGD 111 and basic computer skills.

MGD 122 SCULPTING FOR DIGITAL MEDIA 3 CREDITS

Introduces conceptualization of surface coloration, painting and manipulation of 3D digitizer and environments. You will construct sculptures using organic, inorganic, abstract, and realistic subject matter. You will learn to operate a 3D scanner, digitize a sculpture, and bring the electronic file into a computer animation application for manipulation.

Recommended Prerequisites:
MGD 152 and MGD 119 and Basic computer skills.

***MGD 125 3D MODELING FOR GAMING: AUTODESK 3D STUDIO MAX 3 CREDITS**

Introduces basic 3D modeling and rendering features of a specific 3D modeling software. Students will understand 3D geometry, model management, creating materials, material editor effects, beginning photo-realistic rendering, project management, basic rendering concepts and archiving projects.

***MGD 129 HISTORY OF ANIMATION 3 CREDITS**

Presents students with a descriptive overview of the advent and evolution of cinema animation from its earliest origins to the present day. Students examine important individuals and studios in the animation field. Students view, analyze and peer critique animation examples in film and media. Social, cultural, artistic movements, and influences on contemporary animation styles and techniques are examined

MGD 141 WEB DESIGN I: ADOBE DREAMWEAVER 3 CREDITS

Introduces web site planning, design and creation using industry-standards-based web site development tools. Screen-based color theory, web aesthetics, use of graphics editors and intuitive interface design are explored.
Recommended Prerequisites:
MGD 111 and/or MGD 112 and Basic computer skills.

***MGD 142 2D ANIMATION PRODUCTION 3 CREDITS**

Provides students with an understanding of the fundamental principles and applications of traditional 2D character animation. Student broaden their awareness and appreciation of the depth of skill and abilities required to create

2D animation and how these skills can and must be applied toward the creation of quality 3D animation as well. Students will develop specific 2D animation skills, such as pencil testing, ink and paint and compositing and will master the fundamental principles of character animation. Students will produce a finished piece of original animation that showcases the skills acquired in class

MGD 143 MOTION GRAPHIC DESIGN I: ADOBE FLASH **3 CREDITS**

Uses the industry standard software for the creation of 2D animation and dynamic interactive media for Web and multimedia applications. You will create objects and symbols and assemble motion and animation tweens.

Recommended Prerequisites:
MGD 111 and MGD 112 and basic computer skills.

MGD 152 DIGITAL ANIMATICS **3 CREDITS**

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 also will study the history of animation and game design.

Recommended Prerequisites:
ART 149 or ART 121 and basic computer skills.

MGD 153 3D ANIMATION I: MAXON CINEMA 4D **3 CREDITS**

Encompasses all major aspects of creating 3D characters using animation software. Using developed characters, you will learn to animate for personality.

Recommended Pre/Co-requisites:
MGD 152 and basic computer skills.

MGD 161 ADOBE DIRECTOR I **3 CREDITS**

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 your projects. This course focuses on using Adobe Director to create games for both entertainment and for serious gaming in training and education.

Recommended Prerequisites:
MGD 111, MGD 112, and MGD 143.

MGD 163 SOUND DESIGN I: APPLE LOGIC PRO **3 CREDITS**

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 also will learn to use the computer as a full audio editing studio. This software is available only for the Mac Platform.

Recommended Prerequisites:
MGD 101 and basic computer skills.

MGD 164 DIGITAL VIDEO EDITING I: APPLE FINAL CUT STUDIO PRO **3 CREDITS**

Introduces 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 available only for the Mac Platform.

Recommended Prerequisites:
MGD 101 and/or MGD 104 and basic computer skills.

MGD 165 ADOBE AFTER EFFECTS I **3 CREDITS**

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.

Recommended Prerequisites:
MGD 111 and/or MGD 104 and basic computer skills.

MGD 167 GAME DESIGN I: TORQUE GAMING ENGINE **3 CREDITS**

Introduces 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.

Recommended Prerequisites:
MGD 143 or MGD 161 and basic computer skills.

MGD 202 POINT OF PURCHASE AND PACKAGING DESIGN **3 CREDITS**

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 also 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.

Recommended Prerequisites:
MGD 111 and MGD 112 and basic computer skills.

**MGD 211 ADOBE PHOTOSHOP II
3 CREDITS**

Develops and reinforces image composition techniques learned in Adobe Photoshop I. Fundamentals are continuously reinforced as new design techniques are introduced.

Recommended Prerequisite:
MGD 111 or permission of instructor.

**MGD 212 ADOBE
ILLUSTRATOR II
3 CREDITS**

Continues the 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.

Recommended Prerequisite: MGD 112 or permission of instructor.

**MGD 213 ELECTRONIC
PREPRESS
3 CREDITS**

Explores in detail the electronic prepress process. Students examine steps for preparing a digital file for trapping, output considerations and proofing techniques. Creating effective electronic designs and efficient use of today's software programs are also covered.

Recommended Prerequisites:
MGD 111, MGD 112, MGD 114, and/or MGD 113 or permission of instructor.

**MGD 216 ADOBE ACROBAT
PROFESSIONAL
3 CREDITS**

Concentrates on the high-end capabilities of Adobe Acrobat Professional software as a document conversion, presentation, form generation, secure document delivery, and press production tool. Students explore a wide range of techniques that can be applied to the web, graphics, interactive and presentation multimedia, commenting workflows, and print media. Adobe Acrobat Professional allows students to bridge the paper-to-digital divide—simply, powerfully, and securely.

**MGD 219 AUTODESK MAYA II
3 CREDITS**

Explores Maya's animation techniques in depth. You are exposed to rigging characters for animation.

Recommended Prerequisite:
MGD 119 or permission of instructor.

**MGD 241 WEB DESIGN II:
ADOBE DREAMWEAVER
3 CREDITS**

Expands on previously learned fundamentals of HTML introducing cascading style sheets, DHTML, JavaScripts and CGI forms. Color usage and interface design principles are emphasized in this course. In this course we'll examine Web sites that employ more complex structures, optimal site architecture and navigation necessary for larger and more complex sites.

Recommended Prerequisites:
MGD 111, MGD 112, and MGD 141 or permission of instructor.

**MGD 243 MOTION GRAPHIC
DESIGN II: ADOBE FLASH
3 CREDITS**

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.

Recommended Prerequisites:
MGD 111, MGD 112, and MGD 143 or permission of instructor.

**MGD 253 3D ANIMATION II:
MAXON CINEMA 4D
3 CREDITS**

Addresses advanced aspects of creating computerized 3D characters. You will examine facial animation, lip synchronization, scene design, and lighting set-ups.

Recommended Prerequisites:
MGD 152 and MGD 153 or permission of instructor.

**MGD 254 MULTIMEDIA
DESIGN AND PRODUCTION I:
ADOBE CAPTIVATE
3 CREDITS**

Provides an overview of the development of interactive, computer-based media for presentational or instructional use. Selection of appropriate media, screen design, user interfaces, branching techniques, and other design aspects will be illustrated using a hands-on approach. Basic multimedia concepts will be addressed, including: production, authoring and authoring tools, software and hardware selection, media preparation and presentation.

Recommended Prerequisites:
MGD 111, 112, 114, 216 and 143.

**MGD 257 ANIMATION
PRODUCTION
3 CREDITS**

Examines development of 3D animation from a production standpoint. The process of transforming conceptual designs into actual projects is explored. Students study the management function of those tasks associated with the business end of development. The student will produce a 3D animation project.

Prerequisite: MGD 257 is a Capstone class, which students should take in their final semester prior to graduation.

**MGD 261 ADOBE DIRECTOR II
3 CREDITS**

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. This course focuses on using Adobe Director to create games for both entertainment and for serious gaming in training and education.

Recommended Prerequisite:
MGD 161 or permission of instructor.

**MGD 263 SOUND DESIGN II:
APPLE LOGIC PRO
3 CREDITS**

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 available only for the Mac platform.

*Recommended Prerequisite:
MGD 163 or permission of instructor.*

**MGD 264 DIGITAL VIDEO
EDITING II: APPLE FINAL CUT
STUDIO PRO
3 CREDITS**

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 projects to various audiences.

*Recommended Prerequisite:
MGD 164 or permission of instructor.*

**MGD 265 ADOBE AFTER
EFFECTS II
3 CREDITS**

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.

*Recommended Prerequisite:
MGD 165 or permission of instructor.*

**MGD 267 GAME DESIGN II:
TORQUE GAMING ENGINE
3 CREDITS**

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.

*Recommended Prerequisite:
MGD 167 or permission of instructor.*

**MGD 269 MULTIMEDIA
DESIGN AND PRODUCTION II:
ADOBE CAPTIVATE
3 CREDITS**

A Capstone class, which students should take in their final semester prior to graduation. MGD 269 develops in-depth multimedia training utilizing specific multimedia development software. Students will research and design a multimedia education product. An authoring application will then be used to develop and distribute a working program or instructional package to one or more forms of media distribution. Current industry trends and preferences will dictate which software will be covered in each course section.

*Recommended Prerequisite:
MGD 254 or permission of instructor.*

**MGD 280 INTERNSHIPS
1-3 CREDITS**

Provides an opportunity to experience on-the-job shadowing and interacting with experts in a field of interest. You will intern at local professional businesses to prepare for the transition from student to professional.

*Prerequisite: Permission of MGD/PHO
Department Advisor.*

**MGD 285 INDEPENDENT
STUDY
1-3 CREDITS**

Provides the opportunity to independently learn new technology skills not offered in the classroom.

Qualified instructors provide one-on-one outcome objectives and review and oversee student progress.

Prerequisite: permission of instructor.

**MGD 289 CAPSTONE
1-3 CREDITS**

A demonstrated culmination of learning within a given program of study.

***MGD XXX ADVANCED
CHARACTER RIGGING:
AUTODESK MAYA
3 CREDITS**

Explores advanced character rigging features of a specific 3D modeling and animation software in depth. Students will understand working with joints, forward kinematic (FK) and inverse kinematic (IK) blending and adding controls. Students create spines using nested constraints and expressions to subdivide vertebra poses (Isner Spines). Students create spine inverse kinematic curves, rig body movements and characteristics, blending specific joints or movement of bone using FK, IK or Isner Spines, pivots, switching and bonesets. Students create facial control systems based on phonemes (visual unit of sound in spoken language), morphing, and creation of eye movements. Students create muscle systems, bind and paint skin, and test a final animated character.

***MGD XXX ADVANCED 3D
MODELING FOR GAMING:
AUTODESK 3D STUDIO MAX
3 CREDITS**

Focuses on advanced skills and techniques in 3D modeling and rendering in a specific 3D modeling software. Relevant tools and techniques, industry standards, specialized techniques, and additional resources are introduced. Advanced 3D-geometry manipulation, external rendering, post-processing and post-production rendering are stressed.

MGD XXX BUSINESS FOR CREATIVES IN: GRAPHIC DESIGN, PHOTOGRAPHY, ANIMATION, WEB DESIGN, AND MULTIMEDIA
3 CREDITS

Explores the important business practices and procedures of running a commercial, creative business. Topics include freelance opportunities, work for hire, self-promotion, creative representation, portfolio design, billing rates, client management, business forms, employee management, taxes, licenses, registration, bid processes, and copyright. Course may include visits by professionals in the field and discussion of career opportunities and professional organizations.

MIL – Milwright

MIL 101 LIFTING DEVICES
1 CREDIT

Introduces the student to the types of rigging/ lifting devices used in industry. Skills include the correct use of slings and common rigging hardware, including safe loading practices and the use of ANSI hand signals.

MIL 106 MILLWRIGHT LUBRICATION
1.5 CREDITS

Introduces 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; lubricant storage and handling.

MIL 107 INSTALLING BELTS CHAIN DRIVES AND BEARINGS
4 CREDITS

Covers the sizes, uses, and installation procedures of six types of drive belts and two types of chain drives. Methods to remove and troubleshoot, and install bearings will be explained.

MOT – Medical Office Technology

WWW.RRCC.EDU/HEALTH/MEDASST.HTML

MOT 110 MEDICAL OFFICE ADMINISTRATION
4 CREDITS

Introduces the administrative duties specifically used in medical offices.
Corequisite: MOT 120.

MOT 120 MEDICAL OFFICE FINANCIAL MANAGEMENT
3 CREDITS

Covers the practical uses of accounts and records with emphasis on accounting principles and analysis for use in a medical office.
Corequisite: MOT 110.

MOT 130 INSURANCE BILLING AND CODING
3 CREDITS

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 131 ADV INSURANCE BILLING/CODING
3 CREDITS

Prepares the student to code correctly, and optimize reimbursements for a full range of medical service by expanding

coverage of diagnostic and therapeutic procedures, official coding guidelines, APG's, APC's, DRG's, Medicare fraud and abuse.

Prerequisites: MOT 130 or permission of Instructor.

MOT 136 INTRODUCTION TO CLINICAL SKILLS
2 CREDITS

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.

Prerequisites: HPR 178.

MOT 138 MEDICAL ASSISTING LABORATORY SKILLS
4 CREDITS

Introduces students 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.

Prerequisites: HPR 178.

Corequisite: MOT 136.

MOT 140 MEDICAL ASSISTING CLINICAL SKILLS
4 CREDITS

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.

Prerequisites: BIO 106 or BIO 201 and BIO 202, HPR 178, MAT 060 or higher, MOT 136.

Corequisite: MOT 138.

MOT 150 PHARMACOLOGY FOR MEDICAL ASSISTANTS 3 CREDITS

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.

Prerequisites: BIO 106 or BIO 201 and BIO 202, HPR 178, MAT 060 or higher.

MOT 181 ADMINISTRATIVE INTERNSHIP 2 CREDITS

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.

Prerequisite: Successful completion of M.O. program requirements with a C or better in all core classes. Student must have completed the background check and permission of program coordinator to begin internship.

MOT 182 CLINICAL INTERNSHIP 3 CREDITS

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.

Prerequisite: Successful completion of M.A. program requirements with a grade of C or better in all core classes. Students must have a completed background check, all immunizations, a CPR card and permission of program coordinator to begin internship.

MOT 183 MEDICAL ASSISTANT INTERNSHIP 5 CREDITS

Provides supervised placement in a contracted facility for guided experience in application of knowledge and skill acquired in the classroom. The student assists with a variety of business and clinical procedures. Positions are non paid due to CAAHEP requirement.

Prerequisite: successful completion of M.A. program requirements with a grade of C or better in all core classes. Students must have a completed background check, all immunizations, a CPR card and permission of program coordinator to begin internship.

MUS – Music

WWW.RRCC.EDU/MUSIC

MUS 100 FUNDAMENTALS OF MUSIC THEORY 3 CREDITS

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

Presents music fundamentals, diatonic four-part harmony, analysis and keyboard harmony for non-music majors.

Prerequisite: MUS 100 or permission of the instructor.

MUS 105 INTRODUCTION TO ELECTRONIC/COMPUTER MUSIC 3 CREDITS

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 106 SONGWRITING 3 CREDITS

Examines the various processes and styles of songwriting and offers techniques and ideas for creating songs ranging from functional to original. Students will explore the common factors in all styles of songwriting, and use them to bring out creative song ideas whether the student has written songs before or has just always wanted to see if one could. A basic knowledge of music reading for any instrument and elementary music theory is recommended, but not required.

MUS 110 MUSIC THEORY I 3 CREDITS

Presents music fundamentals, diatonic four-part harmony, analysis, ear training, and keyboard harmony. This course is appropriate for music majors transferring to a 4-year program.

Prerequisite: MUS 100 or permission of the instructor.

Corequisite: MUS 112 Ear Training/ Sight-Singing I Lab.

MUS 112 EAR TRAINING/ SIGHT-SINGING I LAB 1 CREDIT

Presents exercises in sight-singing with melodic and rhythmic dictation.

Prerequisite: Follow sequence of MUS 100 or 101, or equivalent proficiency.

Corequisite: MUS 110 - Theory I.

**MUS 120 MUSIC APPRECIATION
3 CREDITS**

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.

This course is one of the Statewide Guaranteed Transfer courses. GT-AH1

**MUS 121 MUSIC HISTORY I
3 CREDITS**

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. This course is one of the Statewide Guaranteed Transfer courses. GT-AH1.

**MUS 122 MUSIC HISTORY II
3 CREDITS**

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. This course is one of the Statewide Guaranteed Transfer courses. GT-AH1

**MUS 123 SURVEY OF WORLD MUSIC
3 CREDITS**

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. This course is one of the Statewide Guaranteed Transfer courses. GT-AH1

**MUS 124 AMERICAN MUSIC SURVEY
3 CREDITS**

Surveys American music as a panorama of distinct yet parallel streams of popular, folk, sacred, and classical music that reflect the uniquely diverse character of the United States. It emphasizes the development of tools for intelligent listening and appreciation. Major topics will include comparing and contrasting American musical styles across regions and time, and examining the characteristics of music that has arisen from the history and musical traditions of the many immigrants to America's shores.

**MUS 125 HISTORY OF JAZZ MUSIC
3 CREDITS**

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 ROCK AND POP
3 CREDITS**

Provides a survey of basic materials of music, musical forms, media, genres, and musical periods of Rock and Pop music. It emphasizes the development of tools for intelligent listening and appreciation.

**MUS 141 PRIVATE INSTRUCTION I
2 CREDITS**

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.
Prerequisite: Permission (not audition) of the department. An additional fee is required.

**MUS 142 PRIVATE INSTRUCTION II
2 CREDITS**

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.
Prerequisite: MUS 141 in same instrument. Permission (not audition) of the department. An additional fee is required.

**MUS 143 PRIVATE INSTRUCTION III
2 CREDITS**

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.
Prerequisite: MUS 142 in same instrument. Permission (not audition) of the department. An additional fee is required.

**MUS 151 ENSEMBLE I
1 CREDIT**

Rehearses and performs various types of musical literature. First year, first term.
Prerequisite: Permission of instructor.

**MUS 152 ENSEMBLE II
1 CREDIT**

Rehearses and performs various types of musical literature. First year, second term.

Prerequisite: Permission of instructor.

**MUS 153 ENSEMBLE III
1 CREDIT**

Rehearses and performs various types of musical literature. First year, third term.

Prerequisite: Permission of instructor.

**MUS 175 SPECIAL TOPICS
1-6 CREDITS**

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).

Prerequisite: Permission of instructor.

**MUS 184 INTERNSHIP
1-3 CREDITS**

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.

Prerequisite: Permission of instructor.

**MUS 241 PRIVATE
INSTRUCTION I
2 CREDITS**

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.

Prerequisite: MUS 142 or MUS 143 in same instrument. Permission (not audition) of the department. An additional fee is required.

**MUS 242 PRIVATE
INSTRUCTION II
2 CREDITS**

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.

Prerequisite: MUS 241 in same instrument. Permission (not audition) of the department. An additional fee is required.

**MUS 243 PRIVATE
INSTRUCTION III
2 CREDITS**

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.

Prerequisite: MUS 242 in same instrument. Permission (not audition) of the department. An additional fee is required.

**MUS 251 ENSEMBLE I
1 CREDIT**

Rehearses and performs various types of musical literature. Second year, first term.

Prerequisite: Permission of instructor.

**MUS 252 ENSEMBLE II
1 CREDIT**

Rehearses and performs various types of musical literature. Second year, second term.

Prerequisite: Permission of instructor.

**MUS 253 ENSEMBLE III
1 CREDIT**

Rehearses and performs various types of musical literature. Second year, third term.

Prerequisite: Permission of instructor.

**MUS 275 SPECIAL TOPICS
1-3 CREDITS**

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).

Prerequisite: Permission of instructor.

**MUS 284 INTERNSHIP
1-3 CREDITS**

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.

Prerequisite: Permission of instructor.

NAT – Nail Technician

**WWW.RRCC.EDU/
WARRENTech**

**NAT 110 INTRODUCTION TO
MANICURES AND PEDICURES
3 CREDITS**

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**

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

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

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 – Nurse Aide

WWW.RRCC.EDU/HEALTH

NUA 101 CERTIFIED NURSE AIDE HEALTH CARE SKILLS 4 CREDITS

Prepares the student to perform the fundamental skills of the nurse aide. Basic nursing skills, communication skills, restorative services, personal care skills, safety and emergency care issues are covered. Includes knowledge and/or principles of asepsis, OSHA and HIPAA regulations. Ethical behaviors, cultural sensitivity and principles of mental health will be addressed, as well as patient/resident rights.

Prerequisite: HPR 102, A grade of C or higher in ENG 121, or appropriate SAT, ACT, or ACCUPLACER score.

Corequisite: NUA 170 Nurse Aide Clinical 1 credit.

NUA 170 NURSE ASSISTANT CLINICAL EXPERIENCE 1 CREDIT

Applies the knowledge gained from NUA 101 to patient care.

Prerequisite: HPR 102.

Corequisite: NUA 101 Certified Nurse Aide Health Care Skills.

NUR – Nursing

WWW.RRCC.EDU/HEALTH

NUR 201 IV THERAPY FOR LPN 5 CREDITS

Provides LPNs 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 the LPN for IV certification under the Colorado State Board of Nursing Guidelines.

NUR 290 REGISTERED NURSE REFRESHER 10 CREDITS

Presents material that is designed for all RNs, regardless of time absent from nursing practice, to explore avenues of employment. Clinical experience is held in the hospital to refresh and update basic nursing skills. Other opportunities for clinical experience may include home health, long-term, rehabilitation, and hospice.

Prerequisite: HPR 102.

Corequisite: NUR 291.

NUR 291 REGISTERED NURSE CLINICAL EXPERIENCE 2 CREDITS

Applies the knowledge gained from NUR 290 in a clinical setting. Students will demonstrate skill attainment gained in NUR 290.

Prerequisite: HPR 102.

Corequisite: NUR 290.

OSH – Occupational Safety Technician

OSH 127 10-HR CONSTRUCTION INDUSTRY STANDARDS 1 CREDIT

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.

OSH XXX CONFINED SPACE SAFETY

1 CREDIT

Covers the definition of confined space; OSHA considerations and permit requirements; monitoring instruments; Students experience confine space working conditions. Rescue methods and assistance expectations are reviewed.

OSH XXX PERSONAL CLIMBING AND RESCUE

1 CREDIT

Introduces students to the use of Tracktel harnesses for ladder climbing. Outlines the definitions and procedures associated with safe rigging practices in the wind energy industry. This skills upgrade course will develop rigging competency for apprentices or journeypersons working on an industrial site.

OSH XXX RIGGING AND LIFTING DEVICES

1 CREDIT

Introduces the student to the types of rigging/ lifting devices used in industry. Skills include the correct use of slings and common rigging hardware, including safe loading practices and the use of ANSI hand signals.

PAP – Physician Assistant Program

WWW.RRCC.EDU/PA

PAP 201 PROFESSIONAL SEMINAR I

1 CREDIT

Provides the physician assistant student with an Introduction to the profession. Topics include ethics, professional behavior, legal aspects of practice, medical decision making, evaluation of medical literature, and Issues important to the profession.

PAP 202 PROFESSIONAL SEMINAR II

1 CREDIT

Provides the physician assistant student with an Introduction to the profession. Topics include ethics, professional behavior, legal aspects of practice, medical decision making, evaluation of medical literature, and Issues important to the profession. This course is a continuation of PAP 201.

PAP 203 PROFESSIONAL SEMINAR III

1 CREDIT

Provides the physician assistant student with an Introduction to the profession. Topics include ethics, professional behavior, legal aspects of practice, medical decision making, evaluation of medical literature, and Issues important to the profession. This course is a continuation of PAP 202.

PAP 204 PROBLEM-BASED LEARNING I

1 CREDIT

Requires students to identify the signs and symptoms of common disorders, to further evaluate those disorders through small group research and learning, and to prepare a treatment plan to preserve health or mitigate suffering. Students present the selected case studies in small groups either orally or in a written format. This course also presents evidence-based health care as it relates to clinical outcomes. Faculty facilitators act as coaches to direct the problem-based learning in the small groups.

PAP 205 PROBLEM-BASED LEARNING II

1 CREDIT

Requires students to identify the signs and symptoms of common disorders, to further evaluate those disorders through small group research and learning, and to prepare a treatment plan to

preserve health or mitigate suffering. Students present the selected case studies in small groups either orally or in a written format. This course also presents evidence-based health care as it relates to clinical outcomes. Faculty facilitators act as coaches to direct the problem-based learning in the small groups. This course is a continuation of PAP 204.

PAP 206 PROBLEM-BASED LEARNING III

1 CREDIT

Requires students to identify the signs and symptoms of common disorders, to further evaluate those disorders through small group research and learning, and to prepare a treatment plan to preserve health or mitigate suffering. Students present the selected case studies in small groups either orally or in a written format. This course also presents evidence-based health care as it relates to clinical outcomes. Faculty facilitators act as coaches to direct the problem-based learning in the small groups. This course is a continuation of PAP 205.

PAP 207 CLINICAL MEDICINE I

4 CREDITS

Teaches students basic diagnostic testing common to practice as a physician assistant. Emphasizes indications, normal values, sensitivity and specificity of diagnostic testing. Microscopic techniques and identification are covered using normal and abnormal specimens.

PAP 208 CLINICAL MEDICINE II

4 CREDITS

Provides a beginning understanding of how clinicians approach the diagnosis and treatment of specific disease states. In conjunction with 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. Includes cardiopulmonary, pulmonary, genitourinary, endocrine, hematology, oncology, immunologic, and infectious disease.

PAP 209 CLINICAL MEDICINE III 3 CREDITS

A continuation of PAP 208 with additional presentations and small group experiences that examine common patient conditions in neurology, ophthalmology, otolaryngology, dermatology, orthopedics, and geriatrics. Focuses on developing patient and assessment treatment plans. Students learn to identify the signs and symptoms of common disorders, to further evaluate those disorders through appropriate testing, and to prepare a treatment plan to preserve health or mitigate suffering.

PAP 210 HISTORY AND PHYSICAL EXAMINATION I 2 CREDITS

Teaches the techniques required to perform the complete physical examination of patients of all ages. Practice sessions and mock patients are used to develop the practical skills necessary to perform these tasks.

PAP 211 HISTORY AND PHYSICAL EXAMINATION II 2 CREDITS

Teaches the techniques required to perform the complete physical examination of patients of all ages. Practice sessions and mock patients are used to develop the practical skills necessary to perform these tasks. This course is a continuation of PAP 210.

PAP 212 HISTORY AND PHYSICAL EXAMINATION III 2 CREDITS

Teaches the techniques required to perform the complete physical examination of patients of all ages. Practice sessions and mock patients are used to develop the practical skills necessary to perform these tasks. This course is a continuation of PAP 210.

PAP 213 CLINICAL PROCEDURES 1 CREDIT

Teaches basic diagnostic and therapeutic clinical skills and procedures. Covers preparation of the patient, anatomical considerations, patient consent, potential complications, and clarification of therapeutic and diagnostic value of clinical procedures. Includes wound management, anesthesia, suturing techniques, injections and IV access, nasogastric intubation, and immobilization via casting and splinting.

PAP 214 BEHAVIORAL HEALTH 1 CREDIT

Explores the relationship between physical illness and psychosocial issues in the medical setting. Examines interviewing and communication styles unique to behavioral medicine. The presentation and recognition of major psychiatric disorders, mood and anxiety disorders, and substance abuse are addressed. Covers the appropriate role of psychotherapeutic agents, including anxiolytics, antidepressants, mood stabilizers and neuroleptics.

PAP 220 HUMAN ANATOMY & DEVELOPMENT 3 CREDITS

Presents functional and applied anatomy as it relates to common clinical findings. Provides the student with a solid understanding of the

structure of the human body, with emphasis on normal vs. abnormal findings. Covers the musculoskeletal, nervous, cardiovascular, urinary, respiratory, digestive, and reproductive systems.

PAP 221 BIOCHEMISTRY 3 CREDITS

Introduces 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 222 PHYSIOLOGY 3 CREDITS

Provides the student with an improved understanding of human physiology as it relates to clinical medicine. Through lectures and examinations, students study the functional organization of the human body, membrane physiology, nerve and muscle tissue function, the cardiovascular system, the lymphatic system, the immune system, respiration, digestion, renal function, metabolism and temperature regulation, endocrinology and human reproduction.

PAP 223 PATHOPHYSIOLOGY 2 CREDITS

Requires students to focus on the clinical pathophysiology of human illness through the examination of the cellular and organ-based aspects of disease. Emphasis is placed on how the disease process begins, progresses and ends. Presentations in PAP 221 (Clinical Medicine) track with the material in this course, allowing students to correlate the

pathophysiology of specific diseases with the medical and surgical management of those conditions.

**PAP 224 PHARMACOLOGY I
1 CREDIT**

Introduces the study of therapeutic pharmacology with an emphasis on pharmacokinetics and pharmacodynamics. The physiology that underlies drug contraindications, interactions, and adverse effects is reviewed.

**PAP 225 PHARMACOLOGY II
2 CREDITS**

Builds on PAP 224 and enables the student to apply the principles of pharmacology to the prevention and treatment of specific human disorders. Special emphasis is placed on the safe and appropriate use of medications.

**PAP 226 PHARMACOLOGY III
2 CREDITS**

Applies the principles of pharmacology to the prevention and treatment of specific human disorders. Special emphasis is placed on the safe and appropriate use of the medications used for the diseases covered in the physician assistant program curriculum during the third didactic semester.

**PAP 231 PROFESSIONAL
SEMINAR IV
1 CREDIT**

Prepares the senior physician assistant student for entry to the profession. Topics includes advanced medical ethical Issues, professional behavior, legal aspects of practice, medical decision making, evaluation of medical literature, and current controversies in medicine.

**PAP 232 PROFESSIONAL
SEMINAR V
1 CREDIT**

Prepares the senior physician assistant student for entry to the profession. Topics includes

advanced medical ethical Issues, professional behavior, legal aspects of practice, medical decision making, evaluation of medical literature, and current controversies in medicine. This course is a continuation of PAP 231.

**PAP 233 PROFESSIONAL
SEMINAR VI
1 CREDIT**

Prepares the senior physician assistant student for entry to the profession. Topics includes advanced medical ethical Issues, professional behavior, legal aspects of practice, medical decision making, evaluation of medical literature, and current controversies in medicine. This course is a continuation of PAP 232.

**PAP 234 PROBLEM-BASED
LEARNING IV
1 CREDIT**

Requires senior physician assistant students to present actual clinical cases they have seen during clinical clerkships. Students must analyze and evaluate clinical cases, and prepare case presentations in a grand rounds type format. Senior students will act as mentors to junior students In the small group setting. This course also presents evidence-based health care as it relates to clinical outcomes.

**PAP 235 PROBLEM-BASED
LEARNING V
1 CREDIT**

Requires senior physician assistant students to present actual clinical cases they have seen during clinical clerkships. Students must analyze and evaluate clinical cases, and prepare case presentations in a grand rounds type format. Senior students will act as mentors to junior students In the small group setting. This course also presents evidence-based health care as it relates to clinical outcomes. This course is a continuation of PAP 234.

**PAP 236 PROBLEM-BASED
LEARNING VI
1 CREDIT**

Requires senior physician assistant students to present actual clinical cases they have seen during clinical clerkships. Students must analyze and evaluate clinical cases, and prepare case presentations in a grand rounds type format. Senior students will act as mentors to junior students In the small group setting. This course also presents evidence-based health care as it relates to clinical outcomes. This course is a continuation of PAP 235.

**PAP 240 FAMILY MEDICINE
CLERKSHIP I
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of the Family Medicine practice. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 241 FAMILY MEDICINE
CLERKSHIP II
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of the Family Medicine practice. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long. This is a continuation of PAP 240.

**PAP 242 INTERNAL MEDICINE
CLERKSHIP I
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of Internal Medicine. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 243 INTERNAL MEDICINE CLERKSHIP II
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of Internal Medicine. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long. This is a continuation of PAP 242.

**PAP 244 WOMEN'S HEALTH CLERKSHIP
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of Women's Health. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 245 EMERGENCY MEDICINE CLERKSHIP
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of Emergency Medicine. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 246 SURGERY CLERKSHIP
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of Surgery. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 247 PEDIATRICS CLERKSHIP
3 CREDITS**

Prepares the physician assistant student to assess and manage patients in a pediatric setting.. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 248 PSYCHIATRY CLERKSHIP
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of the in-patient or out-patient behavioral health practice.. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 249 GERIATRICS CLERKSHIP
3 CREDITS**

Prepares the physician assistant student to assess and manage geriatrics patients. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 250 ELECTIVE CLERKSHIP I
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of their choice. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

**PAP 251 ELECTIVE CLERKSHIP II
3 CREDITS**

Prepares the physician assistant student to assess and manage patients within the setting of their choice. The student provides care to patients under the direct supervision of a practicing clinician (preceptor). Clerkships are 4 weeks long.

PAP 275 SPECIAL TOPICS VARIABLE CREDITS

Provides students with a vehicle to pursue In depth exploration of special topics of interest.

PED – Physical Education

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**PED 100 BEGINNING GOLF
1 CREDIT**

Introduces a basic course in golf designed for those who have had little or no formal instruction or for those with some experience who are interested in improving some aspect of their game. Includes driving range, putting green, and on-course play.

**PED 102 VOLLEYBALL
1 CREDIT**

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**

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**

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**

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 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**

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 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.

Prerequisite: PED 110.

**PED 112 CONDITIONING LAB
1 CREDIT**

Offers an independent self-paced format of conditioning exercises to meet individual needs. Emphasizes the value of lifetime fitness and its contribution to achieving personal health and wellness. Students utilize cardiorespiratory, muscular strength and endurance exercises to promote positive changes in health-related fitness components.

**PED 113 FITNESS CONCEPTS
1.0 CREDIT**

Focuses on providing information and guidelines for moving toward a healthier lifestyle. Includes classroom instruction, an individual fitness evaluation, computerized analysis of results, and a prescribed exercise program utilizing the equipment and exercise options available at a fitness center.

**PED 116 WEIGHT TRAINING
1 CREDIT**

Offers basic instruction and practice in weight training. You will use weight training equipment in accordance with your abilities and goals. Emphasis is placed upon weight training equipment orientation, correct lifting techniques, and basic program design for men and women.

**PED 123 BICYCLE TOURING
1 CREDIT**

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**

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 and review bicycle anatomy and basic maintenance and repairs.

**PED 125 BOWLING
1 CREDIT**

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**

Enables the student to 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**

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**

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 you need for safe scuba diving. This course prepares you for open-water (PADI) certification.

**PED 131 NORDIC SKIING
1 CREDIT**

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**

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**

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**

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**

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**

Emphasizes 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, and 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**

Focuses on Pilates matwork to increase core strength, overall muscle 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**

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 and 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**

Offers guided instruction in yoga. You will practice yoga according to your individual fitness levels and abilities. Emphasis is placed on enhancing general health and well-being through the performance of yoga strength, flexibility, balance, and relaxation techniques and exercises.

**PED 148 YOGA II
1 CREDIT**

Increases awareness of yoga and its physical and mental benefits. The concepts of basic yoga are carried into additional areas.
Prerequisite: PED 147 or permission of instructor.

**PED 150 ROCK CLIMBING I
2 CREDITS**

Designed to introduce basic rock climbing and to 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, and safety and climbing etiquette and terminology.

**PED 151 ROCK CLIMBING II
2 CREDITS**

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.
Prerequisite: PED 150 or permission of instructor.

**PED 153 HIKING
1 CREDIT**

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 during weekend hikes.

**PED 154 BACKPACKING
2 CREDITS**

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 will encourage 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

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

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

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

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

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

Emphasizes the physiological, psychological, and practical principles of survival. Survival equipment, wilderness improvising techniques, and wilderness dangers are included.

PED 166 WINTER WILDERNESS SURVIVAL SKILLS
2 CREDITS

Emphasizes winter survival techniques in the nivean 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

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

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

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

Emphasizes intermediate paddling technique and river reading skills for both tandem and solo boating. You will learn safety procedures and equipment hazard evaluation and how to minimize your impact on river and lake environments.

PED 237 PADDLE SPORTS
2 CREDITS

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

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 you perform to the standards expected of employees of the organizations in which the internship occurs.

PED 213 FIRE ACADEMY FITNESS

2.5 CREDITS

Focuses on educating the fire science student in the exercise, nutritional and stress management principles needed to effectively meet the demands of firefighting. The course includes an Individual fitness evaluation, computerized analysis of results and a prescribed exercise program.

PED 233 ZUMBA

1 CREDIT

A compilation of high energy, motivating music with unique moves and choreography combinations. Zumba fuses Latin and international music and dance themes to create a dynamic, exciting, effective fitness system. The routines feature aerobic/fitness interval training with co combination of fast and slow rhythms that tone and sculpt the body. Zumba utilizes the principles of fitness interval training and resistance training to maximize caloric output, fat burning and total body toning. It is a mixture of body sculpting movements with easy to follow dance steps.

PED 285 INDEPENDENT STUDY

1 CREDIT

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

Enables you to study the field of physical education and sports, including trends, precedents, and their effects in the health and total wellness of those involved.

PER 128 INTRODUCTION TO RECREATION

2 CREDITS

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

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 and as a 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

Provides you with 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 to prevent drowning and

other incidents. The course also teaches other skills needed to be a professional lifeguard.

PER 152 AVALANCHE SAFETY

1 CREDIT

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

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

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

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**

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**

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

**PER 252 PRINCIPLES OF
OUTDOOR RECREATION
3 CREDITS**

Includes lectures and practical outdoor experiences relating to problems and trends in outdoor recreation.

**PER 253 OUTDOOR
LEADERSHIP
2 CREDITS**

An introduction to the development, acquisition, and application of outdoor leadership skills and knowledge. You are exposed to the latest information philosophy, and techniques necessary to safely conduct outdoor programs and expeditions as an outdoor leader. Skills are applied under actual field conditions. Emphasis is on 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**

Covers planning and methods required to teach mountaineering skills. You will give lectures and conduct field trips.

**PER 264 OFFICIATING HIGH
SCHOOL BASEBALL
1 CREDIT**

Provides training and instruction in high school baseball umpiring. The class will take students through the ten rules of baseball, as well as provide training in the on-field mechanics of calling safes and outs, proper field positioning for all baseball situations, and working the plate calling balls and strikes, and handling situations which may arise during the discharge of umpiring duties. The successful student will be tested and will be eligible to be credentialed as a registered Colorado high school baseball umpire through the Colorado High School Baseball Umpires Association and be eligible to begin working high school games throughout the state of Colorado. This course features classroom instruction combined with a 12-hour block of simulated, intensive mechanics training followed by two to three on-field live scrimmages. All students will be supervised and guided by instructors who are registered and trained high school baseball umpires. Appropriate CHSBUA materials and handouts will be provided in class.

**PER 265 OFFICIATING HIGH
SCHOOL FOOTBALL
1 CREDIT**

Provides you with an opportunity to develop the skills and awareness of the 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 275 SPECIAL TOPICS
1-12 CREDITS**

Provides you with a vehicle to pursue in-depth exploration of special topics of interest.

PHI – Philosophy

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**PHI 111 INTRODUCTION TO
PHILOSOPHY
3 CREDITS**

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
3 CREDITS**

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**

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**

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**

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**

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**

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**

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**

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**

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**

Investigates the various ways in which religion and American culture interact. Beginning with the religion of Native Americans, which existed in a pre-modern society where religion went unchallenged as the 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**

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**

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**

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**

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**

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**

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**

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 218 ENVIRONMENTAL ETHICS **3 CREDITS**

Critically analyzes theories of value of the natural world. Topics include the relation between scientific and moral principles; theories of the moral worth of persons, animals, plants and other natural objects; historical, religious and cultural influences on conceptions of nature; alternative accounts of human relationships and responsibilities to nature, including deep ecology and eco-feminism; and the connection between moral and political values and economic policies.

PHI 275 SPECIAL TOPICS IN PHILOSOPHY **3 CREDITS**

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

PHO – Photography

WWW.RRCC.EDU/MULTIMEDIA

Photography classes reside under both the ART and PHO prefixes, and classes are held in the Multimedia Graphic Design Department.

PHO 143 PERCEPTION & PHOTOGRAPHY I **3 CREDITS**

Presents the fundamentals of visual perception and design and seeing in the photographic medium. Topics include the psychology of seeing, value exercises, conceptual and perceptual exercises, depth representation, figure/ground, organization, gestalt principles, quality of light, and the development of ideas.

PHO 159 DIGITAL ASSET MANAGEMENT **2 CREDITS**

Instructs you in the use of specialized programs to manage the large collection of digital captures you are likely to encounter as a professional. The large number of files created by a digital photographer requires a systematic method of cataloging and offers various means of presentation. This course will teach a workflow for the cataloging and various methods of presenting the images to the public and clients using digital asset management software and other supplemental programs.

Recommended Prerequisite: ART 143 and 243 or permission of instructor.

PHO 201 PROFESSIONAL PHOTOGRAPHY III **3 CREDIT**

Explores photography technique with emphasis on history, theory, and assimilation of ideas into the students' creative work. Includes the development of a comprehensive portfolio

Recommended Prerequisite: ART 138 and 139 or ART 143 and 243 or permission of instructor.

PHO 204 COMMERCIAL STUDIO LIGHTING **3 CREDITS**

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.

Recommended Prerequisite: ART 138 or ART 143.

PHO 205 PROFESSIONAL DIGITAL PHOTOGRAPHY I **3 CREDIT**

Introduces the basic concepts of digital imaging as applied to photography. Using applicable technology and hands on experience, modern developments are presented leading to the present applications of digital imaging which combine traditional photographic ideas with electronic media. Enables the student to learn how to operate image manipulation software using a variety of scanning equipment, software tools and output devices by executing new assignments and applying these technologies to their photographic process.

Recommended Prerequisite: ART 143 or permission of instructor.

PHO 221 DIGITAL COLOR PHOTOGRAPHY I
3 CREDITS

Introduces you to the production of color photographic images, including the technical reproduction of images and the effective use of color. The reproduction of color images will be done exclusively using digital print technology while an overview of color reproduction systems; CMY (Film and Print), RGB, and CYMK will be covered. The use of color films, both color negative and color transparency, and the use of digital capture also will be topics for this class. Completion of exercises in the effective use of color and color reproduction techniques will be required.

Recommended Prerequisite: ART 143 or permission of instructor.

PHO 222 DIGITAL COLOR PHOTOGRAPHY II
3 CREDITS

Continues the development of technical and visual skills in the employment of color photography. Color transparency film is the primary medium for capturing images, and digital technology is used for print production. More sophisticated, aesthetic use of color, as well as more refined printing, is expected. The implementation of color management to create more predictable color print matching with the computer monitor is also covered in this class. Digital camera capture is used in some assignments as an alternative to film.

Recommended Prerequisite: ART 143 and PHO 221 or permission of instructor.

PHO 235 ARCHITECTURAL PHOTOGRAPHY
3 CREDIT

Covers the more advanced aspects of commercial/ architectural photography. Students will explore photographing subjects ranging from products to buildings with an emphasis on meeting the design demands of commercial clients, stock agencies and publishers. Various film types, formats and print reproduction aspects will be explored in depth.

PHO 236 PRODUCT PHOTOGRAPHY
3 CREDIT

A continuation of View Camera and Lighting Techniques, emphasizing studio product illustration using color transparency film and digital capture. Advance techniques in lighting and further development of proficiency with the view camera and advanced aspects of commercial illustration photography. The focus is on design requirements, exploration of various subject matter and printing reproduction requirements.

Recommended Prerequisite: ART 138 and 139 or ART 143 and 243 or permission of instructor.

PHO 240 FIELD TECHNIQUES AND EXPLORATION
1 CREDIT

Focuses on the exploration, personal inspiration and the development of an expressive style beyond the influence of the college local and its geographic confines. Lecture/ demonstration topics will include film, exposure, care and use of equipment, light and composition as well as preparation for the field component of this course.

PHO 260 EVENT & WEDDING PHOTOGRAPHY
3 CREDITS

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.

Prerequisite: ART 138 or ART 143.

***PHO 266 PROFESSIONAL DIGITAL WORKFLOW (ADOBE LIGHTROOM)**
3 CREDITS

Concentrates on developing a seamless professional workflow for digital photography, integrating all aspects of digital photography, including shooting Camera RAW in the field, conversion of files to digital negatives, color calibration, importing, sorting and developing images, to final print output. Students will understand the workflow associated with importing, processing, managing, and showcasing large volumes of digital photographs including the use of the Library module for importing and managing photos; the Develop module for fundamental photographic adjustments and processing of hundreds of photographs at a time; and using the Slideshow, Web, and Print modules to easily present photos onscreen, online, or in print.

Recommended Prerequisite: ART 143.

***PHO XXX FINISH AND DISPLAY/FRAMING
1 CREDIT**

Presents 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 XXX MASTERING BLACK-AND-WHITE OUTDOOR PHOTOGRAPHY
1 CREDIT**

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.

Prerequisites: ART 138 and ART 139 or ART 143 and ART 243 or permission of instructor.

***PHO XXX DARKROOM ALTERNATIVE PROCESSES
3 CREDITS**

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.

Prerequisite: ART 138.

***PHO XXX OUTDOOR PORTRAIT WORKSHOP
1 CREDIT**

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 use 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.

Recommended Prerequisite: ART 138 or ART 143.

***PHO XXX CLOSE-UP AND MACRO PHOTOGRAPHY
3 CREDITS**

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.

Recommended Prerequisite: ART 138 or ART 143 or permission of instructor.

* Courses are currently under review by RRCC Curriculum Committee.

PHY – Physics

WWW.RRCC.EDU/PHYSICS

**PHY 105 CONCEPTUAL PHYSICS
4 CREDITS**

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 107 ENERGY SCIENCE AND TECHNOLOGY
4 CREDITS**

Provides an in-depth look at the science of energy and energy technologies, with a focus on renewable energy resources and clean technologies. The course will provide a background in the physics of energy, non-renewable energy methods, the problems of energy transfer and loss and the current state of technology. This course includes laboratory experience.

**PHY 111 PHYSICS: ALGEBRA-BASED I
5 CREDITS**

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.

Prerequisite: MAT 121.

**PHY 112 PHYSICS: ALGEBRA-BASED II
5 CREDITS**

A continuation of the PHY 111 course. Topics covered in this class include: sound waves, electric fields, electric circuits, magnetic fields, optics, and modern physics.

Prerequisite: PHY 111.

**PHY 211 PHYSICS: CALCULUS-BASED I
5 CREDITS**

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 advanced sciences.

Prerequisite: MAT 201.

PHY 212 PHYSICS: CALCULUS-BASED II 5 CREDITS

A continuation of the PHY 211 course. Some of the topics covered in this class include: electric fields, electric circuits, magnetic fields, electromagnetic induction, light, and optics.

Prerequisite: PHY 211.

PLU – Plumbing

WWW.RRCC.EDU/PLUMBING

PLU 100 INTRODUCTION TO PLUMBING 4 CREDITS

Introduces the student to the plumbing trade, providing them with the opportunity to learn basic skills needed to work in the plumbing industry. The course includes work in the classroom and shop. Students will work with plastic, copper, steel and cast iron pipe. Students will be able to identify and apply common DWV, copper and threaded fittings. Job safety and introduction to isometric drawing are also included in this course.

Corequisite: OSH 127.

PLU 101 PIPING SKILLS 4 CREDITS

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.

Corequisite: OSH 127.

PLU 104 PLUMBING SERVICE 4 CREDITS

Allows you to learn how to diagnose and repair common problems associated with plumbing components and systems. Topics will include faucet repair, water heater replacement and repair, drain cleaning, water closet repair, piping repairs, finding the source of leaks and evaluating problems for repair or replacement. Students will learn customer relations and communication skills.

PLU 105 BASIC ELECTRICITY 4 CREDITS

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

Corequisite: OSH 127.

PLU 108 SOLDERING AND BRAZING SKILLS 0.5 CREDITS

Allows you to learn proper soldering and brazing skills when joining copper tube and fittings. Topics include safety, proper soldering and brazing skills, how to assess joint quality and basic center-to-center measurement.

PLU 111 PLUMBING APPRENTICE YR1 SEM1 5 CREDITS

Introduces the apprentice to the plumbing profession. This course is the first year, first semester, of an eight semester, four year apprenticeship. It is based on the PHCC national curriculum. Students are introduced to current Colorado Plumbing Regulations and Laws, basic application of tools and materials, application of mathematics skills and the importance of the plumbing profession in our society.

PLU 112 PLUMBING APPRENTICE YR1 SEM2 5 CREDITS

Continues to train the plumbing apprentice. This course completes the first year of a four year apprenticeship. It is based on the PHCC national curriculum. Students study science related to the plumbing profession, learn about common plumbing fixtures, start working with building plans and drawings, apply specific pipe installation requirements.

PLU 120 RESIDENTIAL PLUMBING 4 CREDITS

Enables the student to design and install residential plumbing systems. (Course does not cover DWV systems: see PLU 130.) Students will work in the shop installing systems and in the classroom designing systems. Topics include the application of code requirements, fuel piping systems, water piping systems, rough-in measurements and installation practices. Students will also learn to install components, such as water heaters, tub/shower valves, a variety of shower enclosures and other fixtures.

Prerequisites: PLU 100, PLU 101, OSH 127 or permission of the instructor.

PLU 121 PLUMBING APPRENTICESHIP YR 2 SEM 1 5 CREDITS

Continues the education from the first year. The main emphasis of the course is the design and installation of water distribution systems, including water heaters, and their code requirements. Other topics include job safety, additional plumbing mathematics, and science related to plumbing systems.

**PLU 122 PLUMBING
APPRENTICESHIP YR 2 SEM 2
5 CREDITS**

Completes the second year of the PHCC national apprenticeship curriculum. The emphasis of this course is the design and installation of DWV systems that meet code requirements. Other topics include code and design requirements for: storm drainage systems, sewage and sump pumps and installation of plastic and cast iron DWV systems.

**PLU 130 BASIC DRAIN, WASTE
AND VENT
4 CREDITS**

Gives the students the opportunity to learn how to design drain, waste and vent systems. Chapters 7 and 9 of the plumbing code will be discussed in the classroom and applied in the shop. Other topics include DWV materials, sizing systems, terminology, and practical application of code tables, traps and interceptors. Students will design DWV systems in the classroom and build the system in the shop, thereby developing their isometric drawing skills.

Prerequisites: PLU 100, PLU 101, OSH 127 or permission of the instructor.

**PLU 150 CODE AND PIPING
CALCULATIONS
2 CREDITS**

Reviews and applies code and piping calculation. Topics include calculations for the following: pipe and cylindrical area and volume, pipe circumference, rectangular area and volume, offsets, water volume and weight grade, fall, and run. The knowledge gained by students completing this course can be applied to all plumbing systems, fuel gas appliance piping and critical calculations for other mechanical and piping systems.

**PLU 202 INTERNATIONAL
RESIDENTIAL CODE –
PLUMBING
2 CREDITS**

Covers the plumbing requirements of the IRC. Students will be given the opportunity to learn and apply the general requirements of this code. The course will review and apply the sizing requirements of part VII of this code

**PLU 205 BACKFLOW
PREVENTION CERTIFICATION
TRAINING
3 CREDITS**

Prepares students with information and procedures for the development, implementation, maintenance and enforcement of back-flow prevention practices pursuant to federal and state regulation pertaining to cross connection control. The information in this course also prepares students to take the back-flow, ASSE cross-connection test.

**PLU 206 UNIFORM PLUMBING
CODE
4 CREDITS**

Assists students in passing the plumbing licensing examinations for the State of Colorado. This course reviews and interprets the Uniform Plumbing Code and the Colorado State Plumbing code. The course also reviews the need for enforcement of the Uniform Plumbing Code.

**PLU 207 INTERNATIONAL
PLUMBING CODE
4 CREDITS**

Helps plumbers working in jurisdictions where the International Plumbing Code has been adopted. This course will review the IPC and help the plumber apply the requirements of this code to the installation of plumbing systems. This Code has been adopted by the State Of Colorado effective July 1, 2005.

**PLU 208 INTERNATIONAL
FUEL GAS CODE
4 CREDITS**

Reviews the general requirements of applicable chapters of the IFGC. Students are given the opportunity to learn system sizing which includes: fuel gas piping, gas appliance venting, and combustion air.

**PLU 215 BACKFLOW
PREVENTION RE-
CERTIFICATION
1 CREDIT**

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 recertification and prepare for the current ASSE certification.

Prerequisite: Students must have a current Colorado Cross Connection Control Technician Certification.

**PLU 216 COLORADO
PLUMBING CODE UPDATE
2 CREDITS**

This course is designed for students who need to be updated on the Colorado Plumbing Code. The instructor will meet with you and schedule the necessary attendance. *Prerequisites: PLU 207 or valid Colorado plumbing license.*

**PLU 227 MEDICAL GAS
CERTIFICATION
2 CREDITS**

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.

Prerequisites: PLU 101, 207, or Colorado Journeyman Plumber License or permission of the instructor.

PLU 231 PLUMBING APPRENTICESHIP YR 3 SEM 1 5 CREDITS

Continues the PHCC plumbing apprenticeship. The main emphasis of this semester is the introduction to gas appliances, heat, basic electricity and controls. Students will spend time building, operating and troubleshooting electromechanical devices.

PLU 232 PLUMBING APPRENTICESHIP YR 3 SEM 2 5 CREDITS

Continues the PHCC plumbing apprenticeship. Instruction in this course includes: the use of builder's levels and transits, measuring slope and grade of plumbing excavations, installation and operation of residential and commercial fixtures, application of tank volume and capacities, planning and profitability in the plumbing profession.

PLU 240 COMMERCIAL PLUMBING SYSTEMS 4 CREDITS

Reviews code requirements of plumbing systems typically found in commercial structures. Students will design and install systems meet these requirements.

Prerequisites: OSH 127, PLU 100, 101, 120, 130.

PLU 242 PLUMBING APPRENTICESHIP YR 4 5 CREDITS

Completes the four year PHCC apprenticeship. The main emphasis of this course is to apply the requirements of the plumbing code and the specifications of structural

blueprints to the design of plumbing systems including material take-off and estimation of labor. Other topics include solar heating and aspects of "green plumbing", basics of steam and forced air heating systems, pump theory and industrial repair. (This course is pending approval).

PLU 244 COMMERCIAL PLUMBING SERVICE 4 CREDITS

Covers the aspects of maintenance and repair of typical plumbing equipment, fixtures and associated systems found in commercial structures.

Prerequisites: PLU 100, 105, 104, 120, and OSH 127.

PLU 247 HOT WATER HEATING SYSTEMS 4 CREDITS

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.

Prerequisites: OSH 127, PLU 101, PLU 105, HVA 110, HVA 162 or permission of the instructor.

PLU 250 PLUMBING ESTIMATING AND COSTING 4 CREDITS

Reviews and apply the information required to estimate and cost of the installation of plumbing and fixtures. Topics include labor, material take-off, overhead costs and running a profitable plumbing business.

Prerequisites: PLU 207, CON 105 and CON 230, Journeyman Plumber's License or permission of the instructor.

PLU 267 RADIANT HEATING SYSTEMS 4 CREDITS

Combination lab/lecture course and covers the theory of operation, installation and maintenance of

warm water radiant heating systems. Different methods of zoning, controls, piping methods, piping types and system components are discussed. Students are able to design, install, document, maintain and trouble-shoot all conventional residential warm water, radiant panel heating systems.

Prerequisites: OSH 127, PLU 101 or HVA 110, HVA 105 or PLU 105, HVA 247, or permission of the instructor.

PLU 275 SPECIAL TOPICS 1-6 CREDITS

Provides students with a vehicle to pursue in depth exploration of special topics of interest

PLU 280 TECHNICAL PROJECT 1-12 CREDITS

Enables students to participate in individual study on a special project which is related to the plumbing program. This technical project consists of a written and approved proposal and scheduled progress reports.

Prerequisite: Permission of instructor.

PLU 282 INTERNSHIP 0.5-12 CREDITS

Gives 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.

Prerequisite: Permission of instructor.

PLU 285 INDEPENDENT STUDY 0.5-12 CREDITS

Allows the student to work with the instructor on a specific area with specific objectives and a predetermined project completion date.

Prerequisite: Permission of instructor.

POS – Political Science

WWW.RRCC.EDU/POLITICAL

Prerequisite for all POS courses except POS 280: Students must have earned an ACT score of 18. If they do not have an 18, students must take ACCUPLACER and score 95 or higher on the Writing Skills portion of ACCUPLACER and 80 or higher on the Reading Skills portion.

POS 105 INTRODUCTION TO POLITICAL SCIENCE 3 CREDITS

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

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

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

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

An in-depth analysis of critical issues in political science. Topics will be determined each term.

POS 225 COMPARATIVE GOVERNMENT 3 CREDITS

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

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.

PPT – Power Plant Technology

PPT 215 POWER GENERATION TECHNOLOGY 3 CREDITS

PPT 215 introduces the basic elements of electrical generator design, protection, and operation. Students are introduced to the theoretical aspects of reactive power in power systems by analyzing

the inductive and capacitive components of the system, with an emphasis on megavar loading as it is affected by the excitation system. The generator's auxiliary systems and controls are introduced and the function and types of exciters commonly found in power plants are examined.

PRA – Park Ranger

WWW.RRCC.EDU/PARK

PRA 102 INTRODUCTION TO PARK RANGER TECHNOLOGY 3 CREDITS

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

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

PRA 178 PARK RANGER SKILLS SEMINAR 2 CREDITS

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

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.
Prerequisite: PRA 102.

PRA 205 NATURAL RESOURCE INTERPRETATION 3 CREDITS

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

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

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.
Prerequisite: PRA 102 or recent seasonal park employment/permission of the instructor.

PRA 255 ADVANCED RESOURCE INTERPRETATION 3 CREDITS

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 non-personal techniques. Examples of the types of skills offered are writing and design of site produced publications and exhibit labels; producing basic audio-visual programs; and preparing and presenting 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, the elderly, and international visitors will be discussed. The sensitive handling of controversial/sensitive educational issues will also be discussed.
Prerequisite: PRA 205.

PRA 280 PARK RANGER INTERNSHIP 1-6 CREDITS

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.
Prerequisite: PRA 102.

PRO – Process Technology

WWW.RRCC.EDU/ISOD

PRO 100 INTRODUCTION TO PROCESS TECHNOLOGY 4 CREDITS

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

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

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.

PREREQUISITE: PRO 100 AND PRO 110 OR PERMISSION OF INSTRUCTOR.

PRO 125 PROCESS EQUIPMENT II 4 CREDITS

familiarizes the student with nomenclature, maintenance, safety and operations in relation to the stationary equipment utilized in the oil and gas and other process industries. This course provides an overview or introduction into the field of equipment and maintenance within the process industry. The course also provides an overview or introduction into the field of stationary equipment utilized in many of the process industries. 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

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.

Prerequisite: PRO 100 and PRO 110 or permission of instructor.

PRO 131 INSTRUMENTATION II 3 CREDITS

Introduces the student to switches, relays and annunciator systems and moves on to discuss signal conversion and transmission. Controllers, control schemes and advanced control schemes are covered at a level appropriate for the process technician. The student then moves on to learn about digital control, programmable logic control and distributed control systems before ending the course with a discussion of instrumentation power supplies, emergency shutdown systems and instrumentation malfunctions.

PRO 175 SPECIAL TOPICS 0.5 – 6 CREDITS

Provides students with a vehicle to pursue in depth exploration of special topics of interest.
Prerequisite: Permission of instructor.

PRO 185 INDEPENDENT STUDY 0.5 – 6 CREDITS

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

PRO 210 PROCESS TECHNOLOGY II: SYSTEMS 4 CREDITS

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.

Prerequisite: PRO 120 and PRO 130 or permission of instructor.

PRO 220 PROCESS TECHNOLOGY III: OPERATIONS 4 CREDITS

Provides an introduction to the field of operations within the process industry. Students will use existing knowledge of equipment, systems, and instrumentation to understand the operation of an entire unit. Students 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.

Prerequisite: PRO 120 and PRO 130 or permission of instructor.

PRO 230 QUALITY IN PROCESS TECHNOLOGY 3 CREDITS

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).

Prerequisite: PRO 100 and PRO 110 or permission of instructor.

PRO 240 PROCESS TROUBLESHOOTING 4 CREDITS

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.

Prerequisite: PRO 220 or permission of instructor.

**PRO 275 SPECIAL TOPICS
0.5 – 6 CREDITS**

Provides students with a vehicle to pursue in depth exploration of special topics of interest.

Prerequisite: Permission of instructor.

**PRO 280 INTERNSHIP
4 CREDITS**

Provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

Prerequisite: Permission of instructor.

**PRO 285 INDEPENDENT
STUDY**

0.5 – 6 CREDITS

Meets the individual needs of students. Students engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

PSY – Psychology

**WWW.RRCC.EDU/
PSYCHOLOGY**

*Prerequisite for all PSY courses:
Students must have earned an ACT score of 18. If they do not have an 18, students must take ACCUPLACER and score 95 or higher on the Writing Skills portion of ACCUPLACER and 80 or higher on the Reading Skills portion.*

**PSY 101 GENERAL
PSYCHOLOGY I
3 CREDITS**

Focuses on 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**

Focuses on the scientific study of behavior including cognition, language, intelligence, psychological assessment, personality, abnormal psychology, therapy, sexuality, life span development, and social psychology.

**PSY 110 CAREER
DEVELOPMENT
3 CREDITS**

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**

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**

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**

Provides you with a vehicle to pursue in-depth exploration of special topics of interest.

**PSY 180 INTERNSHIP
1-3 CREDITS**

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**

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**

Examines gender comparisons in work, dating, family life, and sexual behavior throughout the life span. What is the interplay between biology and environment when looking at these gender differences?

**PSY 215 PSYCHOLOGY OF
ADJUSTMENT
3 CREDITS**

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**

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**

Covers the 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**

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**

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**

Covers growth and development of the individual from conception through childhood, emphasizing physical, cognitive, emotional, and psychosocial factors.

**PSY 249 ABNORMAL
PSYCHOLOGY
3 CREDITS**

Examines abnormal behavior and its classification, causes, treatment, and prevention. Focuses on how psychology views mental illness and how people experience various emotional and cognitive issues.

**PSY 250 DYNAMICS OF
RACISM AND PREJUDICE
3 CREDITS**

Focuses on early race relations in the United States, the development of prejudicial attitudes, and the social impact and strategies for positive change.

**PSY 258 INTRODUCTION TO
NEUROPSYCHOLOGY
3 CREDITS**

Focuses on introduction to basic neuropsychological terms and concepts with emphasis on application of thinking and behavior in humans.

**PSY 265 PSYCHOLOGY OF
PERSONALITY
3 CREDITS**

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**

Focuses on strategies for word attack, vocabulary development, stages of reading and basic reading comprehension.

Prerequisite: Appropriate ACCUPLACER score.

**REA 060 FOUNDATIONS OF
READING
3 CREDITS**

Focuses on strategies for vocabulary development, improved reading comprehension and enrichment.

Prerequisite: A grade of C or better in REA 030 or appropriate ACCUPLACER score.

**REA 090 COLLEGE
PREPARATORY READING
3 CREDITS**

Applies strategies for improving comprehension, developing vocabulary, and increasing rate for reading college textbooks.

Prerequisite: A grade of C or better in REA 060 or appropriate ACCUPLACER score.

REE – Real Estate

WWW.RRCC.EDU/BUSINESS

**REE 119 15-HOUR NATIONAL
USPAP COURSE
1 CREDIT**

Satisfies the 16-hour continuing education requirement (standard) for licensed real estate appraisers including one hour of state appraisal rules and regulations.

Corequisites: REE 120 and REE 121.

**REE 120 BASIC APPRAISAL
PRINCIPLES
2 CREDITS**

Provides a basic understanding of the principles and concepts for the trainee level of appraisal also known as the registered appraiser. The course provides a basic understanding of real estate concepts and characteristics, legal considerations, the economic principles of value, and types of value. It includes an overview of Real Estate markets and analysis and the application of ethnics in appraisal practice.

Corequisites: REE 119 and REE 121.

**REE 121 BASIC APPRAISAL
PROCEDURES
2 CREDITS**

Offers the second half of the Real Estate Appraisal Course. It provides basic valuation procedures and concepts for the trainee level of appraisal also known as the registered appraiser. The course provides a basic understanding of

real estate property characteristics and description, and the appraisal process including the application and reconciliation of the approaches to value.

Corequisites: REE 119 and REE 120.

REE 201 REAL ESTATE BROKERS I 6 CREDITS

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.

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 202 REAL ESTATE BROKERS II 6 CREDITS

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.

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 275 SPECIAL TOPICS 1-3 CREDITS

Provides you with a vehicle to explore special topics of interest in depth.

REE 280 INTERNSHIP 1-3 CREDITS

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. You will work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor/coordinator.

Prerequisite: Permission of instructor.

REE 285 INDEPENDENT STUDY 1-3 CREDITS

Meets your individual needs through intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

RTE – Radiologic Technology

WWW.RRCC.EDU/ MEDICALIMAGING

You must receive approval from the Radiology program director to take any RTE course other than RTE 101 or RTE 255.

RTE 101 INTRODUCTION TO RADIOGRAPHY 2 CREDITS

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

Expands the information presented in RTE 101, and includes diversity, universal precautions, legal considerations and ethics. This course consists of lecture and laboratory experience in the patient care areas of asepsis, vital signs, venipuncture, medical emergencies, assistance with drug administration, patients with special needs, and death and dying.

RTE 121 RADIOLOGIC PROCEDURES I 3 CREDITS

Introduces fundamentals of radiographic positioning including use of radiographic equipment and safety, positioning, terminology, anatomy, pathology, and skills necessary to perform radiographic procedures of the chest, abdomen, upper extremity, gastrointestinal and urinary systems.

RTE 122 RADIOLOGIC PROCEDURES II 3 CREDITS

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 boney thorax.

RTE 131 RADIOGRAPHIC PATHOLOGY & IMAGE EVALUATION I 1.5 CREDITS

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

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

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

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

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

Introduces additional concepts and more complex radiographic procedures than those learned in Radiographic Internship I.

**RTE 183 RADIOGRAPHIC
INTERNSHIP III**

7 CREDITS

Reinforces the basic concepts of Radiographic Internship I and II.

**RTE 221 ADVANCED MEDICAL
IMAGING**

3 CREDITS

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

Provides the basic knowledge and understanding of the biologic effects of ionizing radiation and radiation protection and safety.

**RTE 240 PRINCIPLES OF CT
IMAGING**

3 CREDITS

Explores the history, physical principles and instrumentation involved in Computed Tomography (CT). CT image creation, processing and display will be examined from data acquisition through post-processing and archiving. Patient factors and other related elements affecting image quality will be explained, as well artifact production and reduction. Radiation protection practices and quality control will also be explored.

RTE 250 MAMMOGRAPHY

3 CREDITS

Introduces the fundamentals of mammography as required for ARRT mammography certification.

**RTE 255 MULTIPLANAR
SECTIONAL IMAGING**

2 CREDITS

Offers a course designed to increase knowledge in multi-planar/multi-modality sectional anatomy for imaging professionals, radiologic technology students, and other interested health care professionals. Correlative studies of line drawings, cadaverous photographs, MRI, and CT images are thoroughly studied.

RTE 256 BONE DENSITOMETRY

3 CREDITS

Offers an in-depth study of Bone Densitometry equipment, scanning, and interpretation that will prepare the student for the American Registry of Radiologic Technologist certification examination in Bone Densitometry.

**RTE 260 MAGNETIC
RESONANCE IMAGING**

3 CREDITS

Provides an in-depth study of the physics and instrumentation, clinical applications, and quality control process involved in Magnetic Resonance Imaging (MRI).

**RTE 281 RADIOGRAPHIC
INTERNSHIP IV**

8 CREDITS

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

Introduces you to the radiographic specialty areas of portable and trauma radiography as well as increasing proficiency in general radiography.

**RTE 284 ADVANCED CLINICAL
VARIABLE CREDIT**

Provides the student with supervised hands-on training in advanced field of medical imaging. Allows the student to gain the clinical experience necessary to work in the specified area of advanced practice.

RTE 289 CAPSTONE COURSE

3 CREDITS

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

WWW.RRCC.EDU/LANGUAGES

RUS 101 CONVERSATIONAL RUSSIAN I **3 CREDITS**

Introduces you to beginning 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**

Continues the sequence for students who wish to understand and speak Russian. This course covers basic conversational patterns, expressions, and grammar.

Prerequisite: RUS 101 or permission of instructor.

RUS 111 RUSSIAN LANGUAGE I **5 CREDITS**

Begins a sequence dealing with the development of functional proficiency in listening, speaking, reading and writing the Russian language. Note: The order of the topics and methodology will vary according to individual texts and instructors.

RUS 112 RUSSIAN LANGUAGE II **5 CREDITS**

Continues Russian I in the development of functional proficiency in listening, speaking, reading and writing the Russian language. Note: The order of the topics and the methodology will vary according to individual texts and instructors.

RUS 275 SPECIAL TOPICS **0.5-6 CREDITS**

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

SBM – Small Business Management

WWW.RRCC.EDU/BUSINESS

SBM 101 STARTING A SMALL BUSINESS **1 CREDIT**

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**

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**

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**

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**

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**

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**

The final course in the small business certificate program. You will write a business plan from the material you have developed in the other courses.

Prerequisites: SBM 101, 103, 106, 108, 110 and 112 or permission of instructor.

SBM 175 SPECIAL TOPICS **1-3 CREDITS**

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

SBM 185 INDEPENDENT STUDY **1 CREDIT**

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of instructor.

SCI – Science

WWW.RRCC.EDU/SCIENCE

SCI 155 INTEGRATED SCIENCE I **4 CREDITS**

Examines the nature of energy and matter, their interactions and changes. This course integrates the fundamental concepts and ideas about the nature of physics and chemistry with the natural world.

Prerequisite: MAT 099.

SCI 156 INTEGRATED SCIENCE II 4 CREDITS

Examines earth and biological systems, living and non-living environments, through the application and refinement of fundamental energy and matter concepts. Topics covered include the origins of the planet and the life upon it, interactions between climatology and life, how to interpret land forms and the implications for ecoregions, basic mineralogy, basic biological chemistry, cell structure and metabolism, and other areas of interface between biology and geology.

Prerequisite: MAT 099.

SOC – Sociology

WWW.RRCC.EDU/SOCIOLOGY

Prerequisite for all SOC courses: Students must have earned an ACT score of 18. If they do not have an 18, students must take ACCUPLACER and score 95 or higher on the Writing Skills portion of ACCUPLACER and 80 or higher on the Reading Skills portion.

SOC 101 INTRODUCTION TO SOCIOLOGY I 3 CREDITS

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, race and ethnicity in contemporary society.

SOC 102 INTRODUCTION TO SOCIOLOGY II 3 CREDITS

A continuation of introduction to Sociology 101. This course is devoted to examining “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.

SOC 105 SOCIO-HISTORY US RACE/ETHNICITY 3 CREDITS

Explores the Socio-Historical context by which the US developed its diverse racial and ethnic make-up. Theories of Integration and Serration will be explored across the eras. Changing US immigration, naturalization, prejudice and discrimination across the centuries will be addressed.

SOC 158 MEN’S ROLES IN FAMILIES AND SOCIETY: AN INTRODUCTION TO FATHERHOOD 3 CREDITS

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 201 INTRODUCTION TO GERONTOLOGY 3 CREDITS

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

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

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 207 ENVIRONMENTAL SOCIOLOGY 3 CREDITS

The examination of humans and the environment from an ecological perspective. SOC 207 focuses on industrial and economic growth versus sustainability, natural resources development and management, environmental values and social movements, and comparative perspectives on people’s relationship to the environment. Review of the “Green” movement and other environmental movements and their impacts upon social dynamics, the environment, and the evolution of social movements.

SOC 212 RESEARCH IN SOCIAL SCIENCES 3 CREDITS

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**

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**

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**

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 220 SOCIOLOGY OF RELIGION
3 CREDITS**

Provides an introduction to the sociology of religion, including a comparative and critical examination of world religions, by focusing on sociological interpretation and explanation of the role of religion in human culture. The interaction between society and religion is thus examined as are a wide variety of religious beliefs and practices.

**SOC 222 AGEING IN A DIVERSE SOCIETY
3 CREDITS**

Examines the present and future roles of the aged in the family, the community, and the workplace. Economic, political, health, and retirement systems will be studied.

**SOC 223 CHICANOS IN A CHANGING SOCIETY
3 CREDITS**

Explores the lives and roles of Chicanos and Chicanas (Americans of Mexican descent). It introduces students to the Chicano community, it's historical, political and social development. It explores the ways in which Chicano communities interrelate with Anglo and multicultural societies as well as its future prospects.

**SOC 231 SOCIOLOGY OF DEVIANT BEHAVIOR
3 CREDITS**

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**

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**

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**

Provides you with a vehicle to pursue in depth exploration of special topics of interest.

**SOC 280 INTERNSHIP
1-3 CREDITS**

Provides students with the opportunity to supplement coursework with practical work experience related to their educational program. Students work under the immediate supervision of experienced personnel at the business location and with the direct guidance of the instructor.

**SOC 285 INDEPENDENT STUDY
3 CREDITS**

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**

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.

**SOC 292 SERVICE LEARNING
1-3 CREDITS**

Allows the student to provide a service to the community utilizing knowledge and skills acquired from a course in which the student is currently enrolled or has previously taken at the student's respective college.

SPA – Spanish

WWW.RRCC.EDU/LANGUAGES

**SPA 101 CONVERSATIONAL
SPANISH I
3 CREDITS**

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.

Provides you with the skills necessary to understand and speak Spanish. The material continues to cover basic conversation patterns, expressions, and grammar.

Prerequisite: SPA 101 or permission of instructor.

**SPA 109 SPANISH FOR
TRAVELERS
2 CREDITS**

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**

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**

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.

Prerequisite: SPA 111 or permission of instructor.

**SPA 114 FAST-TRACK SPANISH
I AND II
5 CREDITS**

Designed to bridge beginning SPA courses with intermediate SPA courses. It is designed for students who have studied two years of the target language in high school and possess linguistic and cultural knowledge that true beginners do not, but are not ready yet to move to the intermediate level because they need an in-depth review of essential structures.

**SPA 115 SPANISH FOR THE
PROFESSIONAL I
3 CREDITS**

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**

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.

Prerequisite: SPA 112 or permission of instructor.

**SPA 212 SPANISH LANGUAGE IV
3 CREDITS**

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.

Prerequisite: SPA 211 or permission of instructor.

**SPA 215 SPANISH FOR THE
PROFESSIONAL II
3 CREDITS**

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**

Provides you with a vehicle to pursue indepth exploration of special topics of interest.

**SPA 285 INDEPENDENT
STUDY
1-6 CREDITS**

Meets the individual needs of students. You will engage in intensive study or research under the direction of a qualified instructor.

Prerequisite: Permission of Instructor.

SVT – Sport Vehicle Technology

SVT 101 SVT ORIENTATION AND SAFETY

1 CREDITS

Designed as an orientation to the sport vehicle repair industry. Students receive an overview of job possibilities as well as learn various types of sport vehicle construction. Focuses on general sport vehicle repair and service shop safety procedures with an emphasis on personal and environmental safety issues. Students also learn the proper handling and disposal of hazardous materials. Names, uses and maintenance procedures for a variety of tools and equipment are addressed.

SVT 102 SVT ROLLING CHASSIS

3 CREDITS

Designed to introduce students to the major “chassis” components of motorcycles. This class will provide training in the basic servicing of motorcycle frames, suspension, tire, wheel and brake systems. Diagnostic procedure, routine maintenance, minor repair, adjustment and special tools will be studied.

SVT 103 SVT ELECTRICAL THEORY

2 CREDITS

Introduces automotive electricity and includes basic electrical theory, circuit designs, and wiring methods. Focuses on multi-meter usage and wiring diagrams.

SVT 104 TWO STROKE ENGINES

2 CREDITS

Introduction to Basic Two-Stroke engine theory, operation and repair.

SVT 105 FOUR STROKE ENGINES

2 CREDITS

Introduction to Basic Four-Stroke engine theory, operation and repair.

SVT 106 SVT ELECTRICAL REPAIR

2 CREDITS

Designed to expose students to the thought process required to correctly diagnose Sport Vehicle Electrical Systems as well as provide hand-on training to allow for learning of proper repair techniques.

SVT 107 SVT DRIVE SYSTEMS

2 CREDITS

Designed to introduce students to Drive components used on modern Sport Vehicles, including Transmission Assemblies, clutch components, Chain and Belt Drive Systems.

SVT 108 SVT TRADE PRACTICES

1 CREDIT

Designed to introduce students to the world of business development and ownership as related to the Sport Vehicle Industry.

SVT 109 SVT SNOW/ATV/PWC

2 CREDITS

Designed to train students in the various unique aspects of Snowmobile, Personal Watercraft and ATV repair and maintenances.

SVT 143 PHYSICS FOR TRANSPORTATION

3 CREDITS

Provides students with a vehicle to pursue in depth exploration of special topics of interest.

SVT 160 BASIC MOTORCYCLE REPAIR I

1 CREDIT

Designed to expose current and prospective entry-level motorcycle technicians to basic motorcycle maintenance and repair. Focus

will be placed on routine and preventative maintenance and producing. This class is the first in a series of classes (SVT160-SVT180&SVT299) designed to produce a novice or apprentice-level mechanic. Topics covered in the class include basic safety, hand tool and shop procedure. One objective is to make the learner more familiar with mechanical concepts and more confident in their own ability. Course study may be tailored for each student’s specific area of need or interest.

SVT 165 BASIC MOTORCYCLE REPAIR II

1 CREDIT

Designed to build upon concepts and practices learned in SVT160 and expose current and prospective motorcycle mechanics to basic motorcycle maintenance and repair. Focus will be placed on routine and preventative maintenance. Topics covered will study of motorcycle frame, suspension, tire and wheels. One objective is to make the learner more familiar with mechanical concepts and more confident in their own ability. Course study may be tailored for each student’s specific area of need or interest.

SVT 170 BASIC MOTORCYCLE REPAIR III

6 CREDITS

Designed to build upon concepts and practices learned in previous classes and expose current and prospective motorcycle mechanics to basic motorcycle maintenance and repair. Focus will be placed on routine and preventative maintenance. Topics covered will include study of motorcycle brakes and steering systems. One objective is to make the learner more familiar with mechanical concepts and more confident in their own ability. Course study may be tailored for each student’s specific area of need or interest.

SVT 175 BASIC MOTORCYCLE REPAIR IV
6 CREDITS

Designed to build upon concepts and practices learned in previous classes and expose current and prospective motorcycle mechanics to basic motorcycle maintenance and repair. Focus will be placed on routine and preventative maintenance. Topics covered will include study of motorcycle electrical and electronic systems. One objective is to make the learner more familiar with mechanical concepts and more confident in their own ability. Course study may be tailored for each student's specific area of need or interest.

SVT 180 BASIC MOTORCYCLE REPAIR IV
6 CREDITS

Designed to build upon concepts and practices learned in previous classes and expose current and prospective motorcycle mechanics to basic motorcycle maintenance and repair. Focus will be placed on routine and preventative maintenance. Topics covered will include study of motorcycle engine diagnosis and repair as well as motorcycle fuel system operation, diagnosis and repair. One objective is to make the learner more familiar with mechanical concepts and more confident in their own ability. Course study may be tailored for each student's specific area of need or interest.

TEC – Technical

TEC 205 GEOMETRIC DIMENSIONING AND TOLERANCING
3 CREDITS

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 that the generation of a working drawing is a team effort among design, drafting, manufacturing, and quality control.

THE – Theatre Arts

WWW.RRCC.EDU/THEATRE

THE 100 TECHNICAL THEATRE LAB
1-3 CREDITS

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

Provides you with training in cutting and sewing techniques, as well as knowledge of fabric types, qualities, uses, and cleaning.

THE 105 THEATRE APPRECIATION
3 CREDITS

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

Provides you with basic techniques in pattern drafting. Techniques will include exploring computer design as well as traditional drafting methods.

Prerequisite: THE 104 or permission of instructor.

THE 111 ACTING I
3 CREDITS

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

Continues to explore basic acting techniques and approaches including scene study, improvisation, and intermediate script analysis. The course includes practical application through classroom performance.

Prerequisite: THE 111 or permission of instructor.

THE 115 – STAGE MOVEMENT FOR ACTORS
3 CREDITS

Introduces the vocabulary of human movement, techniques of physical training, and anatomy and kinesiology for the actor. The course includes forms of basic dance and the coordination of movement with vocal delivery.

THE 116 TECHNICAL THEATRE
3 CREDITS

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

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 125 INDIVIDUAL SINGING LESSONS FOR MUSICAL THEATER

0.5 CREDITS

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

Builds a confident, talented, and exciting audition. The course includes a mock video taped audition, and covers résumés, 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

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.

Prerequisite: THE 111, THE 112, or permission of instructor.

THE 132 THEATRE PRODUCTION II

3 CREDITS

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.

Prerequisites: ENG 060, REA 090, THE 111, THE 112, or permission of instructor.

THE 135 STAGE MAKEUP I

2 CREDITS

Covers makeup design and application techniques. Techniques include basic corrective, character, old age, and fantasy application.

THE 136 STAGE MAKEUP II

2 CREDITS

Continues to explore theatrical makeup design and application techniques. In addition, prosthetics, hair design, and other more advanced applications will be explored.

Prerequisite: THE 135.

THE 140 STAGE DIALECTS

1 CREDIT

Teaches you to develop skills in nine dialects and accents.

THE 141 IMPROVISATION I

1 CREDIT

Helps you learn improvisation skills for performance and character development. Emphasis is placed on the "Second City" style of improvisation.

THE 142 IMPROVISATION II

1 CREDIT

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.

Prerequisite: THE 141, THE 111, or permission of instructor.

THE 143 BASIC ACTING TECHNIQUE

1 CREDIT

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

Emphasizes the Stanislavski approach. You will explore acting skills through advanced material, including avant garde and classical.

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

THE 151 STAGECRAFT I

3 CREDITS

Focuses upon fundamental theories and construction of flats, platforms, stair units, soft scenery, and other aspects of stagecraft.

Prerequisite: THE 116 or permission of the instructor.

THE 152 PRODUCTION STAGE MANAGEMENT I

3 CREDITS

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.

Prerequisite: THE 116 or permission of the instructor.

THE 175 SPECIAL TOPICS

1-3 CREDITS

Focuses on the selection and preparation of audition materials, including prepared monologues, cold readings, and improvisation techniques. The basics of résumé preparation are also discussed.

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

**THE 200 PAINT/ DRAW/
RENDER MODELING
TECHNIQUES
3 CREDITS**

Introduces art techniques that are needed specifically in Theatrical Design. Techniques will include painting, rendering of scenic, lighting, costume designs, and model construction techniques.

**THE 210 SINGING FOR ACTORS
3 CREDITS**

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**

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**

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**

Continues THE 112. Emphasis is on artistic concentration of voice and movement as applied to period acting styles.

**THE 214 INTERMEDIATE
ACTING II
3 CREDITS**

Emphasizes artistic concentration of voice and movement as applied to period acting styles. Character biographies are also required. This course is a continuation of THE 213.

**THE 215 PLAYWRITING
3 CREDITS**

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**

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.

Prerequisite: THE 116 or permission of the instructor.

**THE 220 DIRECTING I
3 CREDITS**

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.

Prerequisite: THE 111 or permission of instructor.

**THE 221 SET DESIGN
3 CREDITS**

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.

Prerequisite: THE 116 or permission of instructor.

**THE 225 SOUND OPERATION
AND DESIGN
2 CREDITS**

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**

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. You will direct a one-act theatre piece for the final project.

Prerequisite: THE 220 or permission of the instructor.

**THE 231 THEATRE
PRODUCTION III
3 CREDITS**

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**

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.

Prerequisites: THE 111, THE 112 or permission of the instructor.

**THE 237 HISTORY OF
COSTUMES AND FASHION
3 CREDITS**

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

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

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.

Prerequisite: THE 116 or permission of the instructor.

THE 245 BASIC COSTUME DESIGN AND CONSTRUCTION
3 CREDITS

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.

Prerequisites: THE 106 and THE 108.

THE 248 REHEARSAL AND PERFORMANCE III
3 CREDITS

Special attention will be given to characterization, stage movement, speech techniques, dramatic form and the rehearsal / production / performance process. The successful rehearsal and presentation of the current production to the public will be the focal point of their activities. Previous acting experience is helpful but not required.

THE 260 EMPLOYMENT SKILLS FOR TECHNICAL THEATRE
1 CREDIT

Provides you the opportunity to assemble a technical theatre portfolio and résumé for classroom presentation and job applications.

THE 275 SPECIAL TOPICS: THEATRE
1-6 CREDITS

Explores current topics, issues, and activities related to one or more aspects of the named discipline.

THE 280 INTERNSHIP
1-6 CREDITS

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

Emphasizes structured and guided individualized study that is organized and tailored around the interests and needs of the individual student.

WEL – Welding

WEL 100 SAFETY FOR WELDERS
1 CREDIT

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

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

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

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

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

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
4 CREDITS

Provides the student 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. Students will be introduced to oxyacetylene, shielded, gas metal arc welding equipment set up, and various welding techniques. Safety will be stressed during the course.

Prerequisites: Permission of the instructor.

WEL 201 GAS METAL ARC WELDING I
4 CREDITS

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

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

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

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

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

Develops welding and associated skills in the use of drawings and blueprints in planning. Includes designing and layout projects.

WQM – Water Quality Management Technology

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All courses are approved for OCPO training units (TU's).

WQM 100 INTRODUCTION TO WATER QUALITY MANAGEMENT
3 CREDITS

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

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 109 WATER DISTRIBUTION SYSTEMS
3 CREDITS

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 118 WASTEWATER COLLECTION SYSTEMS
3 CREDITS

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. Additionally, students gain knowledge on industrial pre-treatment, design and flow patterns within a hydraulic flow system

**WQM 119 BASIC WATER
QUALITY ANALYSIS
4 CREDITS**

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**

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**

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**

Provides an understanding of electrical theory, various types of electrical instrumentation equipment found in treatment facilities, operation, troubleshooting electrical problems and safety procedures.

**WQM 123 WATER REUSE
SYSTEMS
3 CREDITS**

Discusses the new and developing area in the industry known as Reuse. Topics include, development, treatment techniques, operations, equipment, source and application uses for wastewater Reuse systems as well as future planning for long term use in the industry.

**WQM 124 WATER
CERTIFICATION REVIEW FOR
CLASS C AND D
3 CREDITS**

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**

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 AND
SECURITY SYSTEMS IN THE
WATER QUALITY INDUSTRY
3 CREDITS**

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**

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 160 MANAGING THE
GLOBAL WATER SUPPLY
3 CREDITS**

Provides the student with the opportunity to study water resources in the industry. This course is designed to aid with future planning strategies with source water management practices including both ground water and surface water sources. Topics include, demand forecasting, water rights, alternative sources, storage, injection and hydraulic modeling, watershed management and integrated resource planning.

**WQM 165 WATER LAW
3 CREDITS**

Introduces the student to legal requirements within the water and wastewater industries. Topics include groundwater water rights, non tributary water supplies, geothermal resources, water decrees and rights, water court operations,

building and maintaining water utilities, absolute and conditional water rights and water ownership resumes. The student also is introduced to augmentation systems water right exchange processes.

WQM 169 INTERNATIONAL DEVELOPMENT
3 CREDITS

Exposes the student to typical water and wastewater development plans for international communities. This includes health studies, environmental impact studies, system design considerations, sustainability and funding programs. Topics also include basic design templates as well as development systems for operations and maintenance programs through research of available resources in remote communities.

WQM 200 HYDRAULICS FOR WATER QUALITY MANAGEMENT
4 CREDITS

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

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

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, flow 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 212 DRINKING WATER REGULATIONS
4 CREDITS

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

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.

Prerequisite: WQM 119

WQM 217 DISINFECTION TECHNIQUES IN WATER QUALITY SYSTEMS
4 CREDITS

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 224 WATER TREATMENT CERTIFICATION REVIEW FOR A AND B
3 CREDITS

Prepares the student for the water operations certification exam at the A and B level. Topics include water treatment principles, water filtration, chemical treatment, Colorado Primary Drinking Water Regulations, calculations, instrumentation, equipment operation and maintenance, utility management, laboratory analysis, and water quality control.

WQM 225 WASTEWATER TREATMENT CERTIFICATION REVIEW FOR A AND B
3 CREDITS

Prepares the student for the wastewater operations certification at the A and B level. Topics include activated sludge, nutrient removal, digestion, solids handling, effluent removal, odor control, wastewater reclamation, discharge permit regulations and reporting, calculation, instrumentation, equipment operations and maintenance, laboratory analysis and utility management.

**WQM 230 INDUSTRIAL
MONITORING AND
TREATMENT
3 CREDITS**

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.

NOTES

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