

# **CROWDER COLLEGE**

## **Course Catalog**

**2012-2013**

***Established by the Community College District  
of Newton-McDonald Counties, 1963***

### **Board of Trustees**

Andy Wood, President, Neosho  
Rick Butler, Vice President, Neosho  
Al Chapman, Ph.D., Secretary, Anderson  
Vickie Barnes, Treasurer, Neosho  
Diane Andris, Neosho  
James B. Tatum, Pineville

### **Executive Officers**

Dr. Alan D. Marble, President  
Dr. Glenn Coltharp, Vice President of Academic Affairs  
Dr. Jim Cummins, Vice President of Finance  
Dr. Nicole Striegel, Vice President of Student Services

### **Main Campus**

601 Laclede, Neosho, MO 64850  
Admissions 1-866-238-7788 (*toll-free*), (417) 451-3223, Main Campus Switchboard,  
(417) 455-5702 Main Campus Fax

### **Cassville Instruction Center**

4020 North Main St., Cassville, MO 65625, Phone: (417) 847-1706 Fax: (417) 847-1367

### **Nevada Instruction Center**

600 West Edwards Place, Nevada, MO 64772, Phone: (417) 667-0518 Fax: (417) 667-0536

### **Webb City Instruction Center**

600 S. Ellis, Webb City, MO 64870, Phone: (417) 673-2345 Fax: (417) 673-2300

**Crowder College also offers classes in various towns throughout the nine county service area as follows:**

#### **Greenfield**

418 College St, Greenfield, MO 65661, (417)592-2940

#### **Lamar**

Lamar Area Vo-Tech, 4th & Maple Lamar, MO 64759, (417)592-2940

#### **McDonald County**

MCHS, 100 Mustang Dr. Anderson, MO 64831,  
Hometown Bank(Jane), 21196 Hwy 715 Pineville, MO 64856

#### **Monett**

Scott Regional Technology Center, Two David Sippy Dr. Monett, MO 65708, (417)236-2895

#### **Mt. Vernon**

The MARC (Mt Vernon Art & Recreation Center)  
822 W Mt Vernon Blvd, Mt Vernon, MO 65712, (417)461-0237

*An Equal Opportunity/Affirmative Action Institution*

## Table of Contents

The information in the catalog was accurate at the time of publication. The College reserves the right to make changes affecting policies, fees, curricula or any other matters cited in the catalog. The College will give reasonable and adequate notice to students to allow time to adhere to any changes in the catalog. Fees, deadlines, academic requirements, courses, degree programs, and other matters described in the catalog may change with reasonable notice. Not all courses are offered each academic year and faculty assignments may change without notice. For most recent information please consult the online version of the catalog: [www.crowder.edu](http://www.crowder.edu)

<b>An Introduction to Crowder College .....</b>	<b>5</b>
Mission .....	5
Philosophy and Policy on Values and Rights .....	5
Vision Statement .....	5
Affiliation and Accreditation .....	5
Opportunities .....	6
Student Abilities .....	6
<b>Campus Information .....</b>	<b>6</b>
Cassville, Nevada, and Webb City Campus Services .....	8
<b>General Admission Requirements .....</b>	<b>8</b>
College Orientation (COLL 101) .....	8
Special Admission, Conditional Admission and Re-admission Guidelines .....	8
Transfer Student Admissions .....	9
Transcript Policy .....	9
International Student Admissions Required Documentation .....	9
Dual Credit/Dual Enrollment Admissions .....	9
Conditional Admission .....	10
<b>Special Admission Programs .....</b>	<b>10</b>
Environmental Health Technology .....	10
Nursing .....	10
Truck Driving School .....	10
Veterinary Technology .....	11
<b>Assessment and Placement .....</b>	<b>11</b>
ACT and COMPASS Testing .....	11
College Level Exam Program (CLEP) .....	12
Testing Out (Credit by Examination) .....	12
Advanced Placement .....	12
Military Service and Training .....	12
<b>Student Classifications .....</b>	<b>12</b>
Degree Seeking Students .....	12
Non-Degree Seeking Students .....	12
Dual Credit/Dual Enrollment Students .....	12
International Students .....	13
Military Duty Activation .....	13
Senior Citizen Students .....	13
Lifetime Learner Students .....	13
<b>Degree Classifications .....</b>	<b>13</b>
Associate of Arts Degree (A.A.) .....	13
Associate of Science Degree (A.S.) .....	13
Associate of Applied Science Degrees (A.A.S.) .....	13
Certificates of Study .....	13
<b>Course Classifications .....</b>	<b>13</b>
Repeat Course .....	13
Online Course .....	13
Self-Directed Learning .....	13
Flex Classes .....	14
Traditional Course .....	14
Non-traditional Credit .....	14

Experiential Credit.....	14
Auditing a Course .....	14
Community Education Classes.....	14
<b>Catalog, Program, Course, and Policy Changes .....</b>	<b>14</b>
<b>Payment of Fees .....</b>	<b>14</b>
Payment Arrangements .....	14
Acceptable payment arrangements.....	15
<b>Course Changes and Attendance .....</b>	<b>15</b>
Hardship Withdrawals .....	15
Course Cancellations .....	15
Tuition Refunds .....	15
Residency Status Policy.....	15
<b>Change of Residency .....</b>	<b>16</b>
Evidence of Domicile .....	16
<b>Financial Aid .....</b>	<b>16</b>
Scholarships .....	16
Pell Grants .....	16
Federal Supplemental Educational Opportunity Grants (FSEOG) .....	16
Federal Work-Study Program.....	16
Federal Direct Loan Program .....	17
Notice to Students/Parents.....	17
Honors Program .....	17
Veteran's Services.....	17
<b>Student Progress and Policies .....</b>	<b>18</b>
Student Progress Policies.....	18
Credit Hour Policy .....	18
Grades.....	18
Grade Point Average (g.p.a.) .....	18
Grade Reports .....	19
Satisfactory Progress.....	19
Retention Alert.....	19
Academic Warning.....	19
Academic Probation .....	19
Academic Suspension .....	19
Readmission, Suspension and Appeal Process.....	19
Academic Forgiveness.....	19
Attendance .....	19
Dean's List/Honors.....	19
<b>Graduation .....</b>	<b>20</b>
Degree/Program Requirements.....	20
Graduation Checklist .....	20
<b>Campus Services and Resources.....</b>	<b>20</b>
Career Services Center .....	20
Counselors.....	20
Faculty/Academic Advisors.....	20
Academic Resource Center (ARC) .....	20
College Orientation (COLL 101) and College Connections (LOC 103).....	21
Learning Resources Center (LRC) .....	21
Student Support Services (SSS) .....	21
Tech Prep .....	21
College Assistance Migrant Grant Program (CAMP) .....	22
Student Housing.....	22
Office of Disability Services.....	22

Student Clubs and Organizations .....	22
Community Services/Continuing Education .....	22
The Alliance for Business.....	22
Glossary of College Terms.....	23
Description of Courses listing.....	26
Programs of Study Index .....	141

# An Introduction to Crowder College

## Mission

**IT** is our mission and purpose to serve the needs of people by actualizing each person who chooses Crowder College in terms of his or her self-worth and ability to function in society as a responsible citizen.

**WE** believe that access and quality are compatible; and that both can be more fully realized through a proactive stance seeking to make the public aware of and interested in opportunities available.

**WE** believe in strong ties and relationships between the college and other educational institutions, both secondary and post-secondary, the community, and the businesses and organizations that support our community.

**WE** view the college as having an active role in economic and social development through continuing education and customized training, directed toward improving work skills and productivity, creating a more desirable work and social environment, and adding to the general quality of life within the region.

**IN** each course and program, all endeavors will be concerned about and committed to the development of each individual's ability to master the content of offerings, make ethical decisions, develop analytical skills, cultivate physical health and well-being, develop self-worth and learn the value of working together and serving others.

**THE** college recognizes a two-fold responsibility in its commitment to student growth and development. The first is to assist

in acquiring the skills and awareness needed to function as productive and responsible citizens. The second is to evaluate this progress so that both the student and the institution are able to measure the growth.

## Philosophy and Policy on Values and Rights

It is the policy of Crowder College to convey certain fundamental values, insofar as possible, to all those enrolled as students. Emphasis, in all course work, extra-curricular activities and social contact, is given to developing a growing awareness in the individual of the importance of integrity, lawfulness and other characteristics of maturity, such as respect for the rights of others as individuals and the value of work and productivity in the lives of everyone. This policy takes recognition of economic self-reliance as a cherished priority. It strongly embraces character building as a proper function of education. The sanctity of the family is to be encouraged as we recognize the family as a cornerstone of a healthy society. Reference is made to the Northwest Ordinance of 1787 which led to the establishment of land grant colleges which states, "Religion, morality, and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall be forever encouraged." This policy in no way takes away from the established goal of competency in and mastery of course content in all offerings at Crowder College. We the undersigned members of the board of trustees of Crowder College, hereby reaffirm this policy for continued implementation by the administration and faculty of Crowder College.

Adopted by Crowder College Board of Trustees, July 13, 1978

## Vision Statement

***Crowder College ...Building a civil, serving, literate, learning community of responsible citizens***

Crowder College is an equal opportunity/ educational /employment institution, and is nondiscriminatory relative to race, religion, color, national origin, sex, age, and qualified disabled. Crowder College is committed to providing educational opportunities to all qualified students regardless of their economic or social status and will not discriminate on the basis of handicaps, race, color, sex, creed, or national origin. Dr. Nicole Striegel, Vice President of Student Affairs, 601 Laclede, Neosho, MO 64850, 417-455-5636, coordinates efforts to comply with the provisions of Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973. To review the complete Title IX policy and grievance procedures refer to the student handbook.

## Affiliation and Accreditation

Crowder College is accredited by the Missouri Department of Elementary and Secondary Education and the coordinating Board for Higher Education. The College is also fully accredited by the Higher Learning Commission, a member of the North Central Association. *The Higher Learning Commission, 30 North LaSalle Street, Suite 2400, Chicago, Illinois 60602-2504 Phone: (312) 263-0456.* Program accreditations are in the Missouri State Board of Nursing, Teacher Education Certification, through the Department of

Elementary and Secondary Education, and the National Institute for Automotive Excellence (ASE).

Graduates of the Associate of Arts programs are admitted without examination to junior standing in all public universities and colleges in Missouri and many outside the state of Missouri. Crowder is an active member of the Missouri Community College Association and the American Association of Community Colleges.

## Opportunities

The college will provide opportunities for people to pursue associate degrees, certificate and diploma programs, plus continuing education to include:

- A. A program in the Arts and Sciences directed toward transfer to baccalaureate degree granting institutions and to general intellectual enrichment;
- B. Career education leading to economic self-reliance;
- C. Both developmental and honors education to allow greater opportunity to fully exercise each individual's academic potential;
- D. Endeavors to enrich life through cultural and a vocational opportunity;
- E. Partnerships with business, industry and others designed to support a greater quality of life and an economic base in the community.

## Student Abilities

Nine student "abilities" have been identified from the Crowder College Mission Statement. Faculty are expected to teach beyond academics and basic skills to ensure that students develop abilities in these areas. There is a matrix that has been developed

to show which courses address the student abilities. The definitions for these abilities are as follows:

- **COMMUNICATION**

Communication is the process by which a thought or impression is effectively moved through its unique mode from one person or source to another.

- **RESPONSIBLE CITIZENSHIP**

Citizenship refers to the relationship between an individual and the community to which he or she belongs. Responsible citizenship involves the recognition of the inseparable rights and duties associated with membership in this community. It also requires accountability and meaningful participation in public decision making and obligations of life in this community.

- **PROBLEM SOLVING**

Problem Solving is the process of identifying an obstacle or dilemma, using critical thinking strategies and decision making skills, and applying appropriate measures needed to overcome or resolve the obstacle or dilemma.

- **CULTURAL AWARENESS**

Cultural Awareness is the recognition of, and the appreciation for, the history, customs, lore, skills, arts, observances and beliefs of a people and how these components meet basic human needs in response to a changing environment.

- **ENVIRONMENTAL AWARENESS**

Environmental Awareness is an understanding of the external conditions that influence growth and development and how human choices influence the relationship between living beings, their surroundings and their quality of life.

- **ETHICAL DECISION MAKING**

Ethical Decision Making is the selection of courses of action in

accordance with principles or standards of right or good conduct.

- **PHYSICAL AND EMOTIONAL HEALTH**

Health is a condition of physical and emotional well-being of the individual, which is achieved through competent self-care and satisfying relationships with others.

- **SELF-ASSESSMENT**

Self-assessment is a process of determining one's level of functioning, both strengths and weaknesses. It precedes the final decision-making stage of evaluation, focusing upon a number of variables judged to be important, and using a number of techniques to provide authentic and meaningful feedback for improvement.

- **MANAGING INFORMATION**

Managing information is the ability to access, utilize, implement, and store information from electronic and other sources in order to make informed decisions, present information, and solve problems.

## Campus Information

The Crowder College campus covers 608 acres south of Neosho on Highway 59 and Route D. The facilities listed can be found on the map at the back of the catalog.

- **Alternative Energy & Transport Training Complex** - Houses Crowder's award-winning solar and electrical powered vehicles, transport training (truck and bus driver) classrooms and related shops.
- **Anna H. and John Y. Williams Agricultural Science Center** - Houses classrooms and laboratories including a telecommunications classroom, computer classroom and laboratory facilities for meat science, soils and crops, horticulture and poultry

science. A conference room and agriculture resource center is also included in the facilities.

- **Baseball Field** - Location for Roughrider home baseball games.
- **Bookstore** - Texts, related instructional resources, office supplies, assorted Crowder clothing and limited personal supplies are sold on campus, through the campus bookstore. Also houses the post office for campus.
- **Cafeteria** - The college cafeteria is located on the 1st floor of Newton Hall. The cafeteria offers an all-you-can eat program that is open to the public. Meal costs are available in the college cafeteria.
- **Elsie Plaster Community Center** - The Elsie Plaster Community Center contains an auditorium, aerobics-makeup/dressing room, rehearsal classroom, music & art history classroom, five individual practice rooms and the **Longwell Museum**. The EPCC serves the students and faculty of Crowder College, as well as the businesses, industries and citizens of the four-state area.
- **Bob Sneller Gymnasium** - Location for Lady Roughrider home basketball games, and accommodates Physical Education, intramural, community and performance programming with seating for 2,000.
- **Freeman Family YMCA** - Specially priced memberships are available for students to utilize the fitness center, indoor pool, racquetball courts, and more.

- **Headstart Building** - Adjacent to, but not a part of Crowder College.
- **Maintenance Building** - Houses the campus maintenance center.
- **McDonald Hall** - Houses classrooms, instructor offices, Academic Resource Center (ARC), Instruction Office, computer labs, print shop, and the Information Technology Office.
- **Newton Hall** - Houses the President, Business Office, Human Resources, Grants Office, Foundation and Development Offices, Career and Transfer Services Center, TRIO programs (UB, SSS, EOC and Talent Search) Cafeteria, Art & Design, Journalism department, GED and AEL/HEP, and the Computer Writing Labs.
- **R. L. (Bob) and Ethel Brown Residence Complex** - Consists of 16 houses, each containing 6 suites that accommodate 12 students per house. The Residence Complex provides students access to the campus computer network. Students who own computers are encouraged to bring them. Each suite is furnished with beds, desks, and chairs for two students. The common area of each house is furnished with a sofa, chair, end table, round table and four chairs and a microwave. Laundry facilities are available in the Complex. Phones are provided in each house, but students may arrange to have personal phone service to their suite. The Residence Complex is accessible for individuals with disabilities.
- **Smith Hall and Annex** - Houses the Environmental Resource Center (ERC) and CCTEC Health

Science program. The ERC has been designated as the Missouri State Environmental Training Center by the United States Environmental Protection Agency (USEPA). Also housed Dept. of Natural Resources and University of MO Extension Office. Smith Hall Annex house the MO State Highway Patrol.

- **Soccer Field** – Location for Roughrider home soccer games.
- **Softball Field** - Location for Lady Roughrider home softball games.
- **Solar Houses** - Crowder College's entries in the 2002 and 2005 Solar Decathlon competitions in Washington D.C. The 2002 house won the People's Choice Award.
- **Student Center** - Connects Newton and McDonald Halls and provides space for relaxation and includes the 'Rider Grill
- **Technical Education Center** - Includes five units serving both college career and area secondary students.
- **Truck Driver Training Complex** - Houses the truck driver training classrooms, offices, and mechanics building.
- **Arnold Farber Academic Building** - One stop shop for Student Services including, Admissions, Financial Aid, Records, Bookstore and Cashier's Office. Second Floor houses the Lee Library and Wright Conference Center.
- **Davidson Hall Life and Health Sciences Building** – Labs and classrooms for sciences and health related programs. This is also a FEMA Shelter for Crowder and the surrounding community.

- **MARET** – MO Alternative and Renewable Energy and Technology Center. Classroom space for Alternative Energy Programs.

## **Cassville, Nevada, and Webb City Campus Services**

Full associate degrees in general studies are available as well as courses in office, business, teacher education, and computer applications.

- Traditional day, evening, weekend, on-line and continuing education courses available.
- Fully networked computer labs.
- Admissions counselors available.
- Student support services are available on a rotating schedule, including financial aid, career placement testing, COMPASS testing, bookstore and seminars.
- ABE/GED classes (Cassville site only).
- GED testing (Nevada and Cassville sites).

## **General Admission Requirements**

Individuals at least 16 years of age who submit the following documents:

1. Application for admission with the required \$25 application fee.
2. All high school and college transcripts (see transcript policy).
3. Certificate of home school completion.
4. Certificate of high school equivalency through the General Education Development test (GED).

## **College Orientation (COLL 101)**

COLL101 is a one credit, required course for all degree or certificate seeking students during their first enrolled semester. Paramedic, waste water, and truck driving certificate programs are excluded. Transfer and returning Crowder College students (first enrolled prior to fall 2005) that have successfully completed college orientation elsewhere or have a cumulative grade point average of 2.0 on a minimum of 12 credits are exempt from this course.

- Students that are non-degree seeking are not required to take COLL101. However, if students become degree or certificate seeking, they will be required to successfully complete the course.
- Students that were enrolled before Fall 2005 (when the course was officially in the catalog) are not required to take the course and are grandfathered in. However, students must be consecutively enrolled prior to Fall 2005 to be considered under the grandfather clause.
- Students wishing to enter a program leading to a field that requires a license or certification should be aware that a prior misdemeanor or felony conviction may restrict the individual's ability to obtain professional licensure or certification.

Felony convictions do not exclude admission to the College, although admission may be denied to individuals whom the college considers to be a potential danger to the safety, security, and educational environment of the College. In order to help foster a safe learning environment, the College requires those individuals who have been convicted of a felony, and who are interested in attending classes at the College, to

disclose this information prior to registering for classes. Failure to disclose a felony conviction may result in the student being immediately withdrawn from current classes and may result in disciplinary action including dismissal or expulsion, as outlined in the Student Code of Conduct.

## **Special Admission, Conditional Admission and Re-admission Guidelines**

Special Admission is granted to the following individuals:

1. Students at least sixteen years of age but not a high school, home school, or GED completer.
2. Students who have completed their sophomore year with a g.p.a. of  $\geq 3.0$  in a high school program, or comparable home school program and who have written approval of an appropriate school official may enroll as a part-time student while still attending high school/home school as part of the Crowder College Dual Enrollment Program.
3. Students attending an accredited high school or home school program and participating in the Crowder College Dual Credit Program.
4. Readmission, suspension, and appeal process (Refer to Student Handbook)
  - A student in category 1 above is not permitted to enroll for or accumulate more than six (6) semester hours until he/she graduates from high school, or completes a home school program or the G.E.D. exam.
  - A student requiring special admission must be in compliance with all other college policies and will not be eligible to receive any form of Title IV financial aid. Students



admitted under special admissions will be required to meet the same placement requirements.

## Transfer Student Admissions

A student who has attended another college or university before enrollment at Crowder must provide proof that he/she was in "Good Academic and Disciplinary Standing" at the last college attended. Students with a transfer grade point average that does not meet the Crowder guidelines for Satisfactory Academic Progress will be placed on Academic Probation. Students on Academic Suspension from a previous institution will be required to meet the Crowder standards for Satisfactory Academic Progress before being allowed to enroll for classes (see Student Progress Policies). Students who are not in good disciplinary standing will be required to appeal in order to enroll for classes.

## Transcript Policy

All students must submit an official transcript prior to or upon submitting application for enrollment. **Unofficial transcripts will be accepted for one semester only.** Students without an official transcript on file by the end of the fourth week of classes or prior to the next semester of enrollment will receive a records hold on their account. Students requesting financial aid will not be eligible to receive aid for the current or subsequent terms without an official transcript on file. Transfer, degree and non-degree seeking students that do not meet the satisfactory progress standards must adhere to the

Retention Alert and Suspension Appeal policy and procedures. **All students on suspension status must submit a petition for readmission to the Records Office.**

## International Student Admissions Required Documentation

1. Application for Admission – The application must be completed in English and the application fee paid.
2. Current Passport and Visa – Copies will be made upon arrival at the college.
3. High School Transcript - Copies of the high school and college transcripts must be provided.
4. College Transcripts - College Transcripts (in which credits are to be transferred) must be translated through WES (World Education Services).
5. Financial Statement -These documents must prove that money exists to pay for the first year of classes. Proof of adequate funds for the duration of study should also be included.
6. Insurance – All international students are required to have health insurance that includes medical evacuation and repatriation. Students may purchase insurance through the college OR provide proof of insurance and sign a waiver of the coverage available through the college. Cost for health insurance or proof of

insurance must be provided upon arrival.

7. Munoz Test -This test will be administered to all students not having English as their first language The Munoz Test is administered on the Crowder College campus. Based on the results of the test, If necessary, a secondary language skills examination will further designate what English Language Institute (ELI) courses students will be placed in (as required by the ELI program). For questions, please contact the ELI program coordinator at 417-455-5493.

The form I-20 will be issued when numbers 1, 3, 4, and 5 are on file.

Students must pay tuition upon arrival or enroll in the college payment plan. All students enrolled in the payment plan are subject to the payment plan rules. All international students are required to submit an airline ticket to their home country OR provide the College with \$1500 to be held and refunded to purchase a return ticket home at the time of departure, or for emergency travel home.

## Dual Credit/Dual Enrollment Admissions

Public high schools may, in cooperation with Crowder College, offer post-secondary course options to high school students. **Dual credit** courses are classes taught in area high schools by college-qualified teachers. Crowder approves these courses for Crowder College credit. **Dual enrollment** courses are classes taught at Crowder College (or

online). Dual credit students receive both college and high school credit for course work. Dual enrolled students receive college credit from Crowder College and may receive high school credit at the discretion of their respective school districts. Dual credit/enrollment students must meet all Crowder College admission requirements for classes in which they enroll. In addition, dual credit/enrollment students must have completed their sophomore year and be 16 years of age. Younger students may be considered for admission if they exhibit exceptional academic advancement, are recommended by their high school principal, and are approved by the Crowder College Vice President of Academic Affairs.

### **Conditional Admission**

Applicants who would otherwise be denied admission (or readmission) to Crowder College may be granted conditional admission after review from the Admissions Committee. The Committee will stipulate the terms of admission as deemed appropriate based on the information provided by the applicant at the time of admission and additional information the applicant provides. The Admission Committee reserves the right to restrict students' admission to online venues or such other criteria as the Committee sees fit. Applicants convicted of selling or distributing illegal substance may be admitted to attend Crowder in an online format until the terms of incarceration, probation and/or parole are complete and when requirements of incarceration, probation, and/or

parole are satisfied the student will be considered for admission on campus.

Conditional Admission (or readmission) may be granted for students who are appealing to the Suspension Appeal's Committee following a Suspension.

### **Special Admission Programs**

#### **Environmental Health Technology**

The Environmental Resource Center is the designated Missouri State Training Center for the training of personnel involved in the operation, maintenance and management of water quality facilities. Upon successful completion of either program in water treatment and/or wastewater treatment, graduates will test for a Class "D" water and a Class "D" wastewater license, to become a licensed operator. Crowder College also offers an advanced certificate in Utility Management for continued study in the field of Environmental Health. Additional fees apply to cover books, lab manuals, insurance coverage while performing Internships, and Missouri certification examination fees.

Crowder College provides in-service training courses for water and wastewater operators. The courses provide practical operational techniques and are usually specific to certain treatment processes. Crowder College offers specialized training for industry, consulting engineers, and municipalities on a contract basis to meet specific needs. The training program is customized to the experience/education level of the student, the specific technology being operated and the regulations

which apply to the facility being operated. For further information go to [www.waterschool.org](http://www.waterschool.org) or call 1-800-848-8726

### **Nursing**

The Crowder College Nursing Program prepares graduates who can demonstrate entry level competencies as registered nurses, and provides a foundation for continued learning. The program provides a multiple entry program where licensed practical nurses can enter with advanced standing or students may enter with no previous nursing education. Further information is available from the Crowder College Nursing Department, (417)455-5554. Application requirements for all nursing students are as follows:

1. Be approved for admission to Crowder College
2. Be at least 19 years of age by completion of the program
3. Have a high school diploma or GED certificate
4. Have Certified Nurse Assistant certification
5. Have a minimum GPA or 2.75 on required general education courses
6. Have a minimum ACT composite score of 19
7. Eligibility to write the Licensure exam as described in the Missouri Nursing Practice Act section 335.066; completion of the program does not guarantee eligibility

### **Truck Driving School**

The Crowder College Truck Driving Program is a five week, 200 hour program. This entry level course prepares students to enter the trucking industry. The course utilizes advanced driving simulators and provides students with the

necessary experience of backing large vehicles and driving in most road situations. You can also train **Online**. For information on tuition and program details visit us on the web at [www.truckschool.org](http://www.truckschool.org) or contact us at 1-800-541-2891.

## Veterinary Technology

The Crowder College Veterinary Technology Program is a 78 credit hour program which is fully accredited by the American Veterinary Medical Association (AVMA) and prepares students for careers as veterinary technicians. This is a selective admission program. Applications are accepted in April for the class which begins the following August. An ACT test result must accompany the application. Students must complete a minimum of BIOL 101 or BIOL 110, MATH 50 (or appropriate placement), ENGL 100 (or appropriate placement), and LOC 50 (or appropriate placement), and have worked with or observed a licensed veterinarian in practice for a minimum of 20 clock hours to be eligible for the program. To be licensed as a Registered Veterinary Technician in Missouri, a student must be at least 19 years of age, graduate from an AVMA accredited program, pass the Veterinary Technician National Examination, and pass the Missouri State Veterinary Medical Board Examination. An applicant must be approved by the Missouri State Veterinary Medical Board, or the State Veterinary Medical Board of any other state in which the student wishes to be licensed, before being allowed to sit for these examinations. For more information call 417-455-5772.

## Assessment and Placement

### ACT and COMPASS Testing

To facilitate student success at Crowder College, the following guidelines have been established for enrollment in Crowder courses. Crowder College will accept the ACT scores for college-level placement if a student has an English score of at least 18, a math score of at least 23 and a reading score of at least 18. If a student's ACT scores are below the levels listed above, he/she must take the COMPASS test for placement purposes.

The COMPASS test is a placement test for students enrolling for an English, mathematics class, and to determine reading level for online courses and certain reading-intensive courses. The scores on this test are used to enroll students in appropriate levels of English, mathematics, reading, or other courses, which require a minimum score for placement. The COMPASS consists of three parts: Math, Reading, and Writing. The \$25 application fee to Crowder covers the cost of the first attempt of the test. Retakes of any section cost \$5 each. The range of scores for placement in other identified courses is available in the Academic Resource Center (ARC). Assessment and placement guidelines have been developed, after careful consideration, to promote the greatest level of individual student success.

Students who are required to enroll in a college preparatory class (a class numbered less than 100) must maintain a grade of C or better in each of the prescribed courses in order to continue with college level coursework. Crowder College placement exams, either ACT or COMPASS, are required of all first

time students who are seeking a degree, enrolling for 7 credit hours or more, or enrolling for a course that has a placement requirement. Transfer students who have not completed their freshman requirements in English and/or math will be required to take the Crowder College placement exams or provide adequate ACT scores. Students who have completed 6 hours will be required to take placement exams prior to enrolling in additional coursework. The COMPASS placement exam is for **"placement"** only. To better align Crowder College with ACT regulations, a student has the option of ***one retake per section, per academic year*** of the COMPASS (Math, Reading, and Writing). ACT clearly states that allowing more than one retake per year compromises the integrity of the test, and that ***"statistically, placement rarely changes from the original score."*** Crowder College will honor the highest COMPASS score achieved for placement in prerequisite courses for enrollment of the following semester. If a student wishes to "test out" of a class, the CLEP test is the more appropriate choice (for English or Math), or they may contact the Vice President of Academic Affairs Office to see if there is an option for taking a Departmental Exam or getting Experiential credit for a course. Speak to ARC Staff for CLEP and Testing Out opportunities.

A student cannot retake a section on the same day a test was administered. It is the experience of ARC Staff that nothing is gained by immediate retakes. This however, can be appealed to the ARC Director, or designated personnel at off-campus sites if dire need is demonstrated for an immediate retake.

For students who have taken the COMPASS on a retake basis for the year (used their one time already) and wish to take the COMPASS again during any given year may have the opportunity if the following takes place – 1) an appeal must be made to the ARC Director, 2) the student's instructor (of which the student is currently taking a class) asks specifically for a retake, because they feel that the student is improperly placed and could take a higher course, 3) the student was physically ill, a malfunction of the computer, an emergency tore them away from the test, or a drill/emergency of some kind took place (fire, tornado) causing the test to end. These and other exceptions can be appealed with the ARC Director or a Crowder site manager on a case-by-case discretionary basis.

Students may call the Academic Resource Center at (417) 455-5602 or visit [www.crowder.edu](http://www.crowder.edu) for complete COMPASS exam information and instructions. Additional COMPASS Guidelines are available for review in the Academic Resource Center, or on the Crowder website.

### **College Level Exam Program (CLEP)**

Students who have taken CLEP tests and wish to receive credit must have scores at the 50th percentile or higher on Subject Matter exams. The College does not grant credit for the CLEP General Examinations. Credit is given only in course areas offered as part of the normal college curriculum. Financial aid is not available.

Students wishing to take CLEP exams may obtain information through the ARC (417) 455-5602. Crowder College is a limited testing center.

### **Testing Out (Credit by Examination)**

Credit may be granted in selected courses to entering freshmen and other students who pass appropriate departmental examinations. Students wanting to TEST OUT of a class and do so before the class begins will be charged a \$50 assessment fee. Students who pass the test at the level designated by the department in which the test is taken will be given credit for the class. Students not passing at the designated level will not receive credit and the \$50 fee is non-refundable. Students who are currently enrolled in a class and attempt to test out during the semester will still be required to pay regular tuition for that class. Scholarships do not cover tuition for credit earned through testing out.

### **Advanced Placement**

High school graduates participating in the College Board Advanced Placement Program and passing the final examinations with a score of 3, 4, or 5 in the following areas will receive credit for these subjects: Political Science, PLSC 103; English Language & Comp, ENGL 101; Calculus AB, HIST 106, MATH 150 & 160; Biology/Biol 101; Chemistry, CHEM 111; Physics B, PHYS 111; Spanish Language, SPAN 101.

### **Military Service and Training**

Students with two years of verifiable active military duty will automatically be granted two (2) hours of Physical Education and two

(2) hours of Health and Hygiene. Other military coursework will be evaluated individually through interviews and submission of certificates documenting successful completion. Credit is normally granted for military coursework that has a course equivalent at Crowder College and is appropriate to the student's major. Students interested in having military coursework evaluated should contact the Records Office located in Student Services.

### **Student Classifications**

#### **Degree Seeking Students**

A student who has satisfied all admission requirements and is enrolled as seeking a degree or certificate.

#### **Non-Degree Seeking Students**

A student who has satisfied enrollment requirements but has not enrolled as one seeking a degree or certificate. A non-degree seeking student must comply with all other college policies, including placement testing for English and math courses. Regardless of semester hours accumulated, the student will not be granted a degree or certificate until he or she declares a major, files for a graduation check, pays applicable graduation fees and takes the exit exam. Non-degree seeking students are not eligible for financial aid.

#### **Dual Credit/Dual Enrollment Students**

Dual credit and dual enrollment students are high school students meeting the admissions requirements stated under "Special Admission". Dual credit students are enrolled in classes offered at

their respective high schools. Dual enrollment students attend classes at Crowder College or by other special arrangements as necessary. Financial aid is not available for these classes.

### **International Students**

A student that is a non-resident (non-immigrant) alien attending college with the purpose of returning to their homeland once their education is complete.

### **Military Duty Activation**

In the event that a student in the Armed Forces, National Guard, or Reserves is called to active duty while enrolled at Crowder College and the student submits a copy of their military orders to the Records Office, the student shall be granted a 100% refund of tuition and fees for all classes from which the student withdraws.

The student should work closely with their faculty to develop strategies to complete any or all courses successfully within the time-line provided. If circumstances are such that it is not possible to complete any of the courses, then the student may withdraw from any or all courses with a full refund of tuition, facilities use fees and lab fees.

### **Senior Citizen Students**

Students age 60 or older, who reside in the state of Missouri and are otherwise eligible to attend, are granted a tuition waiver. Senior citizens do pay for books, supplies, and laboratory and facility use fees. The tuition waiver applies only to "regular" tuition courses and is not applicable toward Community Education classes.

### **Lifetime Learner Students**

Students who have graduated from Crowder College before 2000 with a degree or certificate are allowed to enroll in one tuition-free course. Students who graduated after 2000 are allowed to enroll in one three-credit course with a tuition waiver. Lifetime Learners must present the Lifetime Learning Guarantee Card upon enrollment to the Cashiers Office and Admissions Office at any Crowder College campus. Students who fail to present a Lifetime Learning Card upon enrollment will be charged regular tuition fees.

### **Degree Classifications**

#### **Associate of Arts Degree (A.A.)**

The degree requirements are listed in the catalog. This degree is usually earned by students who concentrate in liberal arts or business courses on the college transfer level. The degree requires at least 61 units of credit.

#### **Associate of Science Degree (A.S.)**

The degree given to students who have completed the requirements listed in the catalog. Associate of Science degrees have been developed for transfer to specific universities and programs. Crowder College offers A.S. degrees in Nursing and Pre-Engineering.

#### **Associate of Applied Science Degrees (A.A.S.)**

The degree given to students who have completed the requirements listed in the catalog. A.A.S. graduates are prepared for the world of work upon completion of their selected program. While not designed for transfer, selected A.A.S. programs may be transferred to four-year colleges through

special articulation agreements. The degree requires at least 61 units of credit.

### **Certificates of Study**

Certificates of Study are given to students who have completed the requirements listed in the catalog. Certificates of Study are designed to prepare students for entry level positions in a variety of fields. The number of units of credit varies with the certificate program selected.

### **Course Classifications**

#### **Repeat Course**

A course already taken by a student in which credit has been earned may be repeated. When a course is repeated, regardless of the initial grade, the most recent grade earned will be calculated in the GPA. However, all grades earned will appear on the transcript. The transcript will note the cumulative GPA which includes all attempted hours for graded course work. Repeated classes may not be funded by Veterans Benefits, Federal Financial Aid awards, or A+.

#### **Online Course**

A course offered through the Internet. Students must meet requirements for college level English and reading (see page 8) to take online classes. Keyboarding and word processing experience are necessary, as well as access to a properly equipped computer with Internet access.

#### **Self-Directed Learning**

On a very limited basis, students may enroll in coursework as self-directed learners. The Instructor, the Division Chair and an instructional Vice President must

grant approval. Forms are available in the Instructional Office.

## **Flex Classes**

Classes that employ a combination of in-class attendance and on-line course work. Students must meet online course requirements to enroll in flex classes.

## **Traditional Course**

Traditional courses meet with the instructor in a classroom. Time spent in class weekly corresponds to the number of credit hours earned. Additional time may be necessary for lab work.

## **Non-traditional Credit**

Requests for college credit acquired through means other than classroom or laboratory experience should be initiated in the Instructional Office. The student should arrange for an appointment with the appropriate Division Chair or Program Director and have appropriate certificates, test scores or other documentation of successful completion of the work for which he/she is requesting credit.

**Non-traditional credit will not be transcribed if the student is not enrolled.** No financial aid is available for this credit.

## **Experiential Credit**

Opportunity for credit may be possible through on-the-job experiences, trade or technical skills, etc. Students interested in applying for such credit should do the following:

1. Contact the appropriate Division Chair or Program Director to arrange an appointment.

2. Submit a letter of application that includes documentation of the experience to be evaluated.
3. Attach an Alternative Learning form to be signed by appropriate individuals if credit is to be granted. Alternative

Learning forms are available in the Instructional Office.

Experiential credit will be evaluated by a team of professionals based upon the information presented by the student. There is a charge of \$50 per course for the evaluation. No financial aid is available for this credit.

## **Auditing a Course**

Students may AUDIT a class for personal development. No credit or grade is received for the classes, but fees are the same as for credit enrollment. Audits must be declared by the second week of class. Audits are not counted in calculating financial aid.

## **Community Education Classes**

These classes are offered on a not-for-credit basis and have varying durations and fees. Classes are offered each semester and feature a variety of disciplines, skills, and activities. Interested individuals should contact the Community Education office at (417) 455-5521. No financial aid is available for these classes.

## **Catalog, Program, Course, and Policy Changes**

The information in the catalog was accurate at the time of publication. The College reserves the right to make changes affecting policies, fees, curricula or any other matters cited in the catalog. The College will give reasonable and adequate notice to students to allow time to

adhere to any changes in the catalog. Fees, deadlines, academic requirements, courses, degree programs, and other matters described in the catalog may change with reasonable notice. Not all courses are offered each academic year and faculty assignments may change without notice.

Students consecutively enrolled must adhere to program requirements listed during the first semester enrolled but may elect to use the current catalog program requirements, but not more than one catalog shall be applied to meet graduation requirements.

**Students requesting to change to new program requirements under the current catalog should contact their advisor or the Records Office, prior to submitting a Graduation Check form, to receive advisement on graduation requirements.**

Students not consecutively enrolled must adhere to any new program requirements and policies as listed in the current catalog.

## **Payment of Fees**

Students are responsible for the timely payment of tuition, fees, and other applicable charges. Students will not be considered officially enrolled until all financial obligations have been met.

## **Payment Arrangements**

Students may enroll in classes during designated enrollment periods. Priority enrollment will be given to students with 1 or more hours. Payment arrangements must be made at time of enrollment. Acceptable payment arrangements include:

1. Payment in full
2. FAFSA on file
3. Participation in the college sponsored payment plan.

If arrangements have not been made by the beginning of the month the semester starts, the student's enrollment may be cancelled.

## **Acceptable payment arrangements**

1. Cash payment of account in full,
2. Proof of adequate Federal financial aid (Pell, etc.) or third party payment (VA, TRA, A+, etc.),
3. Participation in the college sponsored payment plan (contact the Cashiers Office for more information).

## **Course Changes and Attendance**

Students are responsible for their class enrollment status and may add classes through the registration deadline.

Students are also responsible to officially withdraw, in writing, from their class(es). Discontinuing attendance does not constitute a withdrawal.

Students who are reported as having never attended class(es) by the first four (4) weeks of the semester will constitute an administrative withdrawal and the student will not be guaranteed re-entry to the dropped courses. Students eligible for financial aid are not eligible to receive disbursements for never attended courses.

Withdrawal forms are available at each Crowder College location and may be completed and left with the appropriate personnel, or a written notification that

clearly indicates the class(es) to be dropped may be mailed directly to: Crowder College, Admissions Office, 601 Laclede, Neosho, MO 64850.

A student may withdraw from a traditional semester (16 week) course without grade penalty during the first twelve weeks of a traditional semester, the first three weeks of a (4 week) semester, or the first six weeks of an (8 week) semester. Students wishing to withdraw from any other course must do so prior to mid-term of that course. It is very important that students refer to the Tuition Refund Policy to understand what amount of tuition, if any, will be refunded based upon their withdrawal date. Failure to withdraw from a course will result in a grade of an "F" for the course(s) and the student will be financially responsible for the tuition and fees.

## **Hardship Withdrawals**

Students experiencing extenuating medical or family hardships or emergency situations which prevent course completion may submit a request for Hardship Withdrawal to the Vice President of Student Affairs. The student may be required to document unusual circumstances which justify request for a hardship withdrawal. The granting of a hardship withdrawal will also depend upon whether the student is passing the course as of the effective date of the hardship request. A hardship withdrawal does not clear financial aid responsibilities. Refer to the Student Handbook for restrictions.

## **Course Cancellations**

There are times when classes may be cancelled due to low enrollment. Fees paid for such classes will be refunded.

## **Tuition Refunds**

Students are eligible for refunds only if he/she have followed official withdrawal procedures in the Record's Office. Failure to attend classes does not constitute a withdrawal. If the student has paid college costs and officially withdraws, tuition will be refunded according to the refund policy after all charges have been applied to the account. If college costs have been partially or fully paid by financial aid (scholarships, grants, or loan) the refund may be returned to that financial aid source first. Any remainder will be returned to the student.

Please refer to the published refund schedule on the web site or inquire at the Cashier's Office.

## **Residency Status Policy**

**For tuition purposes, residency status is determined at the time of application for admission to Crowder College based upon the student's legal permanent address or the domicile where they plan to return or reside. The residence of a minor student under the age of 21 will be the residence of the parents/legal guardian(s) unless the student has established court declared emancipation.**

### **Classification of Residency**

**In-District:** students whose permanent home is within the main Crowder College district (Neosho, Diamond, Seneca, East Newton and McDonald County school districts). Students (spouses, parents or guardians) owning property in the district are considered in-district residents. Full-time active duty military personnel stationed on a Missouri military base, their spouses and dependents are considered residents of the district.



The residency status of recently discharged veterans will be based on legal residency at the time of induction into military service or on residency established during service.

#### **Out of District-Missouri**

**Resident:** students whose permanent home is located outside of the college district's boundaries, but within the state of Missouri

**Out of State Resident:** students whose permanent home is located outside of the state of Missouri

**International Resident:** students whose permanent home is in a foreign country at the time of registration

### **Change of Residency**

The burden of proof of establishing residency rests on the student. A request for a change in status must be submitted in writing to the Admissions Office with appropriate evidence or documentation of residency change. All requests **must** be received by the Admissions Office no later than the **second week** of the petitioning semester. Otherwise, residency status does not change during the semester. Change of residency status will only affect future terms and is not retroactive for previous semesters. In accordance with the Due Process policy, students may appeal decisions by submitting a grievance to the Vice President of Student Services.

### **Evidence of Domicile**

1. Proof of residence for 12 prior consecutive months within the district or state through lease agreement or deed.
2. Marriage Certificate and proof that new spouse owns property within the district or state.
3. Documentation reflecting in district or state residency and presence within the district or state of Missouri for the purpose of retirement, full time employment due to company relocation or transfer, or professional practice or business ownership.
4. Military discharge or active duty documents (DD214)
5. Proof of employment within the state.
6. Paid personal or property tax receipts within the college district (In-District) or state (Missouri Resident).

### **Financial Aid**

#### **Scholarships**

Crowder College offers a variety of college sponsored scholarships. College sponsored scholarship recipients must have acceptance forms signed and on file in the Financial Aid Office by July 1. Some scholarships may require applications, auditions, etc. Students may only receive up to four semesters of college-sponsored scholarships.

A complete list of Crowder College scholarships and the application guidelines are in the Scholarship Handbook which is available on the Crowder College website and in the

Financial Aid Office, first floor, Farber Building.

### **Pell Grants**

Eligibility: Be a U.S. citizen or eligible non-citizen, have a high school diploma, G.E.D., home-school certificate

Amount: Awards vary based upon the need of individual students as determined by the U.S. Department of Education needs analysis formula in combination with the cost of the program involved. Pell Grant award amounts are determined yearly by the U.S. Department of Education. Areas of family information that determine eligibility are: Family size, number in college, income and assets.

Apply To: Interested students must file an application for Federal Student Aid, available online at [www.fafsa.gov](http://www.fafsa.gov).

### **Federal Supplemental Educational Opportunity Grants (FSEOG)**

Eligibility: FSEOG funds are awarded to the earliest eligible applicants with the greatest need. The student will indirectly be applying for these funds as part of the Pell Grant process and will be notified of any award by Crowder College.

Amount: Awards are generally made from \$200 - \$400 per year depending on the residency status of the eligible student.

### **Federal Work-Study Program**

Eligibility: Students with demonstrated financial need may be eligible for work-study hours. The number of hours a student may work per week is determined by the expected family contribution which comes directly from the Student Aid Report, the "cost of education" as



figured by the school, and all other sources of aid.

Amount: Work study jobs pay at least the Federal Minimum Wage. The yearly amount a student may earn is based upon his/her calculated need. The Financial Aid Office will determine the amount of a possible work-study award for each student applying for aid at Crowder College.

Apply to: Interested students must first complete the Free Application for Federal Student Aid.

Jobs: For available on-campus work-study positions, please see the Career and Transfer Services Center at the main Neosho campus.

## **Federal Direct Loan Program**

Eligibility: Students must be enrolled at least half time (6 hours).

Amount: There is an annual base award amount for dependent students of \$3,500 for freshmen students and \$4,500 for sophomore students.

Independent students may borrow additional unsubsidized funds up to a maximum of \$6,000 annually and dependent students may borrow additional unsubsidized funds up to a maximum of \$2,000 annually. Students may not be eligible for the maximum amounts due to their cost of attendance and other funding. The college encourages students to borrow no more than he/she reasonably needs. Part of the advantage of a low-cost institution such as Crowder College is that a student may further his or her education without incurring large amounts of debt.

Apply to: Applications are available on the Crowder College website.

Important: Students whose complete and accurate aid applications are submitted by the fall semester priority date (July 1), or the spring semester priority date (November 1), may reasonably expect Pell Grant/Student Loan payments around the sixth week of the affected semester.

Students completing the aid application process after July, but before the start of the semester may reasonably expect payment by midterm. Students completing the aid application process after mid-October may reasonably expect payment within four weeks after submissions are complete. More detailed information about the application process for each type of aid and the financial aid policies and procedures at Crowder College can be found in the Financial Aid Handbook available on the college website [www.crowder.edu](http://www.crowder.edu).

### **Notice to Students/Parents**

Any student applying for financial aid (or the parent of a student) who purposely submits misrepresented information and/or altered documentation for the purpose of increasing his/her student aid eligibility or fraudulently obtaining federal funds will have the suspicions and evidence reported to the Office of the Inspector General, Washington, D.C. or to local law enforcement officials. Students will be liable and will be billed by the Crowder College Business Office for any aid funds which are received resulting from any type of overpayment which is caused by incomplete or inaccurate information submitted to the

Financial Aid Office on all aid applications.

## **Honors Program**

Students demonstrating high academic standards are invited to become members of the Crowder College Honors Program. The program has been designed to provide an arena for active participation in exploring a variety of in-depth subjects, assessing one's own strengths and weaknesses, and using critical thinking as a tool for problem solving. The program reinforces the validity of the scholarly approach and prepares participants for greater intellectual challenges. The Honors Program also fosters one-on-one instruction and mentor-based relationships and allows for participation in special events, including field trips, informal gatherings and a spring banquet. Honors students receive tuition and book scholarships each semester and the Honors designation is transcribed at the time of graduation. Requirements for participation in the program have been established for high school graduates as well as transfer and non-traditional students. Those interested in the Honors Program should contact the college's Honors Program Coordinator. (417)455-5570.

## **Veteran's Services**

The Financial Aid Office acts as the Certifying Official for veterans enrolled at Crowder College. Information about academic assistance and counseling is available to anyone entitled to educational benefits from Veterans Administration (VA). Information about VA benefits may be obtained from the Financial Aid Office, (417) 455-5434.

## Student Progress and Policies

### Student Progress Policies

Credits earned toward diplomas, certificates and transfer are determined by the amount of class or laboratory time specified for each course. Full-time students carry a minimum of 12 semester hours (credits).

Students with superior scholastic marks and advisor recommendation may register for more than 16 hours based on the following formula:

2.50 Cumulative Grade Point Average - 17 hours  
2.75 Cumulative Grade Point Average - 18 hours  
3.25 Cumulative Grade Point Average - 19 hours

Exceptions to the above guidelines must be approved by an Instructional Vice President or the Vice President of Student Affairs.

Additional guidelines to be considered before registration:

1. Students should expect to study or work outside of class approximately two hours for each hour in class.
2. Regular class attendance and participation are strongly recommended. Excessive absences are detrimental to student progress and success.

Typically, Crowder College students may not earn more than a total of fifteen (15) credit hours through one or more of the following alternative learning experiences: Experiential Credit, Self-Directed Learning and Testing Out (Credit by Examination). Under unusual circumstances, application for exceptions can be approved and

should be initiated by completing an Alternative Learning Form, which is available in the Academic Affairs Office

### Credit Hour Policy

**Expectation for students:** Crowder College's assignment of credit hours shall conform to commonly accepted practices in higher education and the federal definition of a credit hour. For each credit hour, students should anticipate spending a minimum of 150 minutes per week based on a 16-week semester. The distribution of this time will vary based on the course and delivery method, but could include direct faculty instruction, classroom activities, web-based activities, laboratory work, research, writing papers and reports, reading text and articles, internship hours, clinical hours, studio work, or class and assessment preparation.

### Grades

Grades are awarded on the following point system:

<u>Work Quality</u>	<u>Grade</u>	<u>Grade Points</u>
Excellent	A	4
Above Average	B	3
Average	C	2
Passing	D	1
Failure	F	0
Withdrawal	W	0
Repeat**	R	0
Audit	Au	0
Credit	Cr	0
No Credit	NC	0
Pass	P	0
Incomplete*	I	0

\*Students may receive an "Incomplete" only with instructor approval. At the end of one semester, coursework not completed automatically changes to an "F" grade. Students receiving an incomplete must finish the incomplete work in the time agreed

upon with the instructor.

\*\*Historical grade denoting a repeat.

### Grade Point Average (g.p.a.)

A student's grade point average is computed at the end of each semester. The average is used in determining class rank, graduation, honors, academic alert, warning, probation and suspension. Repeated courses cancel the former grade and the most recent grade is used to compute the g.p.a. A course may be repeated one time for the purpose of improving a grade. The most recent grade is used in g.p.a. calculations.

The semester grade point average is calculated by:

1. Multiplying the credit hours of a course by the points earned for the course grade.
2. Adding the points earned for each course.
3. Dividing the total points by the number of credit hours attempted.

Example:

ENGL 101 (B)  
3 hrs x 3 grade points = 9  
MATH 101 (A)  
3 hrs x 4 grade points = 12  
PSYC 101 (C)  
3 hrs x 2 grade points = 6  
HIST 106 (F)  
3 hrs x 0 grade points = 0  
BIOL 101 (D)  
5 hrs x 1 grade point = 5  
Total = 32 grade points (g.p.)

32 g.p./17 hrs = 1.882 g.p.a.

Cumulative grade point average is the total points earned in your college career divided by the total number of credit hours. Classes

with course numbers below the 100 level are figured in the semester and cumulative g.p.a., but are not counted toward graduation.

Records of student progress are kept on file in the Records Office. The Records Office will send official transcripts to other schools or employers with written permission of the student. The first copy sent is free; each additional copy costs two dollars, (five dollars if faxed).

In compliance with Public Law 93-380, the Family Educational Rights and Privacy Act of 1974, Crowder College affords all students the right to inspect official records directly relating to them and the right to challenge any statement considered to be inaccurate, misleading or inappropriate. The college requires written student consent before releasing college records. Complete information regarding student records is available by contacting the Record's Office. See Student Handbook "Rights to Privacy and Educational Records".

## **Grade Reports**

Final grade reports are issued at the end of each semester upon request. No final grade report will be issued, or credit granted, if the student has a financial obligation to the college or if the student file is incomplete.

## **Satisfactory Progress**

Satisfactory progress toward graduation is required for a student to remain in school. Minimum progress standards:

1-15 sem. credits attempted = 1.50 cumulative g.p.a.

16-30 sem. credits attempted = 1.75 cumulative g.p.a.

31-45 sem. credits attempted = 1.90 cumulative g.p.a.

46-60 sem. credits attempted = 2.00 cumulative g.p.a.

## **Retention Alert**

Students with a semester g.p.a. below a 2.0 but higher than the minimum academic progress standards will be placed in retention alert.

## **Academic Warning**

Students with a term g.p.a. below a 2.0 having a cumulative g.p.a. higher than a 2.0 will be initially placed on academic warning.

## **Academic Probation**

Students on academic warning with a term g.p.a. below 2.0 will be placed on academic probation regardless of the cumulative g.p.a. This applies also to students transferring in with a g.p.a. below a 2.0. After being placed on academic probation, the student must maintain a 2.0 g.p.a. each term to avoid being placed on academic suspension. Students on academic probation must enroll in College Connections (LOC 103) in the subsequent term. Students who are placed on academic probation and maintain a 2.0 term g.p.a., will be placed on probation-continued until their cumulative g.p.a. is a 2.0 or above.

## **Academic Suspension**

Students with a cumulative g.p.a. and term g.p.a. below 2.0 after a semester of probation will be placed on academic suspension. If the student has never been placed on academic suspension, they will be required to halt their academic pursuit for one major semester and then must petition to the suspension committee to be

considered for re-admittance. If the student was previously on suspension one time and is placed on suspension a second time, the student will be required to halt their academic pursuit for two major semesters and then must petition to the suspension committee to be considered for re-admittance. If the student was previously on suspension twice and is placed on suspension a third time the student is not eligible for re-admission to the College.

A student suspended three times may appeal to the Vice President of Student Affairs under extenuating circumstances.

**Readmission, Suspension and Appeal Process** – Refer to Student Handbook.

## **Academic Forgiveness**

Extenuating circumstances may justify a student being able to recover from an academic deficiency in ways which do not penalize his/her academic standing. The student's academic transcript, however, will be a full and accurate record of the student's academic career. For students receiving academic forgiveness, the transcript will record the graduation GPA excluding forgiveness courses or semester. Please refer to the Student Handbook for restrictions.

## **Attendance**

Students are expected to attend all class sessions and report to each session on time. If an absence occurs, students are responsible for all work missed. Excessive absences may result in a lowered or failing grade in the class.

## **Dean's List/Honors**

Full-time students with a 3.50 or better semester grade point

average are placed on the Dean's List. Students with high academic records are eligible for membership in the Crowder Chapter of Phi Theta Kappa, national scholastic honor society. Associate degrees and certificates are awarded "With Honors" to students earning the following cumulative g.p.a.s:

4.0 – Summa Cum Laude  
 3.85-3.99 – Magna Cum Laude  
 3.5-3.84 – Cum Laude.

## Graduation

### Degree/Program Requirements

Candidates for Associate in Arts, Associate in Science and Associate in Applied Science degrees must earn a minimum of sixty (60) hours with at least a 2.00 cumulative g.p.a. on all coursework. Certificate graduates must also earn a cumulative g.p.a. of 2.0 on all coursework. Crowder College must provide a minimum of fifteen hours of the final thirty (30) hours. Students in A.A.S. programs must complete at least 12 credit hours from the program's core technical classes through Crowder College. For multiple degrees or majors see the Glossary of College Terms.

### Graduation Checklist

Graduation checks must be initiated by the student and are processed in the Record's Office prior to the semester of intended graduation. Students completing their course work in August or December will be invited to participate in the Fall graduation ceremony. Students completing their course work in May will be invited to participate in the Spring graduation ceremony.

1. Complete a graduation application in the Records Office or online via My Crowder per the following dates:
  - Dec. grads - March 1
  - May grads - Oct. 1
  - Aug. grads - March 1
2. Pay the graduation fee in the Business Office by:
  - Dec. grads - Oct. 1
  - May grads - Feb. 1
  - Aug. grads – July 1
3. Sign up for and take the exit exam. Dates for exit exams will be posted in the ARC and on the Crowder College web site.
4. Have all outstanding accounts cleared in the Business Office, Library, and Bookstore.
5. Students who received Stafford Loan proceeds must complete an exit interview with the Financial Aid Office.

It is ultimately the responsibility of the student to monitor graduation requirements and see that these requirements are met.

## Campus Services and Resources

### Career Services Center

Career assessment evaluation is offered for students who are unsure what major they wish to pursue. To help students prepare for their job search, the Center also offers resume and cover letter writing assistance, mock interviewing, salary negotiation practices, job listings, and over 500 career related resource materials. The Career Services Center can be contacted at (417) 455-5618.

## Counselors

A counselor is available to assist with personal counseling related, to educational, social, personal and developmental goals. The on staff counselor provides referrals to community agencies and short term counseling. Counseling Services can be contacted at 417.455.5459.

## Faculty/Academic Advisors

Each student is assigned an academic/faculty advisor who is knowledgeable in his/her field of interest. These advisors assist in developing realistic educational and career goals and selecting coursework that best fits student abilities and needs. Students without clear career goals will receive enrollment forms from assigned general education advisors. The student is expected to contact his/her advisor prior to each registration period for assistance in planning appropriate course work. The advisor's approval may be required for students to register. It is ultimately the responsibility of the student to monitor graduation requirements and see that these requirements are met.

## Academic Resource Center (ARC)

The ARC offers a wide range of assistance and resources to all Crowder students. The ARC offers tutoring services, make up testing, special accommodations testing, a computer lab, retention and student success services. It also serves as a valuable resource to faculty and staff at all Crowder campuses. Assistance with the admission process is the initial service offered through academic assessment and placement. The ARC staff is eager to assist students

who desire to arrange tutoring, testing, or supplemental instruction. The PLATO Learning Systems and HAWKES math software is available in the computer lab for all students. The ARC can be reached at (417) 455-5602.

## **College Orientation (COLL 101) and College Connections (LOC 103)**

Crowder College has adopted an intrusive retention approach for students, ranging from early orientation services, to contacts with at-risk groups, and follow up services for students transitioning past Crowder College for employment or continuing education. For more information about College Orientation or College Connections, please contact the Coordinator at (417) 455-5559.

## **Learning Resources**

**Center (LRC)** Found in the Bill and Margot Lee Library the LRC serves students, faculty, and staff at all campuses by providing access to information resources, instruction, technology, and services that support teaching and learning in the mission of the college. Library instruction is provided to classes, small groups and individuals.

The library collections include approximately 38,000 books, 20,354 e-books, 155 current periodical subscriptions, 2500 art prints, over 170,000 units of microforms, approximately 3700 audiovisual programs including recorded books, VHS and DVDs, and online research databases. Library electronic resources expand the periodicals collections to include many online full-text articles in magazines, journals,

and newspapers, as well as online encyclopedias, dictionaries and atlases. For students and staff, remote access allows the internet-based full-text databases to be searchable from any campus computer or from home. Traditional interlibrary loan services are available for resources not found in the LRC. **The LRC is affiliated with MOBIUS, a statewide consortium of academic libraries. MOBIUS libraries share a common library platform (<http://mobius.missouri.edu>) that allows students and staff to borrow library materials from among the 60 member libraries with access to the books within three days. The SWAN online library catalog (<http://swan.missouri.edu>) is the gateway to sharing resources among the nine libraries in the cluster that includes the Crowder College library.**

There are 28 computer workstations available for student research. Many of the stations have application software to support classes. The library is typically open 66 hours per week for research, individual and small group study, leisure reading, viewing audiovisual programs, and computer usage.

The LRC receives support from the Foundation through private gifts and donations and from the Friends of the Library.

(A federally funded Student Support Services TRIO program).

## **Student Support Services (SSS)**

The SSS program is designed to improve retention, graduation, and successful transfer of participants. SSS provides a supportive environment where participants

can have their academic, career and personal needs met. SSS offers a wide variety of services including: academic support, study groups and individualized tutoring, personal advisement, cultural opportunities, computer lab, college transfer assistance, community service opportunities, scholarship information, technology check out, and weekly workshops on a wide variety of topics, all at no cost to the participant.

In order to qualify for SSS services, a student must be a U.S. citizen or permanent resident, enrolled at Crowder College, and meet at least ONE of the following criteria: be a first generation college student, have documented financial need, or have a documented disability. While applications are accepted year round, students are encouraged to apply their first semester. Enrollment is limited and students are accepted on a first-come, first-served basis. SSS is located on the second floor, Newton Hall.

## **Tech Prep**

Through Tech Prep articulation, students can save time, money and earn college credit toward an Associate of Applied Science degree or a one-year certificate from Crowder College. Articulation is a process that links programs offered at area vocational-technical schools, high schools, and Crowder College. This articulation process allows for a smooth transition so students can avoid repeating courses. Qualified high school/vocational students can earn up to 15 college credit hours by successfully completing Tech Prep requirements while enrolled in a vocational-technical program. To learn more about earning college credit through Tech Prep, contact

your school's vocational guidance counselor, vocational instructor or the Tech Prep Office at Crowder College, 417-455-5734.

## **College Assistance Migrant Grant Program (CAMP)**

CAMP is a federally funded program designed to provide an opportunity for students of migrant families to attend college. Crowder College's program recruits students from Missouri, Oklahoma and Arkansas. CAMP assists students in successfully completing their first year of college through various services such as:

- Financial Aid
- Room and Board
- Tuition Assistance
- Textbooks
- Academic/Scholarship
- Advising
- Tutoring
- Counseling
- Career Planning/Counseling
- Cultural Experiences

A student is eligible for CAMP if they meet one of the following criteria:

1. You, your parent(s) or guardian(s) have engaged in migrant or seasonal farm work for at least 75 days within the last 24 months
2. Has been eligible for the Title 1C Migrant Education Program
3. Has qualified for the Workforce Investment Act 167 Program (WIA 167), formerly the JTPA 402 Program

You must be either a United States citizen or a qualified resident alien eligible for federal public benefits. You also must

have a high school diploma or GED and meet the minimum requirements for admission to Crowder College.

## **Student Housing**

Residence Complex applications and information are available from the Campus Life Coordinator in the Campus Life Office, (417) 455-5644.

## **Office of Disability Services**

(See Student Handbook)  
The Office of Disability Services (ODS) is committed to ensuring that students with disabilities have equal access and reasonable accommodations to goods, services, and facilities. In addition, ODS will ensure that students with disabilities are not excluded, denied services, segregated or otherwise treated differently than other people. ODS also makes information accessible to and useable by people with communication disabilities. The ODS office is located in the Student Services department in the Farber Building, and can be contacted at (417) 455-5733. For more information, please review the Student Handbook on Policies and Procedures: Accommodations, Accessibility, and Testing online at [www.crowder.edu](http://www.crowder.edu).

## **Student Clubs and Organizations**

There are many opportunities for students to become involved in extra-curricular activities and organizations on campus. It is important to find a good balance between academic and non-academic activities, but both are important to maximizing the college experience. Information regarding clubs and organizations can be obtained from the Campus Life

Office, (417) 455-5644, or from the Student Services Office at the off-campus sites. Upcoming events will be posted to the campus events calendar at [www.crowder.edu](http://www.crowder.edu).

## **Community Services/Continuing Education**

The intent of the program is to match college educational resources to community needs in the most convenient, accessible and affordable manner. The program strives to cover areas such as leisure learning, personal growth and acquisition or expansion of various skills. These classes are usually not offered for college credit (non-credit) and are typically presented as workshops, seminars and short courses. For more information call the Continuing Education Office, (417) 455-5521.

## **The Alliance for Business**

The Alliance for Business is a partnership between Crowder College and Missouri Southern State University and is designed to provide direct training assistance, performance consulting and professional support for business and industry throughout the region. The Alliance assists with all aspects of training, including initial needs assessments, comprehensive plan design, curriculum development, instructor selection, materials acquisition, classroom monitoring and final course evaluation. Course content is tailored to the individual needs of the company or organization sponsoring the training. Areas such as supervisory and management training, employee relations, clerical/office management, technical writing, safety training, hazardous materials handling, computer applications and basic machine operation are

commonly addressed subjects. This training can be accomplished on-campus or at the actual worksite, whichever meets the organization's training need most effectively.

The Alliance for Business has a full-time staff dedicated to meeting the needs of business and industry. They can be reached by phone at (417)455-5713 or 1-800-783-8053. To find out more about The Alliance for Business visit [www.goalliance.biz](http://www.goalliance.biz).

## **Glossary of College Terms**

Academic Forgiveness – the procedure by which a semester of low g.p.a. classes taken at Crowder College can be excluded from your cumulative g.p.a.

Academic Load - the number of credit hours you can take each semester. For instance, English Composition I is 3 credit hours. A normal academic load is 12 to 16 hours a semester, although you can take less.

Academic Probation – A student whose academic progress falls below minimum academic requirements will be placed on academic probation. After being placed on academic probation, the student must maintain a 2.0 g.p.a. each semester to avoid being placed on academic suspension. Students on academic probation must enroll in College Connections (LOC 103) in the subsequent term.

Academic Suspension - Students with a cumulative g.p.a. below 2.0 after a semester of probation will be placed on academic suspension. The

student will be required to halt their academic pursuit for one semester and then must petition the suspension committee to be considered for re-admittance. Students who are on a status of probation continued who do not achieve a 2.0 term gpa will also be placed on suspension.

Academic Warning - Students with a cumulative g.p.a. below a 2.0 but higher than the minimum academic progress standards will be placed on academic warning.

Academic Year - from August to May, including fall and spring semesters.

Associate in Arts Degree (A.A.) - the degree given to students who have completed requirements as listed in the catalog. Usually given to people who concentrate in liberal arts or business courses on the college transfer level. The degree requires at least 60 units of credit (credit hours).

Associate in Applied Science Degree (A.A.S.) - the degree given to students who have completed the requirements listed in the catalog. Requires at least 60 units of credit (credit hours).

Associate of Science Degree – the degree has been developed for transfer to specific universities and programs. Consult with an advisor about pursuing this degree.

Auditing a Class - attending a course but not expecting to get credit for it. People who audit usually do not have to do the outside assignments or take the examinations. Fees are the same for regular enrollment. Audits must be declared by the end of the second week of the semester.

Co-requisite - an academic course required to be taken in conjunction with another course.

Counselor - a professionally trained person who assists students with academic, vocational or personal problems.

Credit - a way of counting how much each course is worth toward graduation. Usually, credit hours are assigned to courses according to how many hours a week the course meets; however, in some fields you are required to attend class for more hours than announced credit. In art, for instance, you may spend four hours a week in class for two hours of credit. Your tuition is based on the number of credit hours for which you register.

Curriculum - a group of courses you are required to take. The courses vary according to the program you are taking.

Dean's List - a list of all the students taking at least 12 credit hours and receiving a 3.5 grade point average for that semester.

Disciplinary Probation - a warning to students who have broken some of the college rules. Being put on probation may include some special restrictions as to what those students can do. If the students don't abide by the rules or special instructions, he/she can be dismissed from the college.

Dismissal - being refused permission to attend college. A record of the dismissal becomes part of the student's permanent record.

Double (or Multiple) Degrees - students wanting to gain another degree at Crowder College need to meet all the requirements of the new degree and have an additional 15 credit hours taken at Crowder College that were not counted for another Crowder degree.

Double (or Multiple) Majors - students wanting to have more than one major simply need to meet the requirements of all desired degrees.

Dropping – official process for leaving a course. In order to drop a course, students must fill out the appropriate forms in the Admissions Office, Student Services Office. Students who qualify may drop courses through My Crowder during allowed periods of time

Elective - a course you choose to take but that is not a required part of your regular curriculum. Electives count toward the hours needed for graduation, but cannot replace the courses that are required in your program.

Extracurricular Activities - opportunities the college offers as a part of its service to students. Usually free with a student ID card. He/she include such things as movies, sports, clubs, student government, dances, parties, etc.

Finals - examinations given at the end of a semester, sometimes covering all the material of the course. In the day program, two hours are set aside for each course and the tests are given on a different schedule than the regular class meeting time. Even though some courses do not end

with one big comprehensive test, students are usually expected to attend the class during the time set for the final examination

Financial Aid - any kind of help given toward attending college. Financial aid can include grants, loans or jobs.

Freshman - students who have completed less than 28 hours of credit.

Full-time Student - anybody taking 12 credit hours or more.

Grade Point Average (g.p.a.) - a method of showing how well you are doing in college based on the grades you receive. An A is worth 4 points; a B worth 3; a C, 2; D, 1; and an F, 0.

Graduate - a person who has finished the required curriculum, completed the necessary hours and received a degree.

Grant - money given to you to help you attend college. Usually grants do not have to be repaid.

Humanities - courses dealing with such things as literature, music, art, foreign languages, philosophy and language.

Intramural Activities - usually games and sports limited to people attending college.

Life Sciences - courses dealing with physical development and health, including biology, nursing, dental hygiene, etc.

Major - the program you are concentrating on, such as general studies, business or automotive.

Part-time Student - anybody taking less than 12 credit hours in a semester.

Pre-registration - deciding on the courses you will take and reserving spaces in them well before a semester starts. You can go through pre-registration and be sure you get the courses you want without paying the full tuition until the beginning of the semester.

Prerequisite - a course that must be completed before you take a more advanced course in the same field. English Composition I is a prerequisite for English Composition II, for instance.

Registration - filing out the forms and paying the fees necessary before you can be enrolled in a class.

Scholarship - money or other financial aid given to students doing especially well in school. Scholarships are available in some programs and not in others, but information is available in the Student Services Office.

Social Sciences - courses dealing with how people live, including such things as sociology, economics, political science, history, psychology, etc.

Sophomore - a student who has completed more than 28 credit hours, but less than the number required for an Associate Degree.

Special Student - a student who has not yet completed a high school diploma or equivalency, or one who has completed two or more years of approved college work.



Suspension - a college disciplinary action that prevents a student from attending classes or coming to school activities.

Transcript - a permanent record of the courses you have attempted and the grades you received, or the courses you have withdrawn from. If you transfer to another college, that college will want an official transcript, which must contain the registrar's signature and the school seal.

Transfer Credit - courses which four-year colleges will accept as meeting part of their requirements. Usually transfer courses are numbered 100 or above, but the practice is not the same at all colleges, so it's a good idea to consult a counselor.

Vice President - an administrator in charge of a certain part of the college, such as Vice President of Student Affairs, Vice President of Academic Affairs, etc.

Waiver - permission to omit a required course or substitute a similar course for one that is required.

## Description of Courses

ADDICTION COUNSELING .....	27
ADVANCED MANUFACTURING TECHNOLOGY .....	27
AGRICULTURE .....	28
ALTERNATIVE ENERGY .....	30
ART & DESIGN .....	31
AUTOMOTIVE TECHNOLOGY .....	32
COLLISION REPAIR .....	33
BIOLOGY .....	33
BUSINESS .....	34
OFFICE ADMINISTRATION .....	36
CHEMISTRY .....	36
COLLEGE SKILLS .....	37
COMPUTER PROGRAMMING .....	37
COMPUTER AND NETWORK SUPPORT .....	37
ENERGY EFFICIENT BUILDING TECHNOLOGY .....	38
DIESEL TECHNOLOGY .....	40
DRAFTING AND DESIGN TECHNOLOGY .....	41
EARLY CHILDHOOD DEVELOPMENT .....	42
ECONOMICS .....	42
EDUCATION .....	43
EMERGENCY MEDICAL SERVICES .....	43
ENGLISH AND LITERATURE .....	44
ENGLISH LANGUAGE INSTITUTE .....	44
ENVIRONMENTAL HEALTH TECHNOLOGY .....	45
FIRE SCIENCE .....	46
GEOGRAPHY .....	47
GEOLOGY .....	47
HEALTH INFORMATION TECHNOLOGY .....	47
HISTORY .....	48
HONORS .....	49
HUMANITIES .....	49
JOURNALISM AND PUBLIC RELATIONS .....	49
LANGUAGES .....	50
LAW ENFORCEMENT .....	51
LEARNING OPPORTUNITIES .....	52
MATHEMATICS .....	53
MUSIC .....	54
NURSING .....	54
PHARMACY .....	56
PHILOSOPHY .....	56
PHYSICAL EDUCATION .....	57
PHYSICS AND PHYSICAL SCIENCE .....	58
POLITICAL SCIENCE .....	58
PSYCHOLOGY .....	59
SOCIOLOGY .....	59
SOCIAL WORK .....	59
SPEECH .....	60
THEATRE .....	60
TRANSPORT TRAINING .....	60
VETERINARY TECHNOLOGY .....	60
WELDING .....	61

Course descriptions are listed on the following pages under headings, which indicate areas of instruction. Headings are arranged alphabetically. Courses with numbers less than 100 do not fulfill degree requirements toward graduation and do not transfer as part of an associate degree. Course Credit notations, as shown within the parentheses; explain how many hours are required in a lecture and/or lab-type setting. For example, for a regular 16-week semester, a course with a (3-2) notation typically requires students to attend 3 hours of lecture and 2 hours of lab each week.

# ADDICTION COUNSELING

## **SOCC 201**

### ***Introduction to Dynamics of Addiction & Criminal Behavior (3-0) 3 Credits***

This course will introduce concepts regarding addictive processes as it relates to each aspect of the biological, psychological, social, environmental model. Students will receive information to enhance their understanding of addiction, addictive processes, pharmacology, legal issues, and treatment modalities currently available. Prerequisites: (PSYC 101) (Fall)

## **SOCC 210**

### ***Ethics and Legal Issues (3-0) 3 Credits***

This course will introduce the criminal and juvenile justice continuum. Students will apply professional codes of ethics to professional conduct through case studies. The guidelines presented are designed to aid the professional in behaving in an ethical manner. An introductory overview of the court systems, their role, and function will be presented (Prerequisites or Corequisites: SOCC 201) (Fall)

## **SOCC 220**

### ***Counseling Theory and Practice of Group Dynamics (3-0) 3 Credits***

Students will gain knowledge of counseling theories and develop techniques to establish a therapeutic relationship with the client and other significant individuals in order to achieve treatment and/or criminal justice objectives. Students will evaluate concepts and strategies of group dynamics and practice techniques with regard to individual and group counseling. (Prerequisites: SOCC 201) (Spring)

## **SOCC 230**

### ***Assessment, Intake, and Screening (3-0) 3 Credits***

Students will learn to conduct a comprehensive interview, collect and evaluate data, and document information in order to determine eligibility and appropriateness for placement in programs or services. Students will gain skill in using standardized instruments, interviews, and other methods in order to identify any coexisting conditions (medical, psychiatric, physical) that indicate the need for additional professional assessment and/or services. (Prerequisite=SOCC 220) (Fall)

## **SOCC 250**

### ***Case Management Practicum (0-3) 3 Credits***

This course provides students the opportunity to observe and participate in the case management of clients in the criminal justice and counseling fields with regard to substance abuse. The student will receive regular clinical and administrative supervision and consultation. Students will choose three

four-week blocks (totaling 125 hours) from the following settings: substance abuse treatment; Drug Court; social services; probation; law enforcement or related fields. (Prerequisites: SOCC 210 & SOCC 230) (Spring)

# ADVANCED MANUFACTURING TECHNOLOGY

## **AMT 102**

### ***Introduction to Industrial Electricity (2-2) 3 Credits***

This course is designed to provide a broad range of basic information and hands-on practice to beginning students in industrial electricity. Topics covered at the introductory level will include basic electrical circuits, electrical measurements, electrical relay control logic, residential and industrial wiring. (Co-Requisites: AMT 111, MATH 60, COMM 80)

## **AMT 104**

### ***Electrical Motor Controls (2-2) 3 Credits***

This course is designed to provide a broad understanding of electric motor control operations. The topics covered will include interpretation of schematics, diagnostic trouble shooting, electronic sensing devices, safety, three phase power, ladder logic and timer controls. (Prerequisites: AMT 102; Co-Requisites: MATH 50/70)

## **AMT 111**

### ***Introduction to Industrial Safety (1-0) 1 Credit***

This course is designed to give the students the basic safety knowledge to obtain an "OSHA 10" card (OSHA = U.S. Occupational Safety and Health Administration). Students will access a selected on-line training site and complete the requirements to obtain OSHA 10 certification.

## **AMT 112**

### ***Occupational Safety (1-3.5) 2 Credits***

This course provides information and training to address the hazards found in renewable energy, construction and industrial jobs. Topics include: working at heights, assisted and self-rescue, working around heavy equipment, first aid/CPR and basic firefighting. Upon successful completion of the course work, students will receive Competent Person certificate from Capital Safety, and must obtain a Construction or General Industry OSHA 30 card and Red Cross First Aid/CPR 8-hour certificate through lab fees or student's own expense by the end of the course.

## **AMT 122**

### ***Basic Machining (2-2) 3 Credits***

This course is designed to provide a working knowledge of basic machine tools and their safe operation. Topics covered

will include: shop safety, basic mathematics, blueprint reading, precision measurement, metal sawing, drills and drilling, bench grinding, engine lathes, and milling machines. (Co-Requisites: AMT 111, MATH 60, COMM 80)

## **AMT 132**

### ***Industrial Hydraulics (2-2) 3 Credits***

This course is designed to provide a broad range of basic information and hands-on practice to beginning students in manufacturing hydraulics. Topics covered will include hydraulic power systems, basic hydraulic circuits, principles of hydraulic pressure and flow, hydraulic speed control and pressure control circuits. Students will design, build, test, troubleshoot, and repair a typical hydraulic system. (Prerequisites: AMT 111; Co-Requisites: AMT 102, MATH 50/70)

## **AMT 142**

### ***Manufacturing Mechanics (2-2) 3 Credits***

This course is designed to provide the students with basic knowledge of automated manufacturing power transmission and conveyance devices. Topics covered will include: belt drives, chain drives, bearing types, precision shaft alignment, types of seals, lubricants, product conveyance devices and gear reduction. (Prerequisites: AMT 111; Co-Requisites: MATH 50/70)

## **AMT 162**

### ***Industrial Process Control I (2-2) 3 Credits***

This course is designed to provide a broad understanding of Industrial Process Control as it relates to automated manufacturing. A commercially available hands-on trainer coupled with online course content will be used to cover industrial safety, interpretation of schematics, loop controllers, current to pressure converters, instrument calibration, and automatic control methods. (Prerequisites: AMT 102 or permission of instructor; Co-requisite: MATH 104)

## **AMT 182**

### ***Introduction to Automated Robotics (3-0) 3 Credits***

This course is designed to provide a working knowledge of industrial robotics. Topics covered will include: robotic and industrial safety, applications, manipulators, end effectors and programming examples. (Prerequisites: AMT 102; Co-Requisites: MATH 50/70)

## **AMT 204**

### ***Programmable Controllers (2-2) 3 Credits***

This course is designed to provide a working knowledge of Programmable Logic Controllers (PLCs) with hands-on practice for students in the various technical programs. Topics covered will include: PLC operation, applications, configuration, programming examples, and

4/24/2012

troubleshooting. (Prerequisites: AMT 102;  
Co-Requisites: AMT 104, MATH 104)

**AMT 206**  
**Programmable Logic Controllers II (2-2)**  
**3 Credits**

This course is designed to provide advanced training in programmable logic controllers as they are used in industry to manage multiple automated processes. This is the second course covering programmable logic controllers (PLCs) and will provide a working knowledge of current industry applications. (Prerequisites: AMT 204 or Permission of Instructor)

**AMT 284**  
**Automated Robotic Programming (2-2)**  
**3 Credits**

This course is designed to provide entry level knowledge of industrial robotic programming. Topics covered will include the utilization of special "teach pendant" accessories for remote programming, robotic axis interfacing, and program optimization relative to cycle times and other functions. Students will practice the interchange and calibration of various system components on a robotic trainer and modify "pick and place" programs using override function keys. (Prerequisites: AMT 182; Co-Requisites: MATH 104)

**AMT 290**  
**Manufacturing Internship (0-7.5)**  
**3 Credits**

This course provides direct hands-on experience in a structured environment under the direct supervision of experienced tradesmen employed by a hosting organization. The course requires that 120 clock-hours be spent at the hosting location(s) during the term of study. (Prerequisites: Sophomore Standing (i.e.-Completed 28 semester hours) or Permission of Instructor)

**INTC 197, 198, 199, 297, 298, 299**  
**Topics in Industrial Technology (0-8 to 3-0)**  
**1-3 Credits**

This is a variable content course with areas of study that reflect current needs of individual students in the area of Industrial Technology. Topics are identified in the course description. (Prerequisite: Permission of instructor)

## **AGRICULTURE**

**AGEC 123**  
**Principles of Agriculture Econ (3-0)**  
**3 Credits**

This course is an introduction to fundamental principles of microeconomics with emphasis on application to agriculture; adjustment to forces by consumers, farmers and businessmen planning, producing, marketing, and consuming products. (Prerequisites: MATH 50 or placement scores that indicate a readiness for MATH 100 or higher) (Spring)

### **28 Course Descriptions**

**AGEC 213**  
**Farm Bus. Management (3-0)**  
**3 Credits**

Economics and management principles are applied in this course to planning and operating agricultural farms and businesses. Consideration is given to decisions involved in the organization and operation of the business and the correct use of available information in making decisions. Attention is given to problems of labor management, mechanization, rental arrangements, contract farming and credit financing for different sizes and types of agricultural businesses. (Prerequisite: AGECE 123 or permission of instructor) (Fall)

**AGEC 223**  
**Agriculture Computer Applications (2-2)**  
**3 Credits**

This course covers computer use in the workplace with emphasis on agribusiness situations. Computer applications including word processing, spreadsheet, databases, and presentation managers will be covered. Also included will be accessing information through the Internet and World Wide Web, telecommunications, an introduction to web page design and other software appropriate to agribusiness.

**AGMC 205**  
**Agricultural Mechanics (2-2)**  
**3 Credits**

This course provides students instruction in basic agricultural skills that are required in various occupational areas related to the production of agricultural commodities. The course will cover basic metal working, carpentry, electricity, plumbing, preventive maintenance, and combustion engine operation. This course is a prerequisite for Supervised Occupational Experience 212. (Fall)

**AGRI 105**  
**Problems in Agriculture (1-0) 1 Credit**

This course provides an opportunity for students to participate in directed problems and research in an area of special interest from the field of agriculture business, ag engineering, crops, horticulture, soils and livestock.

**AGRI 106**  
**Problems in Agriculture (2-0)**  
**2 Credits**

This course provides an opportunity for the students to participate in directed problems and research in an area of special interest from the field of agriculture business, ag engineering, crops, horticulture, soils and livestock.

**AGRI 107**  
**Problems in Agriculture (3-0)**  
**3 Credits**

This course provides an opportunity for the students to participate in directed problems and research in an area of special interest from the field of agriculture business, ag engineering, crops, horticulture, soils and

livestock.

**AGRI 108**  
**Problems in Agriculture (4-0)**  
**4 Credits**

This course provides an opportunity for the students to participate in directed problems and research in an area of special interest from the field of agriculture business, ag engineering, crops, horticulture, soils and livestock.

**AGRI 111**  
**Ag Career Orientation (1-0) 1 Credit**

This course is required for all agriculture degree-seeking students within their first semester of enrollment at Crowder College. Transfer students that have successfully completed a similar college orientation course elsewhere or have a cumulative grade point average of 2.0 on a minimum of 12 credits are exempt from this course. This course is designed to provide students with information they will need to function as a Crowder College student, as well as career exploration and the identification of personal short and long term goals the student will need to be successful.

**AGRI 123**  
**Agriculture Chemicals (3-0)**  
**3 Credits**

This course will introduce principles of the safe use, handling, and storage of chemicals that are needed in the production and storage of plant and animal products, along with the impact of agricultural chemicals on the environment (Spring - Evenings)

**AGRI 190**  
**World Food and Society (3-0)**  
**3 Credits**

A study of economic issues in international agriculture including the world food problem, agricultural development, agricultural and food trade and policy, food production and distribution and its relationship to societal advancements in developed and developing nations. (Prerequisite: ENGL 101)

**AGRI 202**  
**Agriculture Capstone (2-0) 2 Credits**

This course is designed for all agricultural majors with emphasis on job placement. Areas of discussion include goal setting, leadership development, human relations, résumé development, interview skills development, making transition, team dynamics and exit interviews. (Spring)

**AGRI 204**  
**Internship in Agriculture (0-0)**  
**(180 contact hours) 4 Credits**

The student will receive on-the-job experience in a designated training site. The student will apply his or her training in an occupational setting, applying previous learned skills and knowledge to the work place. (Prerequisite: AGRI 202 or permission from instructor)

**AGRI 212, 222****Supervised Occupation Experience (SOE) (1-0) 1 Credit**

Students majoring in Agri-Business or Farm Management must enroll in one credit hour SOE experience per semester. Those without a part-time job in their field of training may get SOE credit on the college farm with 40 clock hours of work experience per semester. (Fall-Spring)

**AGRI 223****Public Relations in Agri-Business (3-0) 3 Credits**

This course addresses the principles and techniques used to create and maintain public good will and acceptance are analyzed. Emphasis is placed on how business functions in the interests of society, and on the process of creating a favorable image in the public mind. (Spring)

**AGRI 233****Travel Seminar in Agriculture (0-3) 3 Credits**

This course is for all agriculture majors with an emphasis in exposing students to a broad spectrum of agricultural production, processing, and marketing outside of the four-state region. The course is comprised of a week of travel to a predetermined region of the U.S. and focuses on the major agricultural activities found in that region. Students are required to keep a daily journal of the seminar and after seminar, complete a written summary based on the journal. **Course will be graded as a "pass" or "fail" only.**

**AGRI 299****Topics: Travel Credit (0-3) 3 Credits****AGRN 113****Crop Science (2-2) 3 Credits**

This course provides students with principles of production and management of various grain and forage crops. The nature, importance and ecology of various crop plants are discussed. The laboratory includes identification and study of plants and plant parts. (Fall)

**AGRN 121****Crop Evaluation (0-2) 1 Credit**

Students become proficient in crop, weed, and disease identification, seed analysis, and grain grading through extended lab experience. (Prerequisite: AGRN 113 or permission of the instructor) (Spring)

**AGRN 214****Fundamentals of Soil Science (3-2) 4 Credits**

This course presents basic concepts of all aspects of soil science including: composition and genesis; physical, chemical, and biological properties; soil water; classification and mapping; soil conservation and management practices; soil fertility and productivity (liming, nature and use of fertilizers and manures, and soil testing). It also introduces the relationship of the soil to current concerns such as

environmental and water quality in both agriculture and non-agricultural land uses. (Prerequisite: CHEM 101 or 104, or 111 or permission of the instructor) (Fall)

**AGRN 221****Soil Evaluation (0-2) 1 Credit**

Soil Evaluation is a field-laboratory oriented course that focuses on the techniques used to (1) describe soil morphology, and site and profile characteristics, (2) make land use interpretations based on soil characteristics, and (3) classify soils. (Prerequisite: AGRN 214 or permission of the instructor.) (Spring)

**AGRN 223****Grain Crops (3-0) 3 Credits**

This course is a detailed study of the botany, origins of domesticated types, cultivation, adaptation, distribution, production practices and utilization of cereal grain crops. (Prerequisite: AGRN 113) (Fall, even years)

**AGRN 243****Forage Crops (3-0) 3 Credits**

This course is a study of the major crops grown for forages and their identification, culture, management, preservation and utilization. (Prerequisite: AGRN 113) (Spring, even years)

**ANSC 101, 121****Livestock Selection (0-2) 1 Credit**

Students practice judging: oral and written discussions on beef cattle, dairy cattle, swine, sheep and horses for competition. (Prerequisite: Permission of the Instructor) (Spring)

**ANSC 114****Animal Science (3-2) 4 Credits**

This course is an introduction to the livestock industry. Fundamental and essential concepts of livestock production, selection and its relation to production, types, market classes, and grades of cattle, swine, sheep and goats.

**ANSC 143****Dairy Production (2-2) 3 Credits**

This course covers fundamentals of the dairy industry, including basic principles of nutrition, reproduction, milk production, health and management of dairy herds. (Prerequisite: ANSC 114 or ANSC 113 or ANSC 123) (Spring, even years)

**ANSC 153****Beef Cattle Production (2-2) 3 Credits**

Students will learn breeding, feeding, management and marketing of commercial and seed stock beef cattle. (Prerequisite: ANSC 114 or permission of instructor) (Spring, odd years)

**ANSC 203****Meat Science and Products (1-4) 3 Credits**

This course covers the processing, grading, inspection, preservation, nutritive

value and economical value of meats and meat products. (Fall)

**ANSC 213****Feeds and Nutrition (3-0) 3 Credits**

Students will learn the principles of animal nutrition, feed composition and formulation of balanced livestock rations and feeding of farm animals, including the various feed nutrients and their functions, digestion, and metabolism. (Spring)

**ANSC 223****Farm Animal Health (3-0) 3 Credits**

This course is designed to explain the role of animal scientists, veterinarians and farm managers in the control and prevention of farm animal diseases and parasites. It also provides an understanding of different types of diseases, their causes, identification, diagnosis and treatment of sick animals. (Fall)

**ANSC 230****Agri Waste Management (3-0) 3 Credits**

This course covers principles of managing, handling, treating and applying agricultural and organic industrial and municipal waste materials from an engineering perspective. It also explores waste characterization, descriptions of systems and technology, land application principles, preparation of waste management plans, biochemical/biological processes, and potential impacts on the environment. (Fall)

**ANSC 232****Artificial Insemination and Reproduction (1-4) 3 Credits**

This course provides practical application of artificial insemination in cattle. This covers structure and function of the reproduction system of domestic animals, semen handling, processing and preservation. (Prerequisite: ANSC 114 or permission of instructor) (Fall)

**ANSC 233****Horse Science (3-0) 3 Credits**

This course is designed to introduce the horse industry and to study fundamental problems and essential concepts of horse production, brood mare management, selection and judging of horses. (Spring)

**ANSC 243****Dairy Facilities and Equipment (2-2) 3 Credits**

This course covers the necessary planning, operating and maintenance of dairy facilities including the basic operating and maintenance principles of modern milking equipment, feed handling equipment and waste management equipment. Design and use of dairy housing also included. (Prerequisite: ANSC 114 or ANSC 113 or ANSC 123) (Spring, odd years)

4/24/2012

### **ANSC 263**

#### **Swine Production (2-2) 3 Credits**

This course covers the breeding, feeding, management and marketing of commercial pork production in a confinement setting. (Prerequisite: ANSC 114 or ANSC 113 or ANSC 123) (Spring, even years)

### **HORT 101**

#### **General Horticulture (3-0) 3 Credits**

This course surveys the general field of horticulture with emphasis on the growth and fruiting habits of horticulture plants. Principles and practices of propagation, fertilization, pest control, pruning and landscaping, turf planting, care and culture of fruit, vegetables, and ornamental crops are included. (Fall)

### **HORT 103**

#### **Floriculture (2-2) 3 Credits**

This course covers production and management of greenhouse floriculture crops and herbaceous landscape plants with principles and practices of floriculture design and marketing. Basics guidelines and principles of floral design are discussed including; balance, composition, harmony, focal point, proportion, line, rhythm, texture, form, space, and color. (Spring)

### **HORT 113**

#### **Greenhouse Management (1-4) 3 Credits**

This course focuses on factors involved in site selection, construction and management of greenhouses for the production of horticulture crops. (Fall)

### **HORT 204**

#### **Nursery Management/Landscape and Design (3-2) 4 Credits**

General principles and practices involved in the commercial production, management and marketing of landscaped plants and the fundamental principles of landscape design with practical exercises in planning and preparing master planting plans and cost estimates for the home grounds. Field trips will be required. (Spring)

### **POSC 103**

#### **Poultry Production & Processing I (2-2) 3 Credits**

This course introduces poultry management factors to be considered involving young birds and hatchery management. (Upon Request)

### **POSC 113**

#### **Poultry Production & Processing II (2-2) 3 Credits**

This course gives an introduction to poultry management factors involving mature birds. (Upon Request)

### **POSC 203**

#### **Supervisory Skills Development (3-0) 3 Credits**

Traditional as well as non-traditional students preparing for a career in supervision or management will study

several management styles as well as keys in successful management strategies. (Upon Request)

### **POSC 206**

#### **Poultry Internship (0-0) (135 Contact Hours) 3 Credits**

This internship requires students to apply their training to a real life company who gives management trainee experience and hands-on problem solving opportunities. (Upon Request)

### **POSC 213**

#### **Poultry Products Tech (3-0) 3 Credits**

This course expands on the processing phase of the student's training to show how the further processing and production of poultry products impacts the industry. (Upon Request)

### **POSC 223**

#### **Poultry Nutrition (3-0) 3 Credits**

This course provides the student introductory training as to the nutritional requirements of poultry and hands-on experience in feed formulation and feed mill management. (Upon Request)

### **POSC 243**

#### **Diseases of Poultry (3-0) 3 Credits**

This course provides the student introductory training in recognition, diagnosis and treatment of major diseases affecting poultry. (Upon Request)

### **POSC 101**

#### **Poultry Judging & Selection I (0-2) 1 Credit**

This course is an introductory training of students to judge live chickens and turkeys, ready to cook chickens and turkeys, and interior and exterior quality of eggs. (Upon Request)

### **POSC 201**

#### **Poultry Judging & Selection II (0-2) 1 Credit**

This course expands the selection and judging process to compete with other schools in national contests. (Upon Request)

## **ALTERNATIVE ENERGY**

### **ENER 105**

#### **Introduction to Energy (3-0)**

**3 Credits**

Introduction to Energy presents key concepts that are applicable to energy systems and serves as an overview of solar conversion systems, with special attention to renewable resources. The course introduces energy resources and the technology needed to harvest them. The course also considers economics, energy production and modeling, and other factors needed to make informed decisions about energy systems impact, investment, sustainability and applicability.

### **ENER 132**

#### **Introduction to Wind (3-0)**

**3 Credits**

This course will emphasize the basic concepts and principles of wind energy technology. Topics include the evolution of wind technology, basic turbine, blade, and tower components, tower/turbine siting and installation, wind energy transference and turbine output, along with proper safety techniques used in the wind industry.

### **ENER 134**

#### **Wind Turbine Troubleshooting (3-0)**

**3 Credits**

This course will cover the basic strategies and techniques used to troubleshoot, maintain, and repair mechanical and/or electrical problems in small to medium sized wind turbine. (Prerequisites: ENER 132, CNS 101)

### **ENER 140**

#### **Introduction to Biofuels (3-0)**

**3 Credits**

Introduction to the fundamentals of biobased fuels. Emphasis is placed on proper handling and use guidelines, basic biology and chemistry of biofuels, production methods, and the social, environmental, and economic impacts of biofuels. Upon completion students should be able to demonstrate a general understanding of biofuels and their production.

### **ENER 150**

#### **Passive Solar Systems (3-0)**

**3 Credits**

This class provides an overview of passive solar space and domestic hot water heating systems. It provides a foundation in solar insulation theory, energy conservation, heat flow calculations, alternative architecture and design theory of passive solar systems. (Prerequisite: Placement scores must indicate proficiency level of Math 100 or higher or have completed Math 50.)

### **ENER 151**

#### **Passive Solar Lab (1-2) 2 Credits**

This class gives hands-on experience with construction, installation and evaluation of passive solar systems.

### **ENER 155**

#### **Applied Science Institute**

#### **1 Credit (1-1) 2 Credit (1-2) 3 Credit (2-2)**

This course presents alternative energy technology as applied to transportation. Technical and social issues are examined for electric and solar vehicles and alternative-fuel cars. The class includes hands-on experience with several types of alternatively powered vehicles. (This description represents a typical topic offering; course content varies by semester.)

## **30 Course Descriptions**

**ENER 156, 157, 158****Projects in Alternative Energy****1 Credit (1-1) 2 Credit (1-2) 3 Credit (2-2)**

This course examines wind and solar-electric conversion devices for production of mechanical power and electricity. Site evaluation, system design, utility interface and energy management are studied. The course includes installation, operation and evaluation of wind and photovoltaic conversion systems. Students participate in team-based activities as they complete class projects. (This description represents a typical topic offering; course content varies by semester.)

**ENER 232****Wind Turbine Internship (1-5)****3 Credits**

The internship provides students with a supervised field experience. Students will gain hands-on experience with energy specific technologies and interaction with professionals in the energy field. This opportunity increases students' occupational competency, industry awareness and professionalism. Students will spend approximately 80 hours in the field during the semester. This course includes taking the Ramsay Corporation Wind Turbine Technician Test and reporting the score to Crowder College. (Prerequisites: Permission of Instructor; ENER 132)

**ENER 242****Biodiesel Production (3-0) 3 Credits**

This course emphasizes proper handling and use guidelines, basic biology and chemistry of biodiesel, production methods, and the social, environmental, and economic impacts of biodiesel. Upon completion students should be able to demonstrate a general understanding of biodiesel production. (Prerequisites: ENER 140. (CHEM 101 or CHEM 111 as co-requisites)

**ENER 244****Bioethanol Fuel Production (3-0)****3 Credits**

This course addresses the fermentation and distillation of ethyl alcohol (ethanol) for fuel production. Upon completion, students should be able to demonstrate an understanding of ethanol production by biological means. (Prerequisites: ENER 140.) (BIOL 101 as co-requisite)

**ENER 246****Biogas Production (3-0) 3 Credits**

This course covers biogas production and its social, environmental, and economic impacts. Biogas production using anaerobic (oxygen free) digestion is a biological treatment process to reduce odor, produce energy and improve the storage and handling characteristics of biomass. Upon completion, students should be able to demonstrate an understanding of biogas production. (Prerequisites: ENER 140) (BIOL 101 as co-requisite)

**ENER 248****Biofuels System Technology (3-0)****3 Credits**

Students will utilize information to make decisions about biofuel production technology, biofuel plant equipment and operations, and biofuel marketing and business management. (Prerequisites: ENER 242, ENER 244, ENER 246)

**ENER 250****Solar Thermal Systems (3-0)****3 Credits**

This class examines the design, installation, operation and maintenance of active solar equipment. Course topics include servicing hot water systems, residential and industrial heating, concentrating collectors, tracking equipment, and solar air conditioning. System design, sizing, economics, installation, operation and maintenance are among the areas examined in detail. (Prerequisite: Placement scores must indicate proficiency level of Math 100 or higher or have completed Math 50.)

**ENER 251****Solar Thermal Systems & Lab (1-2)****2 Credits**

This laboratory accompanies Active Solar Systems as a "hands-on" application of solar principles to practical projects. The class provides experience in the construction and installation of solar heating systems suitable for homes or small businesses. A co-requisite of ENER 250 is required for this class.

**ENER 256, 257, 258****Projects in Alternative Energy****1 Credit(1-1) 2 Credit(1-2) 3 Credit(2-2)**

This class examines energy storage strategies as applicable to small-scale alternative energy systems, especially in transportation applications. Storage systems include conventional and advanced batteries, hydrogen and fuel cells, and flywheels. The laboratory component of the class includes applications in electric vehicle use. Students develop and direct team based activities such as construction of and competing with solar and electric vehicles. (This description represents a typical topic offering; course content varies by semester.)

**ENER 260****Solar Electric Energy (3-0) 3 Credits**

Solar Electric Energy presents the key components of photovoltaic (PV) conversion systems to produce electricity from sunlight. Solar module types and properties, balance of system components, stand-alone and utility interface, energy management, and economics for a variety of PV applications are studied. The course includes details of installation, operation, and evaluation of photovoltaic systems. Students will participate in a team-based design project. The course includes preparation for the NABCEP (North American Board of Certified Energy

Practitioners) PV exam. (Prerequisite: ENER 105; Placement scores must indicate proficiency level of Math 100 or higher or have completed Match 50.)

**ENER 261****Solar Electric Energy Lab (1-2)****2 Credits**

Solar Electric Energy Lab supplements ENER 260 to provide hands-on experience with the key components of photovoltaic (PV) conversion systems to produce electricity from sunlight. The course includes details of installation, operation, and monitoring of PV systems. Students will participate in a team-based design and installation project. The course includes preparation for the NABCEP (North American Board of Certified Energy Practitioners) PV exam. (Co-requisite: ENER 260)

## ART & DESIGN

**ART 101****Art Appreciation (3-0) 3 Credits**

This course is a survey of major concepts in the visual arts and their relation to the societies that produced them. Art Appreciation is an introduction to the history of art, contemporary art, art theory, artworks, media, and creative processes. The student will develop an increased appreciation for the visual arts, the usage of media as a means of communication, and the parallel relation to specific styles, periods and cultures. This course partially fulfills Humanities general education requirements. (Required core for Art & Design/Graphic Design majors.) (Fall-Spring-Summer)

**ART 103****Introduction to 2-D Design (2-4)****3 Credits**

This comprehensive visual arts foundation course introduces 2-D design theory. The studio and lecture presents the elements of composition, principles of organization and color theory. Contemporary and historic models of expression are explored with an emphasis on creativity. (Required core for Art & Design/Graphic Design majors) (Fall-Spring)

**ART 104****Introduction to 3-D Design (2-4)****3 Credits**

This comprehensive visual arts foundation course introduces three-dimensional design theory. The studio and lecture course presents the elements of art and principles of design as applicable to three-dimensional forms. The aesthetics of contemporary and historic models of expression are explored with an emphasis on creativity. (Required core course for Art & Design/Graphic Design majors.) (Fall-Spring)

4/24/2012

### **ART 105, 205**

#### **Topics in Art (1-3)**

**3 Credits**

Variable content, appropriate to student needs, is included in this elective course. Lectures and/or studio projects in the fields of art history, computer art, design, drawing, fibers, graphic design, ceramics, sculpture, painting, and current art subjects may be used. (This course may not be used to fulfill a major in art requirement. Consult the registration schedule for specific topics when class is offered.) (Fall-Spring)

### **ART 106**

#### **Drawing I (2-4)**

**3 Credits**

Drawing I is a beginning level, fundamental art department course investigating a variety of media, techniques and subjects. The course explores perceptual and descriptive possibilities with consideration to drawing as a developmental process as well as an end in itself. (Required core for Art & Design/Graphic Design majors) (Fall-Spring)

### **ART 107**

#### **Painting I (2-4)**

**3 Credits**

Painting I highlights composition and visual concepts through historical and contemporary applications. Visual elements and design principles are investigated in directed studies, which include the still life, landscape, portrait, abstract, and non-objective concepts. Drawing and design skills are emphasized. (Required core for Art & Design majors.) (Fall-Spring)

### **ART 110**

#### **Ceramics I (2-4)**

**3 Credits**

This course introduces Ceramics through hand-built and wheel-thrown methods of construction. Clay and glaze preparation, construction techniques, and use of the potter's wheel are emphasized. The historic and theoretic applications of clay design and ceramics as a fine art medium are explored through sculptural and functional applications. (Required core for Art & Design majors.) (Fall-Spring)

### **ART 111**

#### **Sculpture I (2-4)**

**3 Credits**

Sculpture I introduces the fundamental development of three-dimensional design forms. Sculptural and environmental relationships are explored. Expressive concepts are encouraged with various media and techniques. (Required core for Art & Design majors.) (Fall)

### **ART 206**

#### **Drawing II (2-4)**

**3 Credits**

Drawing II is an intermediate level fundamental art and design course investigating a variety of media, techniques and subjects, exploring perceptual and descriptive possibilities with consideration of drawing as a developmental process as well as an end in itself. (Prerequisite: ART 106 or permission of the instructor) (Fall-Spring)

### **ART 207**

#### **Painting II (2-4)**

**3 Credits**

Painting is continued with more advanced theories. Design problems include greater visual and conceptual complexity. Individual styles, personal drawing and painting techniques are emphasized in directed studies. Historical and contemporary aesthetics are explored through lecture, discussion and application. (Prerequisite: ART 107 or permission of the instructor) (Fall-Spring)

### **ART 210**

#### **Ceramics II (2-4)**

**3 Credits**

A continuation of Ceramics I, this course is offered to students who wish to continue their studies in ceramics and fine art. An advanced exploration of materials and processes associated with clay, glaze, and firing operations are emphasized. Students will develop their own concepts through advanced studies in aesthetic, historical, functional, and sculptural ceramic applications. (Prerequisite: ART 110 or permission of the instructor) (Fall-Spring)

### **ART 211**

#### **Sculpture II (2-4)**

**3 Credits**

A continuation of sculptural form features more advanced three-dimensional design theories. Aesthetic mass and space relationships utilize a wide range of materials and techniques. (Prerequisite: ART 111 or permission of instructor) (Fall)

### **ART 215**

#### **Graphic Design I (2-4)**

**3 Credits**

Graphic Design I is an introductory course with an emphasis in computer graphics and desktop publishing. Students will utilize current graphic design software to create electronic illustrations. Graphic Design I focuses on desktop publishing, page layout, type and image applications. (Required core for Graphic Design majors) (Fall-Spring)

### **ART 216**

#### **Graphic Design II (2-4)**

**3 Credits**

Graphic Design II is an introductory computer graphics course with an emphasis in digital image/photo editing and web design. Students will utilize current graphic design software to create, alter, manage, and store digital images and creative illustrations. Graphic Design II includes the design/production and layout skills necessary to generate and maintain a web site. (Required core for Graphic Design majors) (Fall-Spring)

## **AUTOMOTIVE TECHNOLOGY**

### **AUTO 114**

#### **Auto Fuel Systems (2-4)**

**4 Credits**

A course designed for the automotive student or practicing automotive technician. Areas of study will include engine air/fuel requirements, tanks and

lines, evaporative controls, fuel pumps and filters, air cleaners, carburetion, electronic engine management and electronic fuel injection systems. Emphasis is given to emission control and electronic engine management systems. Practice is provided with live service and repair in the automotive laboratory. (Fall)

### **AUTO 115**

#### **Engine Repair (2-6)**

**5 Credits**

Engine Repair is designed to teach the student accepted methods of service and repair of the engine and related systems: engine overhaul, cooling, lubrication, fuel, ignition and exhaust systems. It includes instruction in tool selection, usage, maintenance, and shop safety. Practice is provided with live service and repair in the engine repair laboratory. (Fall)

### **AUTO 124**

#### **Automotive Brake Systems (2-4)**

**4 Credits**

A course designed for the automotive student or the practicing automotive technician. This course is a study of the principles involved in the braking systems of the modern automobile. Instruction is given in the skills needed to diagnose and repair braking systems. Special emphasis is given to hydraulic theory, computerized anti-lock systems and the use and application of modern test equipment in the diagnosis and repair of these systems. (Spring)

### **AUTO 125**

#### **Automotive Electrical Systems (2-6)**

**5 Credits**

This is a concentrated course in automotive electrical systems. Included is a review of basic electrical principles. Systems studied include charging, starting, ignition, lighting and fuel. Emphasis is given to electronic ignition and electronic fuel injection. Practice is provided with live service and repair in the automotive laboratory. (Spring)

### **AUTO 197, 198, 199, 297, 298, 299**

#### **Topics in Automotive Technology (0-8 to 3-0)**

**1-3 credits**

This is a variable content course with areas of study that reflect current needs of individual students in the area of Automotive Technology. Topics are identified in the course description. (Prerequisite: Permission of instructor)

### **AUTO 214**

#### **Automotive Air Conditioning (2-4)**

**4 Credits**

A course designed for the automotive technology student or the practicing automotive technician. A general introduction to the principles of automotive heating and air conditioning systems. The application of major components and control systems to automobiles is taught. Practical servicing, overhaul and replacement of units are emphasized, as are the recent changes in refrigerant and refrigerant handling. (Fall)

## **32 Course Descriptions**



**AUTO 215****Automotive Emission Control Systems (2-6) 5 Credits**

A course designed for the automotive technology student or the practicing automotive technician. The course is designed to give the student a working knowledge of, and practical experience in, the diagnosis and repair of automotive emission control systems. Emphasis is given to the electronic control systems found on later model vehicles. Practical experience is provided with live service and repair in the automotive laboratory. (Fall)

**AUTO 223****Automotive Power Train Systems (2-2) 3 Credits**

A course designed for the automotive technology student or the practicing automotive technician. The theory of operation, design construction and malfunction diagnosis of power transmitting units: clutches, standard and automatic transmissions, drivelines, differentials and rear axles. (Spring)

**AUTO 224****Computerized Engine Control (2-4) 4 Credits**

A course designed for the automotive technology student or the practicing automotive technician. A study in the principles of computerized engine control, the course will help the student/technician to grasp the operation, diagnosis and repair of these complicated systems. The use and application of modern test equipment are taught in relation to their use in the diagnosis and repair of these systems. (Spring)

**AUTO 225****Automotive Suspension and Steering (2-6) 5 Credits**

A course designed for the automotive technology student or the practicing automotive technician. This class is a study of the principles involved in the steering and suspension mechanisms of the modern automobile. Instruction is given in the skills needed to diagnose and repair steering and suspension components, replace steering and suspension system components and alignment of the wheels. The application of modern equipment is taught in relation to its use in the repair of these systems. (Spring)

**AUTO 240****Auto Tech Internship (0-3 to 0-13) 1-5 Credits**

This phase of the student's training includes work experience in an automotive business with weekly discussions of various on-the-job problems. (One credit per forty work hours) (Upon request)

**AUTO 241, 251****Problems in Automotive Technology (0-2) 1 Credit**

This class provides an opportunity for students to participate in independent

study and research in their field of special interest within automotive technology. (Prerequisite: permission of instructor) (One credit may be earned in each of two semesters.)

## COLLISION REPAIR

**CLRP 102****Collision Repair I (2-2) 3 Credits**

This course serves as an introduction to collision repair and incorporates selected topics from each of the three broad areas of non-structural repair, structural repair, and painting/refinishing. Students become familiar with safe practices in the shop as well as the various tools and equipment used in the trade including lifting, measuring, cleaning, and finishing devices. Steel straightening, damage analysis, and the preparation of customer estimates are also covered. Classes are built around learning modules licensed from I-CAR (Inter-Industry Conference on Auto Collision Repair) which include both classroom and hands-on shop exercises with competencies cross-indexed to ASE/NATEF (Automotive Service Excellence/National Automotive Technicians Education Foundation).

**CLRP 104****Collision Repair II (2-2) 3 Credits**

This course builds on the introductory material provided in CLRP 102 by extending damage analysis/repair coverage to frontal impact and interior damage, exterior trim/hardware repairs, use of plastic adhesives, and advanced measurement systems. Classes are built around learning modules licensed from I-CAR (Inter-Industry Conference on Auto Collision Repair) which include both classroom and hands-on shop exercises with competencies cross-indexed to ASE/NATEF (Automotive Service Excellence/National Automotive Technicians Education Foundation).

**CLRP 202****Collision Repair II (2-2) 3 Credits**

This course moves into the repair of bolted-on components and other areas requiring the use of gas-metal arc welding (GMAW). Additional time is also devoted to the advanced use of body fillers and repairs to both fixed and moveable glass components. Classes are built around learning modules licensed from I-CAR (Inter-Industry Conference on Auto Collision Repair) which include both classroom and hands-on shop exercises with competencies cross-indexed to ASE/NATEF (Automotive Service Excellence/National Automotive Technicians Education Foundation).

**CLRP 204****Collision Repair II (2-2) 3 Credits**

This course covers aligning/repairing the vehicle frame, working with aluminum body parts, and the final steps in the

painting/finishing process. Finding and repairing wind noise and water leaks is also addressed. Classes are built around learning modules licensed from I-CAR (Inter-Industry Conference on Auto Collision Repair) which include both classroom and hands-on shop exercises with competencies cross-indexed to ASE/NATEF (Automotive Service Excellence/National Automotive Technicians Education Foundation).

## BIOLOGY

**BIOL 101****General Biology (4-2) 5 Credits**

General Biology is an introduction to the study of biology and covers principles of life science from the chemical basis of life to the interactions between living organisms and their environment. The unifying biological principles of cell structure and function, genetics, development, metabolism, reproduction, and ecology are addressed. This course fulfills the life science general education requirement and is required for biology majors. A practical laboratory component emphasizes scientific investigations and supports lecture material. (Fall-Spring-Summer)

**BIOL 105****Environmental Science (4-2) 5 Credits**

This course presents basic principles of environmental science, including an introduction to the biological, chemical and geological factors guiding and impacting the environment as a whole. The environment will be viewed holistically and various impacts from human activities will be addressed. Current environmental issues will be discussed and examined.

**BIOL 110****General Zoology (3-4) 5 Credits**

General Zoology introduces Kingdom Animalia, surveying the diversity of the kingdom with an emphasis on the classification and ecology of major animal groups. Animal-like Protists are also discussed. Topics include evolution, natural and sexual selection, symbiotic relationships, and environmental issues relating to members of the animal kingdom. General Zoology is a requirement for the biology degree. (Prerequisite: BIOL 101) (Fall)

**BIOL 120****General Botany (3-4) 5 Credits**

General Botany is an introduction to the discipline of botany and includes the study of plants, algae, fungi, and bacteria. Topics covered include principles of cell biology, fundamentals of metabolism, basic plant anatomy and physiology, plant taxonomy, a systematic survey of the plant kingdom, and ecology. An extensive laboratory section supports and extends the lecture material. General Botany is a requirement for the biology degree.

4/24/2012

(Prerequisite: BIOL 101) (Spring, odd numbered years)

### **BIOL 152**

#### **Human Anatomy & Physiology I (4-2) 5 Credits**

Human Anatomy and Physiology I is the first course in a two-course sequence, covering the unifying principles of biochemistry, cell structure and function, genetics, development, and metabolism, as well as the structure and function of various organ systems of the human body. A practical laboratory component emphasizes inter-relationships between systems and how the entire body functions as a unit. This course is required for students entering health-related professions but is not recommended for science majors. This course fulfills the life science general education requirements for some majors. (Fall-Spring-Summer)

### **BIOL 220**

#### **General Microbiology (3-4) 5 Credits**

This course addresses topics ranging from the biochemistry and molecular biology of viruses and bacteria to the epidemiology of human disease. General Microbiology presents a wide-ranging examination of the microbial world, with emphasis on the relationship between microorganisms and human health and disease. This course covers principles of microbiology including basic biochemistry, cell structure and metabolism, the cultivation and control of microorganisms, a survey of the microbial world, epidemiology, and host defense. General Microbiology is a requirement for biology, nursing, and pre-professional degrees. (Prerequisite BIOL 101, BIOL110, BIOL 120, or BIOL 152) (Fall-Spring-Summer)

### **BIOL 252**

#### **Human Anatomy and Physiology II (3-4) 5 credits**

Human Anatomy and Physiology II is the second course in a two-course sequence, covering the structure and function of various organs systems of the human body not covered in the Human Anatomy and Physiology I. These include the nervous, cardiovascular, lymphatic, respiratory, endocrine, digestive, urinary, and reproductive systems. A practical laboratory component emphasizes inter-relationships between systems and how the entire body functions as a unit. This course is required for students entering health-related professions but is not recommended for science majors. (Prerequisite BIOL 152) (Fall-Spring)

### **BIOL 260, 261, 262, 263**

#### **Problems in Life and Health Sciences (1-0) 1 Credit**

This course gives interested students an opportunity to work on a special project in Biology, typically beginning research. (Prerequisite: BIOL 220 or Permission of the instructor) (Upon request)

## **BUSINESS**

### **ACCT 101**

#### **Practical Accounting (3-0) 3 Credits**

This course is designed for students with no prior accounting course work or experience. Practical Accounting counts toward graduation in some disciplines and serves as a solid introduction to other accounting principles courses. Counts as three-hour elective in Business Administration. (Fall-Spring)

### **ACCT 160**

#### **Payroll Accounting (3-0) 3 Credits**

This course introduces the subject of payroll by presenting the federal rules and regulations governing employment, compensation, and payroll taxes using a computerized practice set. It takes the student step-by-step through the entire payroll process—from timekeeping, computation of gross earnings, determining federal income tax and other payroll tax withholdings: to preparing and distributing the payroll: to the vital step of recording or accounting for wages, tax liabilities, and payments or deposits. (Fall)

### **ACCT 165**

#### **QuickBooks (2-2) 3 Credits**

This course includes computerized double-entry accounting systems and concepts for service and mercantile business enterprises using current accounting software. Journals, ledgers and basic financial statements are covered. (Prerequisite: OA 100 or higher) (Spring)

### **ACCT 201**

#### **Principles of Accounting I (3-0)**

**3 Credits**

This course includes double-entry accounting systems and concepts for service and mercantile business enterprises. Journals, ledgers and basic financial statements are covered. (OA 100 or 1 year of High School accounting with a "C" or higher is strongly recommended, but not required) (Fall-Spring)

### **ACCT 202**

#### **Principles of Accounting II (3-0)**

**3 Credits**

This course is designed to provide an understanding of accounting information and its use for business decision making. The emphasis is on where accounting data is obtained, what kind of information is needed, and how it is used in the management process. (Prerequisites: ACCT 201) (Fall-Spring)

### **ACCT 216**

#### **Financial Analysis and Budgeting (3-0) 3 Credits**

The course covers the methods and procedures employed in Managerial Accounting with emphasis on interpretation of accounting data (i.e. Financial Statements) for planning, controlling,

decision making and budgeting. (Prerequisite: ACCT 201) (Spring)

### **ACCT 245**

#### **Tax Accounting (3-0) 3 Credits**

This course acquaints students with the economic and social policy implications of the tax systems by which governments raise revenues. In addition, it familiarizes students with federal income tax as it applies to the individual. Students will learn how to prepare individual federal income tax returns. (Fall)

### **ACCT 250**

#### **Certified Bookkeeper Review (3-0) 3 Credits**

This is a capstone course for the accounting program and will prepare students for the Certified Bookkeeper Exam and leads to a national certification in bookkeeping through the American Institute of Professional Bookkeepers (AIPB). This certification is a practical way to demonstrate a high level of skill and experience to advance an accounting career. If you choose to be a candidate for the Certified Bookkeeper designation, you must pass the exam which consists of two tests offered at a third-party testing center plus two workbook exams offered onsite. Taking the Certified Bookkeeper national exam is optional and is not a requirement to pass this course. (Prerequisites: ACCT 202 or permission of instructor) (Spring)

### **ACCT 290**

#### **Accounting Clerk Internship (1-2)**

### **BSAD 103**

#### **Professional Development (2-0)**

**2 Credits**

This course is centered around the technique and personal qualities students need to find and keep the best possible job. We will also address common employer concerns and provide basic skills for success on the job. Course work centers primarily in the business fields. (Sophomore level) (Fall-Spring)

### **BSAD 104**

#### **Introduction to Computers (1-0)**

**1 Credit**

This class familiarizes students with the basic techniques involved in the operation of a computer. Students will learn basic computer components and file management functions. Installing, downloading, and updating software, and utilizing the internet and email will also be covered in this course. Students in any academic or career-vocation major can take the class.

### **BSAD 108**

#### **Personal Finance (3-0) 3 Credits**

Consumer finance topics are designed to provide students with guidance in handling such everyday problems as taxes, insurance, buying a home or automobile, borrowing, saving, social security, budgeting and estate planning. (Fall/Spring)

## **34 Course Descriptions**

**BSAD 110, 111, 210, 211****Leadership Development and Service Learning (1-0) 1 Credit**

This course provides leadership experience through participation in a student business organization. Students elect to participate in activities such as the following: individual or group research projects, panel discussion, and promotional projects. (May be taken each of four semesters.) (Fall-Spring)

**BSAD 121****Business Mathematics (3-0)****3 Credits**

This course teaches the application of business math used in accounting, finance, management, consumer economics, and retailing. Fundamental concepts addressed are interest, bank discount, payrolls, and markup. Also, the students will learn the touch system and principles of the electronic calculator. (Prerequisites: Placement scores must indicate proficiency level of Math 100 or higher or completed MATH 50.) (Fall-Spring)

**BSAD 125****Computer Applications (2-2)****3 Credits**

Students are introduced to word processing, database and spreadsheet and presentation applications. Learning is enhanced through the use of current business software and hands-on experience with PC-compatible computers. Students must have access to the version of Microsoft Office being used at Crowder College. This includes Word, Excel, access and PowerPoint. Software used in this course is best suited within a Windows environment. (Prerequisite: OA 105 or one year of high school keyboarding. (Fall-Spring)

**BSAD 130****Business Communications (3-0)****3 Credits**

Effective communication techniques as applied in business correspondence and reports are taught in this course. (Prerequisite: ENGL 100, or ENGL 101) (Fall-Spring)

**BSAD 150****Introduction to Business (3-0)****3 Credits**

This course surveys American business enterprises. Emphasis is on the characteristics, functions and problems of modern business. (Fall-Spring)

**BSAD 215****Spreadsheets (2-1) 2 Credits**

This course allows students to refine their skills in spreadsheet applications. Microsoft Excel will be used to teach advanced concepts in this software package. The course will include applying concepts to real life situations. (Prerequisites: BSAD 125) (Fall -Spring)

**BSAD 216****Database Management (2-1) 2 Credits**

This course allows students to refine their skills in database applications. Microsoft Access will be used to teach advanced concepts in this software package. The course will include all concepts of using and creating database tables, reports, forms, and queries. (Prerequisites: BSAD 125) (Fall - Spring)

**BSAD 217****Web Design (2-2) 3 Credits**

An introduction to web site design and development utilizing current web based software. The student will learn to create and deploy professional-grade web sites and will utilize current graphic design software to create, alter, manage, and store digital images. Recommended: basic working knowledge of Windows, word processing, browsers and file management.

**BSAD 230****Business Law (3-0) 3 Credits**

Business Law covers legal principles operative in common business situations, including the law of contracts, agency and business organization. (Fall)

**BSAD 236****Business Statistics (3-0) 3 Credits**

Business Statistics addresses the collection, analysis, interpretation, and presentation of data related to business. Topics include measures of central tendency and dispersion, frequency distribution, hypothesis testing, and sampling distribution. Spreadsheet software will be utilized in analysis of a variety of application problems. (Prerequisites: MATH 111) (Fall)

**BSAD 197, 198, 199, 297, 298, 299****Topics in Business Administration (1-3) 1-3 Credits**

A variable content course with topics that can change from semester to semester. Topics are identified by title in the class schedule. This course may be repeated if the topic is different to a total of six hours.

**BMGT 175****Management (3-0) 3 Credits**

This course is an introduction to the management of organizations of various sizes. The focus is on the four management functions: planning, organizing, leading, and controlling, and how to deal with the constant state of change in the workplace and in the competitive environment. (Prerequisite: BSAD 150) (Fall)

**BMGT 200****Marketing (3-0) 3 Credits**

This course is an introduction to the marketing process and organization of different types of businesses. The focus is on the identification of the marketing techniques and attitudes necessary to make a marketing plan successful. This

course provides a detailed examination of the strategies necessary for businesses to compete in today's environment. This class will also examine various marketing tactics including pricing, promotion, advertising, and salesmanship. (Fall)

**BMGT 223****Business Ethics (3-0) 3 Credits**

The focus of this course will be the ethical dilemmas faced by businesses. The methods used to evaluate ethical alternatives can be applied by the students to their individual situations as well as in preparation to direct companies in ethical decision-making. (Fall-Spring)

**BMGT 230****Advertising (3-0) 3 Credits**

This course will include a study of fundamental advertising and promotional principles. Analysis of advertising media, the preparation of advertising, and formulation of advertising campaigns will be used to enhance the course. (Spring)

**BMGT 285****Human Resource Management (3-0)****3 Credits**

This course emphasizes various uses of a firm's human resources. Personnel Management evaluates and compares personnel policies in recruiting, selecting, transferring, promoting, classifying, motivating and training. (Prerequisite: BSAD 150) (Spring)

**BMGT 290****Business Management Internship (1-2) 2 Credits**

Supervised work experience allows the student to apply skills in an actual business or office situation. Students will be required to gain experience in the area in which they are seeking a degree. Students will meet once a week in class and will work 40 hours during the semester in supervised work experience. This course should be taken during the student's final semester. (Fall-Spring)

**BMGT 295****Business Management Capstone (3-0) 3 Credits**

The course is a capstone course for Management majors. Emphasis is on bringing together student's knowledge of various business disciplines (Management, Marketing, Accounting, Financing, and Human Resource Management). The course re-instills these disciplines by bringing them together through a comprehensive textbook and business simulation. (Prerequisite: BMGT 175) (Spring)

**BMGT 197, 198, 199, 297, 298, 299****Topics in Business Management (1-3) 1-3 Credits**

Instruction will be provided as the need arises on topics in Business Management. Topics are identified by title in the class schedule. This course may be repeated if the topic is different.

## OFFICE ADMINISTRATION

### OA 102

#### **Filing Systems and Records Management (2-2) 3 Credits**

Students are introduced to the knowledge and skills needed in modern-day records management in various work settings. This comprehensive course studies basic filing rules, procedures, equipment, and manual and computerized management of records. (Spring only)

### OA 105

#### **Introduction to Keyboarding (2-2) 3 Credits**

Students gain basic experience on computers while developing the touch system involved in using the alphanumeric keyboard and 10-key pad. Basic word processing functions, letter, and manuscript formats are addressed. (Intended for all academic or vocational majors.) (Fall-Spring)

### OA 107

#### **College Keyboarding (2-2) 3 Credits**

Students continue to develop decision-making and production skills through preparation of documents representative of various businesses. (Fall-Spring)

### OA 108

#### **Introduction to Transcription (2-2) 3 Credits**

Methods of transcription, review and application of English skills, composition and proofreading of business letters, memos, and short reports strengthen knowledge of good communication and force thinking and judgment while transcribing correspondence. (Fall)

### OA 113

#### **Desktop Publishing (2-2) 3 Credits**

Students will produce on the computer high-impact, attention-getting documents such as letterhead, newsletters, and flyers. Graphic features and text features will be incorporated in various assignments. (Fall)

### OA 170, 171, 270, 271

#### **Topics in Business and Office Administration (1-3) 1-3 Credits**

Instruction will be provided as the need arises on topics in business and office administration. If needed, the computer facilities at the college or at the business will be utilized. The course may be repeated if the topic is different.

### OA 200

#### **Word Processing I (2-2) 3 Credits**

Students are introduced to word processing concepts, applications and skills. Speed and accuracy are improved through the production of business documents using IBM compatible computers. (Fall)

### OA 208

#### **Medical Transcription (2-2) 3 Credits**

This course utilizes transcribers and materials which relate to the medical area to develop skills in machine transcription. Correspondence, vocabulary and English skills are emphasized throughout the course. (Prerequisite: OA 108 and OA 215 with a "C" or better) (Spring)

### OA 210

#### **Office Administration Transcription (2-2) 3 Credits**

This course utilizes transcribers and materials which relate to a variety of specialty areas to develop skill in machine transcription. Correspondence, vocabulary and English skills are emphasized throughout the course. (Prerequisite: OA 108) (Spring)

### OA 211

#### **Secretarial Office Procedures (3-0) 3 Credits**

This course is designed to prepare the student to carry out the normal duties in a business office including a broad variety of business documents from memos and letters to comprehensive reports. Students practice a wide range of skills, such as: proofreading for errors, composing original documents, checking calculations, using organizational skills and decision making. (Spring)

### OA 212

#### **Medical Office Procedures (3-0) 3 Credits**

This course enhances the medical office specialist curriculum. Various reports and forms processed through medical records are examined as to format and content. An introduction to basic medical terminology is included to facilitate lab practice. A discussion of legal and ethical aspects stresses the parameters of responsibility in processing medical reports. (Spring)

### OA 215

#### **Medical Terminology (3-0) 3 Credits**

This course introduces and explains basic medical terminology. Roots, combining vowels, prefixes and suffixes are examined. Basic anatomy, spelling and abbreviations are included. (Fall/Spring)

### OA 231

#### **Office Administration Internship (1-2)**

### OA 233

#### **Medical Office Internship (1-2) 2 Credits**

Supervised work experience allows the student to apply skills and office procedures in an actual office situation. Students will be required to gain experience in the area in which they are seeking a degree. Students will meet once a week in class and will work 40 hours during the semester in supervised work experience. (Sophomore level) (Fall-Spring)

## CHEMISTRY

### CHEM 101

#### **Survey of Chemistry (4-2) 5 Credits**

This course for non-science majors satisfies part of the general education science requirement. The scope of the course is quite broad with emphasis on descriptive rather than theoretical chemistry. Topics illustrating the impact of chemistry on society and aspects of chemistry applicable to everyday living are taken from inorganic, organic and biochemistry. Credit may not be earned for both CHEM 101 and CHEM 104. (Fall-Spring-Summer)

### CHEM 104

#### **Chemistry for Health Sciences (4-2) 5 Credits**

This course for students planning to enter certain health fields satisfies part of the general education science requirement. The scope of the course is quite broad with emphasis on descriptive rather than theoretical chemistry. Topics are taken from inorganic, organic and biochemistry with emphasis on those concepts that have application in human health. Credit may not be earned for both Chemistry 101 and 104. (Fall-Spring)

### CHEM 111

#### **General Chemistry I (4-2) 5 Credits**

This class emphasizes the fundamental principles of chemistry. It includes a study of atomic and molecular structure, chemical bonding, stoichiometry, gases, liquids, solids, changes of state, solutions, colloids, chemical equilibria and acid-base chemistry. General Chemistry I is required of all science and engineering majors. (Co-requisite: MATH 111 or 150; high school chemistry or its equivalent is recommended) (Fall)

### CHEM 112

#### **General Chemistry II (3-4) 5 Credits**

A continuation of Chemistry 111, this course includes a study of oxidation reduction reactions, electrochemistry, thermodynamics, kinetics, nuclear chemistry, and a survey of inorganic chemistry. The laboratory includes qualitative analysis. (Prerequisite: CHEM 111) (Spring)

### CHEM 201

#### **Quantitative Analysis (0-4) 5 Credits**

A beginning course in Analytical Chemistry, this course includes discussions and laboratory work in gravimetric, volumetric, spectrophotometric, electrochemical and chromatographic methods of analysis. This class is taught on a self-directed learning (SDL) basis. (Prerequisite: CHEM 112) (Upon request)

### CHEM 271, 272, 273

#### **Topics in Chemistry 1-3 Credits**

A variable content course with areas of study that reflect current issues. Topics are

identified in the course schedule and prerequisites are spelled out in the syllabus.

## COLLEGE SKILLS

### **COLL 101**

#### **College Orientation (1-0) 1 credit**

Successful completion of the College Orientation course and its Service Seed component are required for all degree or certificate seeking students within their first semester of enrollment at Crowder College. Transfer students who have successfully completed college orientation elsewhere or have a cumulative grade point average of 2.0 on a minimum of 12 credits are exempt from this course. The course is designed to acclimate new students to the Crowder College environment, provide them with information they will need to function as a Crowder College student, and encourage further evaluation of their character.

### **COLL 103**

#### **Practical Communication (2-0)**

**2 Credits**

Upon successful completion of this integrated communication class, students will demonstrate mastery of entry-level, workplace knowledge and skills in the areas of reading, writing, listening, and speaking. Credit earned in this course only applies toward the completion of specified certificate programs and cannot be used as an elective in an AA or AS degree program.

## COMPUTER PROGRAMMING

*Students are expected to schedule additional time outside of class in the computer lab to complete assignments.*

### **COMP 111**

#### **Introduction to Computer Science (3-2) 4 Credits**

Instruction is given on the techniques of structured and object-oriented programming. The class assumes no prior programming experience. It is required for Computer Science and Information Science majors and is recommended for students in any academic or career vocational major who need to have skills on how a computer can be programmed as a problem solving tool. The course topics will include: elementary syntax, functions, classes, objects, control structures, user defined data types, arrays and data structures (Prerequisite: MATH 111). (Co-requisite: Math 111 or Math 150)

### **COMP 140**

#### **RPG Programming (2-2) 3 Credits**

Introduces the programming language RPG/400 that is designed for quick and efficient production of business reports. Includes language syntax and practice in

preparing, compiling and executing applications of increasing complexity. (Prerequisite: COMP 111 and MATH 111) (Spring, odd years)

### **COMP 200**

#### **COBOL (2-2)**

**3 Credits**

Computer programming concepts in the COBOL language, a widely used business oriented language, are examined. Instructional topics include: programming methodologies, program divisions, control breaks and file maintenance. (Prerequisite: COMP 111; MATH 111) (Spring, even years)

### **COMP 271, 272, 273**

#### **Topics in Computer Science**

**1-3 Credits**

A variable content course with areas of study that reflect current issues. Topics are identified in the course schedule and prerequisites are spelled out in the syllabus. (Prerequisite: Permission of instructor)

## COMPUTER AND NETWORK SUPPORT

### **CNS 101**

#### **Introduction to Electronics (2-2)**

**3 Credits**

This course introduces the fundamental laws of scientific atomic structure, electricity and electrical safety. It builds upon those fundamentals by the study of Ohm's Law, current, voltage, resistance, power sources, and DC (direct current) measuring instruments. An introduction to complete series, parallel, and series-parallel circuits, the laws, mathematical formulas, and methods used to analyze these circuits. A study of how AC (alternating current) voltages and currents are generated, introducing the science of magnetism, and the effect of AC on electronic components such as inductors and capacitors. AC testing procedures will be emphasized. (Co-requisites: CNS 111, CNS 115, MATH 40/60, COMM 80)

### **CNS 105, 106**

#### **Technical Career Development (1-0)**

**1 Credit**

These classes guide students through employability skills activities that are covered in seven levels of the series. The activities help meet the competencies outlined by the U.S. Secretary of Labor's Commission on Achieving Necessary Skills (SCANS). It includes a school-to-work curriculum and provides the tools to strengthen school-based learning work-based learning and connecting activities as outlined in the School to Work Opportunities Act. Lessons include self-assessments in communications skills, ethics, conflict resolution, government awareness, time management skills, career research and others. (Fall)

### **CNS 111**

#### **PC Basics I (2-2)**

**3 Credits**

This course covers the fundamentals of the internal PC hardware and peripheral devices (PC = "Personal Computer" = Intel-based X86 architecture), and also provides an introduction to operating system concepts. Through hands-on labs, desktop learning tools, and extensive Internet-based research, students develop critical thinking and complex problem-solving skills. (Co-requisites: CNS 101, CNS 115, MATH 40/60, COMM 80)

### **CNS 112**

#### **PC Basics II (2-2)**

**3 Credits**

This course addresses the software side of the PC by focusing on the operating system, basic networking concepts, and PC security. The course also provides an introduction to selected additional concepts including troubleshooting methods, "help desk" or "call center" procedures, and ethical considerations in computer technology. (Prerequisites: CNS 111 or Permission of Instructor; Co-requisites: MATH 50/70)

### **CNS 115**

#### **Cisco Networking I (2-2)**

**3 Credits**

This course is the first of four courses (CNS 115/116/217/218) leading to the Cisco Certified Network Associate (CCNA) certification and introduces the OSI Model, industry standards, network topologies, IP addressing, and subnet masks. The material will give the student the ability to construct cables, identify computer and network components, and construct a simple network. (Co-requisites: CNS 101, CNS 111, MATH 40/60, COMM 80)

### **CNS 116**

#### **Cisco Networking II (2-2)**

**3 Credits**

This course is designed to provide a solid foundation of skills in individual router configuration; configuring networks of routers; building and troubleshooting simple networks. (Prerequisite: CNS 115) (Fall-Spring)

### **CNS 125**

#### **Programming For CNS Technicians (2-2) 3 Credits**

This course provides basic computer programming skills for computer technology students who are not enrolled in a computer science-based program and whose math skills incorporate only introductory algebra. Emphasis will be placed on learning basic program structures, flow charting, and development of simple applications using an entry-level programming language. (Co-requisites: MATH 104 or Appropriate Placement by ACT/COMPASS testing)

### **CNS 217**

#### **Cisco Networking III (2-2)**

**3 Credits**

This course is designed to provide an in-depth foundation of knowledge and skills in: configuring switches and routers; configuring IGRP, access List, IPX on

4/24/2012

routers. (Prerequisite: CNS 116) (Fall-Spring)

### **CNS 218**

#### **Cisco Networking IV (2-2) 3 Credits**

This course is designed to prepare students to be Cisco network administrators. Provides advanced knowledge and skills in: Configuring switches and routers: configuring IGRP, access list, IPX on routers. Knowledge of WANS and CCNA exam-related learning. (Prerequisite: CNS 217) (Fall-Spring)

### **CNS 250**

#### **Linux Network Administration (2-2) 3 Credits**

This course covers the installation, configuration, and maintenance of a Linux-based operating system in a networked, multi-user environment. Primary focus will be on user/group management, file system utilization, system security, and utilization of various popular Linux server functionalities. (Co-Requisite: CNS 112)

### **CNS 260**

#### **Microsoft Network Administration (2-2) 3 Credits**

This course is designed to prepare students for the responsibilities of being a network administration technician using the Microsoft Windows Server family of server operating systems. It provides hands-on experience incorporating Microsoft's client/server-based products such as Active Directory (AD), Internet Information Services (ISS), and Distributed File System (DFS). (Co-requisites: CNS 112, CNS 116, or Permission of Instructor)

### **CNS 265**

#### **Microsoft Exchange Administration (2-2) 3 Credits**

This course covers the installation, configuration, and day-to-day administration of Microsoft Exchange Server, Microsoft's broad-based, database-oriented messaging service. This service provides both an efficient e-mail component as well as easily manageable/scalable interfaces to modern devices such as cellular telephones, personal digital assistants, and the like. Students will receive hands-on practice in all aspects of Microsoft Exchange administration. (Prerequisites: CNS 260 or Permission of Instructor)

### **CNS 270**

#### **Network Security (2-2) 3 Credits**

This course provides a broad view of the entire field of information security, background on many related elements, and enough detail to facilitate an understanding of the topic as a whole. This course will cover the terminology of the field, the history of the discipline, and the strategies for managing an information security program. (Prerequisites: CNS 112)

### **CNS 271, 272, 273**

#### **Topics in Computer and Network Support Technology (0-8 to 3-0) 1-3 Credits**

This is a variable content course with areas of study that reflect current needs of individual students in the area of Computer and Support Technology. Topics are identified in the course description. (Prerequisite: Permission of instructor)

### **CNS 275**

#### **Enterprise Administration (2-2) 3 Credits**

This course provides instruction in the design, setup, equipping, and maintenance of a network server center. Focus will be on the selection of the various types of network server computers, peripheral devices, and software necessary to provide the services required by both network administrators and users. (Prerequisites: CNS 260 or Permission of Instructor; Co-requisites: CNS 217)

### **CNS 277**

#### **Data Management (2-2) 3 Credits**

This course introduces the fundamental concepts necessary for designing, using, and implementing database systems and database applications. The student will be introduced to database management software, including Basic Structured Query Language (SQL). Through a combination of classroom lectures, hands-on labs, and desktop learning tools, students will develop both critical thinking and problem-solving skills. (Prerequisites: CNS 125; Co-Requisites: BSAD 125, MATH 104)

### **CNS 280**

#### **PC Repair Internship (0-7.5) 3 Credits**

This course provides direct hands-on experience in a structured environment under the direct supervision of experienced business/industry PC repair professionals employed by a hosting organization. The course requires that 120 clock-hours be spent at the hosting location(s) during the term of study. It is a requirement for those CNS-AAS students who started their programs during the summer term, 2010, or earlier. Students starting fall, 2010, through spring, 2012, must take CNS 282 (see below) instead. (Prerequisites: CNS 230)

### **CNS 282**

#### **PC Repair Internship (0-5) 2 Credits**

This course provides direct hands-on experience in a structured environment under the direct supervision of experienced business/industry PC repair professionals employed by a hosting organization. The course requires that 80 clock-hours be spent at the hosting location(s) during the term of study. It is a requirement for those CNS-AAS students who started their programs during the fall term, 2010, through spring, 2012. Students starting earlier must take CNS 280 (see above) instead. (Prerequisites: CNS 230)

### **CNS 285**

#### **Computer Network Support Internship (0-10) 4 Credits**

This course provides direct hands-on experience in a structured environment under the direct supervision of experienced business/industry professionals employed by a hosting organization. The course requires that 160 clock-hours be spent at the hosting location(s) during the term of study. (Prerequisites: CNS 260 and Sophomore Standing (i.e.-Completed 28 semester hours) or Permission of Instructor; Co-Requisites: CNS 218)

### **CNS 290**

#### **Network Administration Internship (0-10) 4 Credits**

This course provides direct hands-on experience in a structured environment under the direct supervision of experienced business/industry networking professionals employed by a hosting organization. The course requires that 160 clock-hours be spent at the hosting location(s) during the term of study. It is a requirement for those CNS-AAS students who started their programs during the summer term, 2010, or earlier. Students starting fall, 2010, through spring, 2012, must take CNS 292 (see below) instead. (Prerequisites: CNS 255, CNS 260)

### **CNS 292**

#### **Network Administration Internship (0-7.5) 3 Credits**

This course is designed to prepare students for the responsibilities of being a network administrator by working in a directed organizational environment. (Prerequisites: CNS 260, and CNS 218)

## **ENERGY EFFICIENT BUILDING TECHNOLOGY**

### **CONS 102**

**2 Credits**

#### **Introduction to Green Building (1-2)**

Provides an introductory survey of new and existing building technologies which enhance energy efficiency, livability, and sustainability of a structure. The course will incorporate materials from the NCCER (National Center for Construction Education and Research) Modules "Your Role in the Green Environment" and "Introduction to Weatherization". Particular emphasis will be placed on those technologies and best practices endorsed by the US DOE (U.S. Department of Energy), the USGBC (U.S. Green Building Council), and the LEED (Leadership in Energy and Environmental Design) Certification Program. Students will learn how weatherization goals can be met by reducing heating/cooling losses through improved insulation and the minimization of air infiltration.

**CONS 105****Introduction to Construction****Technology (2-2) 3 Credits**

This course is built around NCCER's (National Center for Construction Education and Research) introductory "Core" material and is a pre-requisite for obtaining NCCER registration. As such, it is designed to provide a broad range of introductory information and hands-on practice to beginning students in construction technology. Topics covered at the introductory level include safety, shop math, hand tools, power tools, blueprints, rigging, basic communication, and basic employment skills. (Co-requisite: MATH 40 or MATH 60 and COMM 80)

**CONS 111****Carpentry Fundamentals I (2-2)****3 Credits**

This course is the first part of NCCER: Carpentry Fundamentals-Level 1 and is designed to provide a broad range of information and hands-on practice to students in construction. Topics covered at this particular level include trade orientation, building materials, fasteners/adhesives, hand and power tools, reading plans/elevations, and floor systems. (Prerequisite: CONS 105)

**CONS 114****Carpentry Fundamentals II (2-2)****3 Credits**

This course is the second part of NCCER (National Center for Construction Education and Research) Level 1 Carpentry Fundamentals designed to provide a broad range of information and hands-on practice to students in the fundamentals of construction. Topics covered include introduction to concrete, reinforcing materials, windows and exterior doors, wall/ceiling framing, roof framing, and basic stair layout. (Prerequisite: CONS 111 or Permission of Instructor, Co-requisite: CONS 102 and MATH 50 or MATH 70 or Permission of Instructor)

**CONS 115****Carpentry Framing and Finishing I (2-2)****3 Credits**

This course is the first part of NCCER (National Center for Construction Education and Research) Level 2 Carpentry Fundamentals: Framing and Finishing designed to provide a broad range of information and hands-on practice to students in the fundamentals of construction. Topics covered include roofing applications, thermal/moisture protection, exterior finishing/siding, and cold-formed steel framing. (Prerequisite: CONS 105)

**CONS 117****Carpentry Framing and Finishing II (2-2)****3 Credits**

This course is the second part of NCCER (National Center for Construction Education and Research) Level 2 Carpentry Fundamentals: Framing and

Finishing and is designed to provide a broad range of information and hands-on practice to students in the fundamentals of construction. Topics covered include drywall installation/finishing, doors/door hardware, suspended ceilings, trim for windows, doors, floors and ceilings, and cabinet fabrication/installation. (Prerequisite: CONS 115 or Permission of Instructor, Co-requisite: MATH 50 or MATH 70 and ENGL 100)

**CONS 122****Masonry I (2-2)****3 Credits**

This course is the first part of NCCER's (National Center for Construction Education and Research) Level 1 Masonry curriculum. Topics covered in the course include introduction to masonry/masonry units, masonry tools/equipment, measurements, basic installation, drawings/specifications, and mortar. (Prerequisite: CONS 105)

**CONS 124****Masonry II (2-2)****3 Credits**

This course is the second part of NCCER's (National Center for Construction Education and Research) Level 1 Masonry curriculum. Topics covered in the course include masonry units and installation techniques. (Prerequisite: CONS 122, Co-requisites MATH 50 or MATH 70 and ENGL 100)

**CONS 132****Plumbing I (2-2)****3 Credits**

This course is the first part of NCCER's (National Center for Construction Education and Research) Level 1 Plumbing curriculum. Topics covered in this portion include an introduction to the plumbing profession, safety practices, plumbing tools/math/drawings, and working with plastic pipe and fittings. (Prerequisite: CONS 105 or AMT 111 or AMT 112 or Permission of Instructor)

**CONS 134****Plumbing II (2-2)****3 Credits**

This course is the second part of NCCER's (National Center for Construction Education and Research) Level 1 Plumbing curriculum. Topics covered in this portion include copper/cast-iron/carbon steel/stainless piping/fittings, fixtures/faucets, DWV (Drain, Waste, and Ventilation) systems, and water distribution systems. (Prerequisite: CONS 132, Co-requisite: MATH 50 or MATH 70 and ENGL 100)

**CONS 142****Electrical I (2-2)****3 Credits**

This course is the first part of NCCER's (National Center for Construction Education and Research) Level 1 Electrical curriculum. Topics covered in this portion include an introduction to the electrical trade, safety, basic circuits/theory, introduction to the NEC (National Electrical Code), device boxes and conduit bending/installation. (Prerequisite: CONS

105 or AMT 111 or AMT 112 or Permission of Instructor)

**CONS 144****Electrical II (2-2)****3 Credits**

This course is the second part of NCCER's (National Center for Construction Education and Research) Level 1 Electrical curriculum. Topics covered in this portion include raceways/fittings, conductors/cables, electrical drawings, residential services, and test equipment. (Prerequisite: CONS 142, Co-requisite: MATH 50 or MATH 70 and ENGL 100)

**CONS 155****Basic HVAC (2-2)****3 Credits**

This is an introductory course on basic Heating, Ventilation, and Air Conditioning (HVAC) concepts utilizing curriculum from the National Center for Construction Education and Research (NCCER-HVAC Level 1). Students will learn by coupling traditional classroom activities with practical hands-on laboratory experiences. Topics covered include basic electrical principles, fundamental HVAC concepts, working with various types of tubing/piping, and air-handling systems. (Prerequisite: CONS 105 or AMT 111 or Permission of Instructor, Co-requisite: AMT 102 and MATH 50 or MATH 70)

**CONS 161****Weatherization Technology (2-2)****3 Credits**

This course explains how to seal the envelope of a home to minimize air from entering and leaving the home, and how to add insulation to water pipes, forced-air ducts, water heaters, and other building components, thereby reducing heat loss and heat gain. These actions result in a more comfortable home that uses less energy for heating and cooling. Students are also provided with introductory overviews of wood/masonry construction methods and thermal/moisture protection practices. The course is based upon NCCER's (National Center for Construction Education and Research) "Weatherization Technician-Level 1" series. (Prerequisite: CONS 102 and CONS 105 or Permission of Instructor, Co-requisite: MATH 50 or MATH 70 and ENGL 100)

**CONS 173****Carpentry Forms I (2-2)****3 Credits**

This course is the first part of NCCER: Carpentry Forms-Level 3 and is designed to provide a broad range of information and hands-on practice to students in construction technology relative to concrete forms and placement. Topics covered include rigging practices/equipment, concrete properties/reinforcement, handling/placing concrete, and trenching/excavating. (Prerequisite: CONS 105)

4/24/2012

### **CONS 175**

#### **Carpentry Forms II (2-2) 3 Credits**

This course is part two of NCCER (National Center for Construction Education and Research) Level 3 Carpentry Fundamentals: Forms and is designed to provide a broad range of information and hands-on practice to students in construction technology relative to concrete forms and placement. Topics covered include foundations and slab-on-grade, vertical formwork, horizontal formwork, and tilt-up wall panels. (Prerequisite: CONS 173 or Permission of Instructor, Co-requisite: MATH 50 or MATH 70 and ENGL 100)

### **CONS 231**

#### **Site Layout I (2-2) 3 Credits**

This course covers NCCER's (National Center for Construction Education and Research) Level 1 Site Layout materials and is designed to provide extended information beyond the core classes and hands-on experience to students in the fundamentals of site layout. Topics covered include distance measurement and leveling, measurement conversion, and proper tool/equipment handling. (Co-prerequisite: CONS 114 and DRFT 105 and MATH 100 and ENGL 100)

### **CONS 235**

#### **Site Layout II (2-2) 3 Credits**

This course covers NCCER's (National Center for Construction Education and Research) Level 2 Site Layout materials and is designed to provide extended information beyond the core classes and hands-on experience to students in the fundamentals of site layout. Topics covered include advanced surveying math/operations, basic data collection/computer entry skills, concrete properties, and means/methods. (Prerequisites: CONS 231, Co-requisite: MATH 111)

### **CONS 243**

#### **Project Supervision (2-2) 3 Credits**

This course provides introductory material relevant to front-line supervision in construction technology and is built upon NCCER's (National Center for Construction Education and Research) Project Supervision module. Topics covered include orientation to the job, human relations, problem solving, safety, quality control, contract/construction documents, document control/estimating, planning/scheduling, and resource control/cost awareness. (Prerequisite: CONS 114)

### **CONS 244**

#### **Project Management I (2-2) 3 Credits**

This course utilizes NCCER's (National Center for Construction Education and Research) project management materials to expand front-line supervision concepts by incorporating topics relating to the broader scope of project management. Topics covered include introduction to

project management, safety, interpersonal skills, issues/resolutions, and construction documents/planning. (Prerequisite: CONS 243, Co-requisite: MATH 100)

### **CONS 246**

#### **Project Management II (2-2) 3 Credits**

This course utilizes NCCER's (National Center for Construction Education and Research) project management materials to expand front-line supervision concepts by incorporating topics relating to the broader scope of project management. Topics covered in this course include cost estimation/control, scheduling, resource/quality control, and continuous improvement. (Prerequisite: CONS 244, Co-requisite: MATH 111)

### **CONS 248**

#### **Sustainable Construction (0.5-1)**

##### **1 Credit**

This course instructs construction supervisors on sustainable construction management techniques, especially as they relate to the construction-phase LEED (Leadership in Energy and Environmental Design) points targeted for their projects. Key content includes coverage of project sustainability goals, green building materials/technologies, and green building methods/processes. The course is based upon NCCER's (National Center for Construction Education and Research) "Sustainable Construction Supervisor" materials. (Prerequisite: CONS 102 and CONS 105 or Permission of Instructor, Co-requisite: MATH 100 and ENGL 100)

### **CONS 264**

#### **Geothermal Heat Pump Systems (2-2)**

##### **3 Credits**

This course provides an overview for designers of geothermal or ground-source heat pump systems (GSHP) and addresses fundamental principles, physical/thermal constraints, design/configuration of ground loops/piping, determination of building heating/cooling requirements, integration of ground and building systems, typical installation procedures, and environmental/regulatory issues. Instruction will consist of lecture/lab sessions and, as much as practical, scheduled field trips to observe GSHP installations in progress. (Prerequisite: CONS 155 or Permission of Instructor, Co-requisite: MATH 100 and ENGL 100)

### **CONS 265**

#### **Alternative Energy Techniques (2-2)**

##### **3 Credits**

Provides an overview of the various alternative energy technologies currently available or on the verge of becoming economically viable. This course introduces students to the Power Industry in general and the overall concepts of alternative energy usage and economics. Topics covered in the course include Biomass and Biofuels, Nuclear Power, Solar Power, and Wind Power with special focus on those technologies (Wind and

Solar) most adaptable to energy efficient building applications. This course is based upon NCCER's (National Center for Construction Education and Research) materials for Alternative Energy. (Prerequisite: CONS 102 and CONS 105 or Permission of Instructor, Co-requisite: MATH 100 and ENGL 100)

### **CONS 266**

#### **Energy Usage Auditing I (2-2)**

##### **3 Credits**

This is the first of two courses based on NCCER's (National Center for Construction Education and Research) Building Auditor, Level 2, materials and provides background information on heating/cooling, chimneys/vents/flues, hydronic systems, and energy conservation equipment. This course prepares students to move into the second course in the series where procedures for performing a building energy audit are presented. (Prerequisite: CONS 155 and CONS 161 or Permission of Instructor, Co-requisite: MATH 100 and ENGL 100)

### **CONS 267**

#### **Energy Usage Auditing II (2-2)**

##### **3 Credits**

This is the second of two courses based on NCCER's (National Center for Construction Education and Research) Building Auditor, Level 2, materials and provides background information on indoor air quality and alternative heating/cooling systems. This course also provides detailed guidance for the performance of a complete building energy audit including interviewing, testing, and reporting. (Prerequisite: CONS 266, Co-requisite: MATH 111)

### **CONS 290**

#### **Construction Internship (0-10)**

##### **4 Credits**

Provides direct hands-on experience in a structured environment under the direct supervision of experienced tradesmen employed by the hosting organization. Students are required to provide regular reports of work tasks attempted/completed as well as the overall time spent at the host's work location. Hosts agree to provide a safe, supervised work environment with students addressing tasks directly related to energy efficient building and the specific option being pursued by the student: General Construction, Construction Management, or Alternative Technologies. At the end of the internship, hosts will complete and submit a written evaluation of the student's performance. This course requires that 160 clock-hours be spent at the hosting location(s) during the term of study. (Prerequisite: Sophomore standing (> 28 Hours) or Permission of Instructor)

## **40 Course Descriptions**



# DIESEL TECHNOLOGY

## AGDI 111

### **Shop and Shop Safety (1-0) 1 Credit**

An unsafe employee is a costly employee. This course is designed to promote safety attitudes in the work place. Study will include first aid, fire safety, use of lifts and power tools, as well as proper handling of hazardous materials.

## AGDI 153

### **Harvesting & Tillage (2-2) 3 Credits**

This course provides an overall look at modern agricultural machinery that relates to tillage, planting and harvesting. Machine operation, adjustment and repair are discussed in lecture and students learn the actual applications through troubleshooting and repair of various equipment. Hay and forage equipment are included in the section on harvesting. (Spring)

## DIES 124

### **Preventive Maintenance (2-4)**

**4 Credits**

Preventive Maintenance is the key to keeping today's high tech diesel equipment in the field and on the road. This course covers the procedures for a major inspection including the selection of filters, evaluation of lubricants, oil sampling, selection of fuels, inspection of tread wear patterns, and adjustment of the various components. (Fall)

## DIES 134

### **Diesel Hydraulics (2-3) 4 Credits**

This course studies hydraulics commonly used on industrial and agricultural machinery. Topics include basic principles, design, and construction of hydraulic pumps and motors. Cylinders, valves and other control devices are discussed. Troubleshooting and testing procedures complete the course. (Spring)

## DIES 144

### **Diesel Engines I (2-4) 4 Credits**

This course is designed to acquaint the student with diesel engines and the processes that are needed to properly overhaul an engine. Topics include disassembly, parts identification, measurement of parts, parts reusability, rebuilding of various sub-assemblies, and proper re-assembly of the engine. (Fall)

## DIES 164

### **Diesel Brake Systems (2-4) 4 Credits**

This course acquaints the student with the various brake and suspension systems found on today's heavy-duty trucks and equipment. Hydraulic and air brake systems are discussed along with componentry of each system. (Spring)

## DIES 184

### **Electrical/Electronics I (2-4) 4 Credits**

Theory, operation and testing of various electrical systems found on industrial and trucking equipment will be covered. Topics covered include: basic electricity, batteries, circuit types, starting motors, generators, alternators and regulators, lighting and auxiliary circuits. (Fall)

## DIES 204

### **Diesel Powertrains (2-4) 4 Credits**

To allow the engine to give its best performance, the powertrain must be able to direct the power where it is needed. This course covers the basic powertrains as they are used in industrial applications. Components such as clutches, mechanical transmissions, hydraulic assist transmissions, differentials, final drives and other drives are studied. Adjustments such as end play, backlash and preload are examined as well as the different fluids used for lubrication and fluid drive. (Fall)

## DIES 224

### **Diesel Steering and Suspension (2-4)**

**4 Credits**

This course will cover the basic theories and applications of steering and suspension systems used on today's heavy duty trucks. Steering component adjustment and replacement will be discussed along with the various types of suspension systems found on heavy duty trucks. The interaction of these components and how they affect truck alignment will complete the course. (Spring)

## DIES 234

### **Air Conditioning (2-4) 4 Credits**

This study of the theory and operation of air conditioning systems as they are used with industrial equipment examines basic system components, controls and air movement devices. Troubleshooting, testing and basic tool use such as pressure gauge sets and refrigerant recovery are also covered. (Fall)

## DIES 244

### **Diesel Internship (0-10) 4 Credits**

The student will receive on-the-job experience in a designated training site. This will allow the student to practice and utilize the skills and knowledge learned in the previous semesters. This work experience will be supervised by the instructor one period per week. (Prerequisite: Permission of Instructor) (Summer, Fall, Spring)

## DIES 284

### **Diesel Electrical/Electronics II (2-4)**

**4 Credits**

Theory, operation and testing of various electrical systems found on industrial and trucking equipment will be covered. Topics covered include the following: truck and trailer lighting systems, instrumentation and warning systems, electrical accessories, ignition systems, and computer control systems. (Spring)

## DIES 294

### **Diesel Engines II (2-4) 4 Credits**

A follow-up course to Diesel Engines I, this course has the student studying operational engines with various problems installed by the instructor. Students disassemble the engine, check for worn or damaged parts, correct these problems and bring the engine back to operational condition. Students are also required to explain the reasoning behind the replacement of parts. (Spring)

# DRAFTING AND DESIGN TECHNOLOGY

## DRFT 101

### **Introduction to Engineering Drawing and Print Reading (2-2) 3 Credits**

This course provides a foundation for all engineering and technical design courses. This study includes basics of freehand sketching and CAD Drafting, and print reading. This study also includes all principles using section, auxiliary and pictorial views to better describe the product. (Fall-Spring)

## DRFT 102

### **Descriptive Geometry (2-2) 3 Credits**

This course adds to the introduction of drafting fundamentals. The primary focus is on entry-level geometry construction techniques for board and AutoCAD Command usage, drawing commands, viewing commands and modifying commands. Topics include drawing layouts, 2-dimensional drawing, editing and viewing commands, drafting practices and standards, file management practices and practical uses of CAD drawings. (Fall)

## DRFT 103

### **Technical Drawing (2-2) 3 Credits**

This course is the second introduction to drafting class. The primary focus is on entry-level Board and Auto CAD Command usage, drawing commands, viewing commands and modifying commands. Topics include drawing the different types of fasteners, springs, cams, welding symbols, steel details and basic structural drawing. Editing and viewing commands, drafting practices and standards, file management practices and practical uses of CAD drawings. (Spring)

## DRFT 105

### **Architectural Drafting (2-2) 3 Credits**

This course is an introduction to residential construction and house design. Students are required to interview prospective clients, write a project description, and draw a set of architectural plans that include floor plans, electrical plans, elevations and construction details. The course will include components from both traditional (manual) and Computer Assisted Drafting (CAD). (Co-requisite: MATH 50 or MATH 70 and COMM 80)

4/24/2012

#### **DRFT 115**

##### **Basic Computer Aided Drafting (2-2) 3 Credits**

This course is an introduction to Computer Aided Drafting. The primary focus is on entry-level AutoCAD Command usage, drawing commands, viewing commands, and modify commands. Topics include drawing layouts, 2-dimensional drawing, editing and viewing commands, drafting practices and standards, file management practices and practical uses of CAD drawings. (Fall or on demand)

#### **DRFT 120**

##### **Basic Civil Drafting (2-2) 3 Credits**

This course is an introduction to Basic Civil drafting utilizing Computer Aided Design (CAD) with Land Desktop and Eagle Point software which is used primarily to create drawings for civil engineering projects. Command usage, drawing methods, commands, viewing commands, and modifying commands will be covered. Topics include terminology, surveys, contouring, project development, drafting practices and standards, file management practices and practical uses of the software. (Prerequisite: DRFT 101) (Fall)

#### **DRFT 141**

##### **Assembly Drawings (1-2) 2 Credits**

This course builds a foundation for all engineering and technical design courses. This study builds knowledge and understanding of assembly drawings, the procedures for producing any of the assembly drawings. (Prerequisite: DRFT 101) (Fall-Spring)

#### **DRFT 144**

##### **Weldment and Structural Drawings (.5-1) 1 Credit**

This course introduces specialized areas of drafting such as: threaded fasteners, assembly sections, welding drawings, electrical drawings, piping drawings and structural drawings. (Prerequisite: DRFT 101) (Fall-Spring)

#### **DRFT 197, 198, 199, 297, 298, 299**

##### **Topics in Drafting and Design Technology (0-8 to 3-0) 1-3 credits**

This is a variable content course with areas of study that reflect current needs of individual students in the area of Drafting and Design Technology. Topics are identified in the course description. (Prerequisite: Permission of instructor)

#### **DRFT 202**

##### **Machine Design (2-2) 3 Credits**

This course is designed to bring together the practical applications, skills and knowledge developed in previous drafting and design courses. The electrical and mechanical components, which are commonly utilized in a machine, which will convert a power source to work output, will be discussed. These components will then be applied to machine design projects. (Prerequisite: sophomore standing.) (Fall-Spring)

#### **DRFT 203**

##### **Tool and Die Design (2-2) 3 Credits**

This course is designed to give the drafting student a basic functional background important in the design of jigs & fixtures. General practices followed in the design of jigs & fixtures used in the production of consumer products will be covered. (Prerequisite: DRFT 101, 141) (Spring)

#### **DRFT 205**

##### **Intermediate Computer Aided Drafting (2-2) 3 Credits**

This course is designed as a continuation of Basic Computer Aided Drafting (DRFT 115) with the addition of Auto CAD's advanced capabilities including: Associate Dimensioning, "Trace", calculating strategy, Building Blocks, Symbol library creation, Bill of Materials generation, Isometrics and other three dimensional drawings. (Spring or on demand)

#### **DRFT 215**

##### **Advanced Computer Aided Drafting (2-2) 3 Credits**

This course is designed to introduce the student to a variety of new activities using Computer Aided Drafting which include: (1) 3D-Drawing (2) 3D-Modeling, (3) Review of Auto CAD's Release 12, (4) Review of new types of CAD software, (5) Creating custom screen menus, (6) A look at Auto LISP, (7) Translating drawings via DXF and IGES. (Spring [odd years] or on demand)

#### **DRFT 220**

##### **Introduction to Geometric Dimensioning & Tolerancing (3-0) 3 Credits**

Geometric Dimensioning and Tolerancing is the study of the international standards for specifying the location and size of part features. This course is a general orientation to the concepts involved. (Prerequisite: DRFT 101) (On Demand)

## **EARLY CHILDHOOD DEVELOPMENT**

#### **ECD 101**

##### **Foundations and Theories in Early Childhood Education (3-0) 3 Credits**

This course is an introduction to early childhood education including a historical perspective of early childhood education, relating to parents and other professionals in the community, and advocating or children and families. (Prerequisite: Reading at least at Reading Level 1)

#### **ECD 103**

##### **Health, Safety, & Nutrition of Young Children (3-0) 3 Credits**

This course covers a review of health/safety practices recommended for childcare and includes information on common diseases and health problems. Certification preparation is provided in pediatric safety, CPR and first aid. Guidelines and information nutrition and

developmentally appropriate activities are also studied in the course. # (Prerequisite: Reading at least at Reading Level 1. Successfully complete first aid and CPR certification for adult, child and infant by the end of the semester.)

#### **ECD 201**

##### **Curriculum for Early Childhood Programs (3-0) 3 Credits**

The goals of this course are to introduce students to the appreciation and assessment of young children's thinking, to provide opportunities to develop competencies in promoting the learning and overall development of young children individually as well as in groups, and to increase levels of professionalism as educators. # (Prerequisite: Reading at least at Reading Level 1; ECD 101 and ECD 103 or current CDA)

#### **ECD 203**

##### **Early Childhood Practicum (2-0) 2 Credits**

By actively participating in the care and education of young children in an early childhood program, students will become more proficient in administrative skills, increase their awareness of contemporary issues in early childhood, and will demonstrate a high level of competence as a head teacher. Students will serve a total of 45 hours in field experience and 16 hours in seminar during the semester. (Prerequisite: Reading at least at Reading Level 1 and provide a current copy of the criminal background check. Concurrent enrollment in ECD 201 is expected.)

## **ECONOMICS**

#### **ECON 201**

##### **Principles of Economics I (3-0) (Macro) 3 Credits**

This basic course in aggregate economics emphasizes national income theory, fiscal policy, money and monetary policy, business cycles and economic growth. Students successfully completing this course partially fulfill Social and Behavioral Science general education requirements. # (Prerequisite: Reading at least at Reading Level 1.) (Fall-Spring)

#### **ECON 202**

##### **Principles of Economics II (3-0) (Micro) 3 Credits**

A continuation of Economics 201, this course emphasizes price, theory, competition models, wage, rent, and profit determination, international trade and balance of payments theory, and special international problems. Students successfully completing this course partially fulfill Social and Behavioral Science general education requirements. # (Prerequisite: Reading at least at Reading Level 1.) (Note: ECON 201 is not a prerequisite for ECON 202.) (Fall-Spring)

# EDUCATION

*NOTE: The state of Missouri may require all teacher education students to complete additional specific general education courses. Students are advised to work closely with their education advisor to select courses to meet current state certification requirements.*

## **EDUC 203** **Foundations of Education (3-0)**

**3 Credits**

This course is designed to examine the historical, philosophical, sociological, political, economic, and legal foundations of the American public education system. Students will explore the nature of school environments, design, and organization of school curricula and characteristics of effective schools and instruction in grades P-12. Educational structures, practices, and projections for the future will be studied. (Prerequisite: ENGL 101)

## **EDUC 205** **Music for Elementary Teachers (3-0)**

**3 Credits**

Students study and use the methods, materials and skills involved in the integration of music into the elementary classroom curriculum. This course is DESE approved for Elementary Education majors. # (Prerequisite: Reading at least at Reading Level 1.) (As needed)

\*\*\*\*\*  
**\*#NOTE: Reading Level 1 is reading at least the 10<sup>th</sup> grade level or have completed LOC 50. Reading at the College Level is reading at least the 12<sup>th</sup> grade level or have completed LOC 90**

## **EDUC 206** **Literature for Children (3-0) 3 Credits**

This study of literature for elementary grades is recommended for, but not restricted to, Elementary Education majors. Students evaluate literature as a developmental tool. This course does not fulfill the literature portion of the general education Humanities requirement. This course is DESE approved for Elementary Education majors. # (Prerequisite: ENG 101 or higher and reading at least at Reading Level 1.) (As needed)

## **EDUC 207** **Art for Children (3-0) 3 Credits**

This course will survey issues and trends related to teaching art in the elementary public school, promoting an appreciation for the visual arts in the educational process and acquainting the student with art media, process of art production, curriculum integration, and the methods of instructing art to children. This course is DESE approved for Elementary Education majors. # (Prerequisite: Reading at least at Reading Level 1.) (As needed)

## **EDUC 210** **Technology for Teachers (3-0)**

**3 Credits**

In this course students will learn how to integrate instructional technology into the P-12 classrooms. Students will study a variety of software programs, presentation technology, and telecommunication tools. The focus will also be on social, ethical, legal, and human issues surrounding the use of technology. (Prerequisite: ENGL 101)

## **EDUC 230** **Educational Psychology (3-0)**

**3 Credits**

This course is designed to help students relate the application of psychological principles to teaching, learning, and assessment and the educational practice in P-12 classrooms. It will focus on the learner and the learning process, teacher characteristics, and classroom processes that increase student motivation. Student diversity and appropriate instructional strategies for students with special needs will also be introduced. (Prerequisite: PSYC 101)

## **EDUC 240** **Education of Exceptional Learners (3-0)**

**3 Credits**

This survey course is an introduction to exceptional learners and their education in grades P-12. Students will attain knowledge, skills, and dispositions that will enable them to work effectively with exceptional learners in general education or special education. (Prerequisite: EDUC 230)

## **EDUC 250** **Teaching Profession with Field Experience (3-0) 3 Credits**

This course provides students an opportunity to observe teaching and learning for thirty (30) hours or more in P-12 classrooms. Students are introduced to the requirements for teacher preparation and certification. Students will examine characteristics of effective teaching. The course is designed to assist students in determining if a career in teaching is an appropriate goal. (Prerequisite: ENGL 101)

\*\*\*\*\*

The following classes have not been approved by DESE and are not required for degrees in Elementary or Secondary Education. Students should contact representatives at their transfer college to determine how the courses will transfer. The State Board of Education has not approved these classes as core classes for Teacher Education majors.

## **EDUC 100, 101, 200, 201** **Topics in Teacher Education (1-3)**

**1-3 Credits**

These courses involve the study of selected teacher education topics that require greater emphasis, different

methodology, or are not covered in other classes.

## **EDUC 211** **Peer Tutoring (1-0) 1 Credit**

This course is designed for the above average student interested in helping other students with academic course work. The class will meet for 12 hours the first three weeks of the semester and will have four more meeting times throughout the semester. Students can make application to the ARC for employment as a peer tutor.

# EMERGENCY MEDICAL SERVICES

## **EMT 101** **Emergency Medical Technician 101 (9-0) 9 Credits**

**CPR certification is required by the state of Missouri before this course can be taken.** The Emergency Medical Technician Program includes a twelve (12) hour hospital observation in the emergency room as well as thirty-six (36) hours in an ambulance. Topics of the course span human anatomy and physiology; vital signs and their interpretations; cardiopulmonary resuscitation; control of bleeding, bandaging and splinting; effects of medical emergencies on the body and their treatments, including heart attack, stroke, communicable diseases, child birth and child patients, diabetes, myelitis and chronic obstructive pulmonary disease. This course is approved by the Missouri Department of Health, Bureau of Emergency Medical Services and will allow successful students to sit for the state certification exam for licensure. (Prerequisites: AHA Healthcare Provider Level CPR certification, fingerprint background check at the cost of the student PRIOR to acceptance into program, ACT score of 18 or equivalent COMPASS of 80) (Fall-Spring)

## **EMTP 201** **Emergency Medical Technician-Paramedic (12-0) 12 Credits**

This is the first of three courses of a 27 week program which follows the United States Department of Transportation Paramedic National Standard Curriculum. In this course the students will be exposed to the roles and responsibilities of a paramedic within an EMS system, apply the basic concepts of development pathophysiology and pharmacology to assessment and management of emergency patients, be able to properly administer medications, and communicate effectively with patients. (Prerequisites: EMPT 299 or equivalent and Current EMT Licensure) (Spring-Summer)

## **EMTP 202** **Emergency Medical Technician-Paramedic (12-0) 12 Credits**

This is the first of three courses of a 27-week program which follows the United

4/24/2012

States Department of Transportation Paramedic National Standard Curriculum. In this course the students will be exposed to the roles and responsibilities of a paramedic within an EMS system, apply the basic concepts of development pathophysiology and pharmacology to assessment and management of emergency patients, be able to properly administer medications, and communicate effectively with patients. (Prerequisite: EMTP 201) (Spring)

#### **EMTP 203**

##### **Paramedic III (12-0) 12 Credits**

This is the last of three courses of a 27-week program which follows the United States Department of Transportation Paramedic National Standard Curriculum. In this course the students will be exposed to the roles and responsibilities of a paramedic within an EMS system, apply the basic concepts of development pathophysiology and pharmacology to assessment and management of emergency patients, be able to properly administer medications, and communicate effectively with patients. (Prerequisites: EMTP 201, 202) (Summer)

\*\*\*\*\*

**\*NOTE: Reading Level 1 is reading at least the 10<sup>th</sup> grade level or have completed LOC 50. Reading at the College Level is reading at least the 12<sup>th</sup> grade level or have completed LOC 90**

#### **EMTP 299**

##### **Topics: Fundamentals of Anatomy & Physiology (4-0) 4 Credits**

Human Anatomy and Physiology covers the structure and function of various systems and organs in the human body. Inter-relationships between systems show students in the medical and physical education fields how the entire body functions as a unit. Emphasis will be placed on the cardiovascular, respiratory, central nervous, gastrointestinal and musculoskeletal systems. (Prerequisite: Students must be prospective Paramedic Program students.) (Fall)

## **ENGLISH AND LITERATURE**

#### **ENGL 100**

##### **Mechanics of Composition (3-0)**

**3 Credits**

This course focuses on an in-depth study of traditional grammar and mechanics of composition, including an intensive analysis of subjects, verbs, sentence structure, and punctuation. The course is required of students scoring below the placement cut-off score, recommended for students returning to school from a prolonged absence, and is beneficial for elementary or secondary education majors. The course does not fulfill communications requirements for the AA degree and may be taken concurrently with ENGL 101. (Fall-Spring-Summer)

#### **44 Course Descriptions**

#### **ENGL 101**

##### **English Composition (3-0) 3 Credits**

The primary aim of this freshman writing course is to give students instruction and practice in writing mechanically correct, well organized, and well-developed expository themes on topics of importance and significance. This course fulfills a portion of communications general education requirements. (Prerequisites: ENGL 100 or an appropriate score on the placement exam; OA 105 or an appropriate keyboarding placement score.) (Fall-Spring-Summer)

#### **ENGL 102**

##### **Advanced English Composition (3-0)**

**3 Credits**

This writing course continues the study of clearly effective written expository prose for those who have successfully completed English 101. In addition, students advance to study more complex methods of thesis development, particularly argument. Research and documentation procedures are integral subject matter. This course fulfills a portion of communications general education requirements. (Prerequisite: ENGL 101 and OA 105 or appropriate keyboarding placement score) (Fall-Spring-Summer)

#### **ENGL 103**

##### **English Honors Composition (6-0)**

**6 Credits**

Qualified students study English Composition 101 and 102 for intensive practice in rhetorical patterns. Techniques of semantics, writing, and research via traditional routes, as well as the Internet, are combined into a one-semester completion of required composition course work. This course fulfills a portion of communications general education requirements. (Prerequisite: ACT English score of at least 26 and OA 105 or an appropriate keyboarding placement score) (Fall)

#### **ENGL 109**

##### **Introduction to Literature I (3-0)**

**3 Credits**

Introduction to Literature emphasizes enjoyment, appreciation, and understanding of various types of literature: poetry, drama, and fiction. This course partially fulfills general education humanities requirements. (Fall-Spring-Summer)

#### **ENGL 113, 114, 213, 214**

##### **Topics in Language and Literature**

**1-4 Credits**

An opportunity to participate in a variety of topics and/or projects pertaining to language and literature offers specialized, in-depth study. Students design the course in conference with instructor and division chair. (Arranged)

#### **ENGL 120**

##### **Masterpieces of World Literature I (3-0) 3 Credits**

Selected reading in Greek and Roman literature emphasizes epics, dramas, and mythology as well as the Divine Comedy, Don Quixote, and a Shakespearean masterpiece. The time period studied begins with the Classical Age and continues through the Renaissance. This course partially fulfills general education humanities requirements. (Spring)

#### **ENGL 125**

##### **Masterpieces of World Literature II (3-0) 3 Credits**

A survey of landmarks of world literature from the eighteenth century to the twentieth century Western thought. Readings are selected from Moliere, Swift, Voltaire, Chekhov, Ibsen, Tolstoy, Kafka, and others. This course partially fulfills general education humanities requirements. (Fall-Summer)

#### **ENGL 203**

##### **Technical Report Writing (3-0)**

**3 Credits**

Students are introduced to the practical aspects of preparing business and industrial reports in this course. Techniques of collecting and presenting data are emphasized through quality communication: formal and informal reports, demonstration, presentation and discussion. This course fulfills a portion of A.A.S. Communications general education requirements. (Prerequisite: ENGL 101 or permission of instructor) (**Keyboarding skills are necessary.**) (Fall-Spring)

## **ENGLISH LANGUAGE INSTITUTE**

Crowder College's English Language Institute is a language intensive program for students with limited proficiency in English. An integrated approach to language acquisition allows students to interactively develop language skills. As students' language skills increase, the program is designed to bridge students into college level coursework.

#### **ELI 31**

##### **English for Non-Native Speakers I (12-0) 12 Credits**

This course provides non-native speakers with intensive training in basic English skills to acquire vocabulary and apply knowledge of the English language structure and mechanics to understand basic spoken English, participate in oral communication at the beginning level, comprehend brief, simplified printed material, and produce short, clear and logical written text. (Placement by Assessment)

**ELI 33****English for Non-Native Speakers II (Intermediate) (6-0) 6 Credits**

This course provides non-native speakers with intensive training in intermediate English skills to acquire vocabulary and apply knowledge of the English language structure and mechanics to understand spoken English, participate in oral communication at the intermediate level, comprehend simplified printed material, and produce clear and logical written text. (Prerequisites: ELI 31 and/or placement by assessment)

**ELI 35****English for Non-Native Speakers III (3-0) 3 credits**

This course provides non-native speakers with intensive training in advanced English skills to acquire vocabulary and apply knowledge of the English language structure and mechanics to understand spoken English, participate in oral communication at the advanced level, comprehend printed material, and produce clear and logical written text. (Prerequisites: ELI 33 and/or placement by assessment)

**ELI 37****English for Non-Native Speakers: Special Topics (3-0) 3 Credits**

This course provides non-native speakers with specialized training in a focused set of English language skills. The special topics covered will be determined by the student's current language proficiency and expressed language acquisition goals in cooperation with the ELI instructor.

## ENVIRONMENTAL HEALTH TECHNOLOGY

**ERC 124****Water Lab (1-2) 2 Credits**

The course emphasizes the lab tests required for the monitoring and reporting requirements involved with drinking water. The student learns the approved testing procedures; jar tests and data analysis in terms of finished water quality determination.

**ERC 132****Wastewater Lab (1-2) 2 Credits**

The course emphasizes the lab tests required for NPDES reporting and process control tests, which are used to optimize the treatment process. The student learns the approved testing procedures and how to set up a quality control program for the lab. The interpretation of lab data for process control and troubleshooting is also included in this course.

**ERC 140****Basic Water Treatment (3-0)****3 Credits**

This course will introduce the processes of water treatment. The focus will be geared toward professionals seeking a lower level state license in drinking water treatment, or background knowledge for environmental science study of water purification. Topics in this course will cover water source parameters including: Hydrologic cycle, groundwater management, water protection, well construction and protection. Additional areas of chemistry of dissolved minerals and gasses, flow measurement, disinfection and microbiology will provide the background information required. The course will also cover assessment of treatment techniques to include; aeration, softening, disinfection, fluoridation, iron and manganese removal, taste and odor control. This class emphasizes municipal plant operations. The student will be required to test for a state certification in drinking water either class "D" or "C" based on years of experience. (Prerequisite: Math 50 or appropriate score)

**ERC 141****Water Distribution (2-0) 2 Credits**

This course explains the components, operation, and maintenance of water distribution systems. Specific topics include water storage, valves, hydrants, water service connections, and flow metering. The class covers many common bacteriological collection procedures and monitoring requirements as well as regulatory compliance through state and federal agencies.

**ERC 142****Basic Wastewater Treatment (3-0)****3 Credits**

This course will introduce the processes of wastewater treatment. The focus will be geared toward professionals seeking a lower level state license in wastewater treatment, or background knowledge for environmental science study of wastewater purification. This class explains the physical, biological, and chemical treatment of wastewater. Topics for class discussion include flow measurement, preliminary treatment, screening and grit removal. The second stage process of primary treatment includes sedimentation basins and solids handling. The final treatment stages of secondary biological treatment processes include; trickling filters, rotating biological treatment, waste stabilization ponds, clarification and disinfection. This class emphasizes municipal plant operations. The student will be required to test for a state certification in wastewater either class "D" or "C" based on years of experience. (Prerequisites: Math 50 or appropriate placement score.)

**ERC 221****Chlorine and Disinfection (2-0)****2 Credits**

This course explains the disinfection of water and wastewater from an operational perspective. Topics include breakpoint chlorination, ozonation, ultraviolet disinfection, equipment operation and maintenance. Emphasis on safety practices associated with the proper operation of chlorination equipment concludes the course.

**ERC 222****Utility Management (2-0) 2 Credits**

This course offers instruction in the fundamental practices which are important to good management and necessary for efficient, business-like operation of treatment works. Topics include business communications, personnel management, budgeting, procurement, asset management, consulting engineers, and public relations. Additional topics will include sanitary surveys and communication with regulatory agencies.

**ERC 224****Water Internship (0-5) 2 Credits**

During the water treatment semester, students spend 80 hours working in a water treatment plant. This on-the-job training allows students to observe and participate in the operation of a treatment system as an operator. The student will job shadow operations, laboratory, and maintenance personnel in understanding their job function and duties.

**ERC 225****Water/Wastewater Pumps & Motors (2-0) 2 Credits**

This course will provide a comprehensive coverage of the operation and maintenance of pumps and motors. The basic concept of motor function, design and operation will be covered with emphasis on preventative maintenance and troubleshooting of electric controls. Material will be presented on efficient operation and preventative maintenance of pumps. The course will apply to both water and wastewater treatment operations.

**ERC 231****Land Application of Waste (2-0)****2 Credits**

This course includes all processes for sludge treatment and handling. Specific requirements for the land application of sludge, such as site characteristics, application rate and testing requirements will be discussed.

**ERC 232****Industrial Pretreatment (3-0) 2 Credits**

The course presents the basics of industrial waste treatment processes and waste reduction as well as the inspection, sampling, regulation and enforcement requirements of the Industrial Pretreatment Program required by the EPA. Both industrial and municipal perspectives are presented.

**ERC 234**

**Wastewater Internship (0-5) 2 Credits**

During the wastewater treatment semester, students spend 80 hours working in a wastewater treatment plant. This on-the-job training allows students to observe and participate in the operation of a treatment system as an operator. The student will job shadow operations, laboratory and maintenance personnel in understanding their job function and duties.

**ERC 240**

**Industrial Health & Safety (3-0)**

**3 Credits**

This course provides an overview of the Occupational Safety and Health Standards (29 CFR, Parts 1900 to 1910). Emphasis is placed on identifying applicable OSHA regulations, interpreting these regulations and developing strategies to ensure compliance.

**ERC 253**

**Hydraulics (3-0)**

**3 Credits**

This college course introduces the basic principles of hydraulic systems. These basic concepts will be developed and applied to the design, operation, and maintenance of water/wastewater systems. Students will use hydraulic calculations in the application of these concepts.

**ERC 260**

**Computer Use in Water/Wastewater**

**(2-0) 2 Credits**

This class familiarizes students with the basic techniques involved in the operation of a microcomputer and a commercially available software program often used in home and small business applications. The class can be taken by students in any academic or career-vocational major.

**ERC 271**

**Advanced Wastewater Treatment (3-0)**

**3 Credits**

This course is designed for the wastewater professional seeking higher certification in state licensing for wastewater treatment. The core topics that will be covered in-depth are; disinfection/bacteriological, hydraulics, laboratory, regulations, mechanical systems, general science, municipal, industrial, and combined sewer systems, and specialty treatments. The course will also cover assessment of treatment techniques to include; preliminary treatment, primary treatment, fixed film treatment, activated sludge, biological nutrient removal, chemically enhanced treatment. This class emphasizes municipal plant operations. The class will cover additional concepts in design, facility upgrades, new technology and complying with more stringent National Pollutant Discharge Elimination System (NPDES) permits. (Prerequisites: ERC 135 or ERC 142 or have obtained a class C wastewater certification (or equivalent))

**ERC 272**

**Advanced Water Treatment (3-0)**

**3 Credits**

This course is designed for the water professional seeking higher certification in state licensing for drinking water. The core topics that will be covered in-depth are: disinfection/bacteriological, hydraulics, laboratory, regulations, mechanical systems, general science, ground water treatment systems, surface water treatment systems, management, water distribution, and specialty treatments. This course will also cover assessment of treatment techniques to include; taste and odor, coagulation, flocculation, sedimentation, and filtration. This class emphasizes municipal plant operations. The class will cover additional concepts in design, facility upgrades, new technology and increased water quality standards. (Prerequisites: ERC 125 or ERC 140 or have obtained a Class C Water Certification (or equivalent))

**ERC 280**

**Water Source Planning, Design and Management (3-0)**

**3 Credits**

This course is designed for management and planning of a water or wastewater resource for municipal or industrial user. Topics covered in-depth will be water resource planning for surface and ground water, water reuse, microbial risk assessment, and sanitary surveys. The course will help professionals working with consulting engineers to better design systems from technological, regulatory, and financial perspective. The student will consider effects of life cycle costs, water availability, industrial users, and discharge limitations.

**ERC 281**

**Storm Water Management (3-0)**

**3 Credits**

This course is designed for management of storm water programs in accordance with small municipal separate storm sewer systems (MS4) permit communities. Topics discussed will be state and federal regulations, permit requirements, reporting, and storm water pollution prevention plans. In-depth coverage of best management practices for storm water, spreadsheet tool for estimating pollutant loads (STEPL) software for determining total maximum daily loading rates (TMDL) loading, and the 9 critical elements of a watershed plan.

**ERC 298**

**Wastewater Collection Systems (2-0)**

**2 Credits**

This course develops a working knowledge of the components and various types of mechanical equipment used in wastewater collection systems. The course focuses on preventative and corrective maintenance of the pipes and pumping systems involved in the collection and transport of wastewater.

**FSCI 102**

**Building Construction Related to Fire Service (3-0)**

**3 Credits**

This course provides the components of building construction that relate to fire and life safety. The focus of this course is on firefighter safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. (Prerequisite: Firefighter I & II)

**FSCI 103**

**Fire Investigations (3-0)**

**3 Credits**

This course is intended to provide the student with the fundamentals and technical knowledge needed for proper fire scene analysis and interpretations, including recognizing and conducting origin and cause, preservation of evidence, evidence collection, scene documentation, scene security, motives of the fire setter, and types of fire causes. (Prerequisites: Firefighter I & II)

**FSCI 108**

**Fire Protection Systems (3-0)**

**3 Credits**

This course provides information relating to the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, water supply for fire protection and portable fire extinguishers.

**FSCI 109**

**Legal Aspects of Emergency Services (3-0)**

**3 Credits**

This course introduces the Federal, State, and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of relevant court cases.

**FSCI 107**

**Fire Service Hydraulics & Fire Pump Operations (3-0)**

**3 Credits**

This course provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems.

**FSCI 205**

**Tactics & Strategies (3-0)**

**3 Credits**

This course provides an in-depth analysis of the principles of fire control through utilization of personnel, equipment, and extinguishing agents on the fire ground. The course will cover aspects of incident command, company operations, special situations and occupancies, and post incident activities. (Prerequisites: FSCI 108)

**FSCI 207**

**Fire Prevention/Code Enforcement**

**(3-0)**

**3 Credits**

This course provides fundamental information regarding the history and philosophy of fire prevention, organization

## FIRE SCIENCE

and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built-in fire protection systems, fire investigation, and fire and life-safety education. (Prerequisite: FSCI 108)

### **FSCI 208**

#### **The Company Officer (3-0) 3 Credits**

This course introduces the student to the organization and management of a fire department and the relationship of government agencies to the fire service. Emphasis will be placed on fire service leadership from the perspective of the company officer. (Prerequisite: FSCI 109)

### **FSCI 210**

#### **Fire Service Instructor (3-0)**

**3 Credits**

This course covers the roles of a fire service instructor, the characteristics of an effective instructor, various aspects of communication, challenges facing emergency services instructors, different aspects of professional development, the importance of instruction, and common instructional techniques. (Prerequisite: SPCH 101)

### **FSCI 212**

#### **Occupational Safety & Health for the Fire Service (3-0) 3 Credits**

This course introduces the basic concepts of occupational health and safety as it relates to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, EMS, hazardous materials, and technical rescue. Upon completion of this course, students should be able to establish and manage a safety program in an emergency service organization.

### **FSCI 260, 261, 262, 263**

#### **Problems in Fire Science 1-4 Credits**

Course content is assigned by the instructor and approved by the Associate Dean of Technical Education.

## **GEOGRAPHY**

### **GEOG 101**

#### **Principles of Geography (3-0)**

**3 Credits**

Emphasis in this study of the realms, regions and nations of the world includes geographical factors such as natural environments and human cultural patterns, which affect life on the earth. Students successfully completing this course partially fulfill Social and Behavioral Science general education requirements. (Prerequisite: Reading at least at Reading Level 1.) (Fall-Spring)

## **GEOLOGY**

### **GEOL 115**

#### **Introduction to Geology (4-2)**

**5 Credits**

This class introduces students to the basic concepts of Geology. Students will use these concepts to gain an understanding of: (1) the Earth's dynamic processes of formation and change, (2) how those changes are reflected and identified as its geologic history, and (3) environmental challenges on the planet. This course will partially fulfill the science requirements for the Associate of Arts degree. (Fall-Spring-Summer)

### **GEOL 210**

#### **Earth and Space Science For Teachers (2-4) 4 Credits**

A laboratory intensive course designed to give students an understanding of the processes of science and the basic concepts of Earth science (Geology, Oceanography, and Atmospheric Science) and Astronomy. This course is designed primarily for students intending to major in elementary education. One-day field trips and some night-time astronomical observations will be required. (Prerequisite: PHYS 101)

## **HEALTH INFORMATION TECHNOLOGY**

### **HIT 110**

#### **Introduction to Health Information Technology (3-0) 3 Credits**

This course is designed to expose students to the educational requirements and professional credentials for the health information management profession, as well as ethics and professional organizations. The organizational structure of the American Health Information Management Association (AHIMA) is reviewed along with member services provided. Analysis of health records with emphasis on record format, content, documentation guidelines, and procedures for quantitative and qualitative analysis of the record are also examined. Other topics addressed include the Master Patient Index, data sets, numbering and filing systems, record tracking, retrieval and retention and release of information. (Prerequisites: Admission to the Health Information Technology program.) (Fall)

### **HIT 115**

#### **Health Information Management Systems (3-0) 3 Credits**

This course provides an overview of computerized health information systems, computer-based patient records including architecture and design, evaluation and acquisition, data integrity, security and privacy concepts, automated registries and applications in Health Information

Technology. Students are introduced to state and federal initiatives, regulations and guidelines related to information systems for healthcare delivery systems. Also examined are topics of data dictionaries, data modeling, data warehousing, screen design, personal health records and micrographics, electronic or imaging technology for data/record storage and retrieval. (Prerequisites: HIT 110 and BSAD 125.) (Fall)

### **HIT 200**

#### **Alternative Healthcare Delivery Systems (3-0) 3 Credits**

This course will examine the alternate care settings in healthcare including physician practice, ambulatory, long-term and managed care, mental health, rehabilitation medicine and hospice, home health and dental care with respect to accrediting agencies, regulatory guidelines, and professional associations. Topics discuss include documentation requirements, systems and administrative procedures, software and technological tools and professional practice standards related to management of health information in each of the settings. (Prerequisites: HIT 110.) (Spring)

### **HIT 205**

#### **Human Anatomy and Physiology I for HIT (3-0) 3 Credits**

This course introduces the student to the structure and function of the human body from the basics of cellular and molecular functions, cell structure and the pathophysiology for the organs and organ systems. The course will emphasize the: (a) integumentary, (b) musculoskeletal, (c) histological and (d) neurological and special senses systems of the human body. The course will address the inter-relationships between systems and how the entire body functions as a unit. Credit earned in this course cannot be used to satisfy the AA or AS science requirement. (Prerequisites: Enrollment in the Health Information Technology Program.) (Fall)

### **HIT 206**

#### **Human Anatomy and Physiology II for HIT (3-0) 3 Credits**

This course is the second course in a two-course sequence covering the structure and function of various organ systems in the human body not covered in the Human Anatomy and Physiology I for HIT course. The course will emphasize the: (a) endocrine, (b) blood/circulatory and cardiovascular, (c) lymphatic and immune, (d) respiratory, (e) digestive and metabolism, and (f) urinary and reproductive systems of the human body. The course will address the inter-relationships between systems and how the entire body functions as a unit. Credit earned in this course cannot be used to satisfy the AA or AS science requirement. (Prerequisites: HIT 205)(Spring)

4/24/2012

#### **HIT 210**

##### **Pathophysiology with Pharmacology for HIT (3-0) 3 Credits**

This course is an introduction to human disease processes and treatment. Students will become familiar with common diseases by understanding the etiology (cause), signs and symptoms, diagnostic criteria, tests and procedures, associated complications and treatment regimens including surgical procedures and/or medications. Drug classification and adverse drug reactions are examined as are the implications of diagnostic test results. This course will prepare the student for coding by focusing on etiology, signs and treatment of diseases of the human body. (Prerequisites: OA 215; HIT 206 as co-requisite.)(Spring)

#### **HIT 220**

##### **ICD Coding (2-2) 3 Credits**

This course introduces the student to the coding conventions, coding principles and Centers for Medicare and Medicaid Services (CMS) official (inpatient) coding guidelines using the International Classification of Diseases (ICD) system. The coding principles of every section of the ICD system will be practiced. Topics discussed include MDCs (major diagnostic categories) and DRGs (diagnostic related groups). Students will be required to assign ICD codes to diagnosis/procedure using the ICD manual and web-based assignments assisting in the development of basic skills needed for accurate coding for medical billing purposes. (Prerequisites: OA 215; HIT 210 co-requisite required for HIT program admitted students.)(Spring)

#### **HIT 230**

##### **CPT Coding (2-2) 3 Credits**

This course introduces the student to the theory, structure and process of coding procedures using Current Procedural Terminology (CPT) and Healthcare and Financing Administration's (HCFA) Common Procedural Coding System (HCPCS). CPT coding guidelines, principles and conventions along with ambulatory services coding related to facility and professional services will be examined in detail. Students will also be exposed to HCPCS codes and the hospital chargemaster. (Prerequisites: OA 215; HIT 220 as co-requisite.)(Spring)

#### **HIT 240**

##### **Applied Coding (2-2) 3 Credits**

This course will introduce advanced coding concepts and address more complex issues related to the International Classification of Diseases (ICD) and Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS) coding. Web based assignments focusing on case studies, mock records and applying learning at a higher coding skill level. This course will prepare the student for their Clinical Application Experience course. (Prerequisites: HIT 230)(Summer)

#### **HIT 250**

##### **Quality Management in Healthcare (3-0) 3 Credits**

This course introduces the concepts and theories of utilization management, quality management and performance improvement principles focusing on historical, theoretical and practical applications and methodologies. Students are introduced to quality improvement theory and techniques (departmental and hospital-wide) and to the "team concept approach" including a review of member and/or facilitator skills needed to successfully participate. Quality management and performance improvement principles, tools and techniques are applied to the collection and analysis of data; regulatory, accreditation and patient safety compliance; credentialing and utilization; case and risk management. (Prerequisites: HIT 110 and ENGL 101). (Fall)

#### **HIT 260**

##### **Healthcare Law and Ethics (3-0) 3 Credits**

The focus of this course is on legal and ethical principles pertaining to healthcare, health information and the health record as a legal document. It will expose the student to the American legal system, the judicial process, liability, and statutes with practical application of these principles and concepts to health records. Patient privacy/confidentiality and security of health information is addressed as are the Health Insurance Portability and Accountability Act (HIPAA) regulations. Other topics include informed consents, special protections for patient records, release of information, response to subpoenas, admissibility, discoverability, negligence, living wills, advanced directives, compliance, fraud and abuse and electronic health information exchange (e-Health) issues. (Prerequisite: HIT 110.)(Spring)

#### **HIT 280**

##### **Healthcare Statistics and Research (3-0) 3 Credits**

*This course is an introduction to healthcare statistics, including a review of mathematics, interpretation of healthcare statistical formulas, presentation of data, and application of medical research tools. Students are provided with the basic hospital and healthcare statistics including the sources, definitions and calculation of common rate and percentages. Examination of use of statistics in relation to long-range healthcare planning and development, application of automated systems, integration of reports and registration of vital statistics. Students are introduced to, and apply, knowledge-based research techniques and research protocol* (Prerequisites: HIT 110 and MATH 111.)(Fall)

#### **HIT 285**

##### **Clinical Application Experience (1-5) 3 Credits**

This course is a supervised work experience which allows the student to correlate the didactic experiences of previous and concurrent courses with an individualized professional practice experience in various healthcare settings. The student will complete 56 on-site hours in an approved clinical setting. Students will practice the application of clinical classification systems, coding, case mix analysis and use of coded and abstracted data. The supervised clinical experience focuses on coding patient care records. Included in this course will be a review of the coding principles and applications to prepare Medical Coding Certificate graduates for the American Health Information Management Association's (AHIMA) national Certified Coding Associate (CCA) examination. Students will use mock test questions, discussion boards and other resources to prepare them for the national exam. (Prerequisites: HIT 115 and HIT 260; and co-requisite in HIT 200, HIT 250, and HIT 280; and a minimum cumulative GPA of 2.50 or permission of instructor.)

#### **HIT 290**

##### **Clinical Application Experience (1-5) 3 Credits**

This course is a supervised work experience which allows the student to correlate the didactic experiences of previous and concurrent courses with an individualized professional practice experience in various healthcare settings. The student will complete 112 on-site hours in an approved clinical setting. Topics include confidentiality, privacy and security of health information, retention, retrieval, storage and release of health information, electronic health records and compliance with reimbursement, coding, case mix analysis, and use of coded and abstracted data in addition to regulatory and accreditation requirements for health information. Included in this course will be review of the health information principles and applications to prepare Health Information Technology graduates for the American Health Information Management Association's (AHIMA) national RHIT examination. Students will use mock test questions, discussion boards and other resources to prepare them for the national exam. (Prerequisites: HIT 115 and HIT 260; and co-requisite in HIT 200, HIT 250, and HIT 280; and a minimum cumulative GPA of 2.50 or permission of instructor.)

## **HISTORY**

#### **HIST 101**

##### **Western Civilization I (3-0) 3 Credits**

In this history of Western Civilization from ancient times to the end of the Renaissance/Reformation era, the culture and institutional developments of the early civilizations and classical Europe are stressed. HIST 101 partially fulfills the



Social and Behavioral Science or Humanities general education requirement, but not both simultaneously. (Prerequisite: Reading at least at Reading Level 1.) (Fall-Spring)

### **HIST 102**

#### **Western Civilization II (3-0) 3 Credits**

Cultural developments and the growth of social and political institutions of the post-Renaissance/Reformation Western world are stressed. HIST 102 is a foundation course for understanding contemporary world problems. HIST 102 is a Social Science, not a Humanities, course. # (Prerequisite: Reading at least at college level.) (Note: HIST 101 is not a prerequisite for HIST 102.) (Spring)

### **HIST 106**

#### **U.S. History I (3-0) 3 Credits**

This introductory course surveys the development of American culture from the Colonial Period through Reconstruction. The growth of political, social and economic institutions is emphasized. Successful completion of History 106 at an accredited Missouri college fulfills the Missouri State requirements in constitutional study and partially fulfills Social and Behavioral Science general education requirements. (Prerequisite: Reading at least at college level.) (Fall - Spring - Summer)

### **HIST 107**

#### **U.S. History II (3-0) 3 Credits**

History 107 surveys United States economic, social, political and diplomatic history from Reconstruction to the late twentieth century. Students successfully completing this course partially fulfill Social and Behavioral Science general education requirements. # (Prerequisite: Reading at least at Reading Level 1.) (Note: HIST 106 is not a prerequisite for HIST 107.) (Fall-Spring)

### **HIST 111, 112, 113**

#### **Topics in History (1-3) 1-3 Credits**

These courses provide an opportunity to study selected History topics not covered in the History curriculum or to study in greater depth topics addressed in introductory History courses. The content of these courses may vary from semester to semester and some may require a prerequisite. Check with the Division Chair, instructor or advisor regarding prerequisites for a specific topic course. These courses will transfer but may or may not meet specific degree or program requirements at other institutions. # (Prerequisite: Reading at least at Reading Level 1.) (Offered on demand)

## **HONORS**

### **HONR 151, 152, 251, 252**

#### **Honors Seminar 1-4 Credits**

Students demonstrating high academic standards are invited to participate in the Honors Seminar class. The class meets

once a week for an in depth examination of current issues which follow the P.T.K. (Honorary Society) theme of the year. The structure of the class consists of guest lecturers, discussion, and audio-visual presentations. To be eligible for enrollment, students must either be enrolled in the honors program or must have completed 12 hours with a grade point average of 3.5 (College Prep classes not included) and must be currently enrolled in 6 hours of classes. (Fall-Spring)

### **HONR 103, 104, 203, 204**

#### **Special Topics in Honors 1-4 Credits**

Various topics and modes will be used to explore and research contemporary issues which are of interest and importance to society and the student. (Prerequisite: Meet criteria for Honors Seminar and permission of instructor)

### **ENGL 103**

#### **English Honors Composition**

**6 Credits**

Qualified students study English composition for intensive practice in rhetorical patterns. Techniques of semantics and research are combined into a one-semester completion of required composition course work. This course fulfills a portion of communications general education requirements and may be taken in place of ENGL 101 and ENGL 102. (Prerequisite: OA 105 or appropriate keyboarding placement score.) (Fall)

\*\*\*\*\*

**\*#NOTE: Reading Level 1 is reading at least the 10<sup>th</sup> grade level or have completed LOC 50. Reading at the College Level is reading at least the 12<sup>th</sup> grade level or have completed LOC 90**

### **HONR 110, 111**

#### **Canterbury Study Abroad Program 12 credits**

This program of study offers students a semester of study at Canterbury Christ Church University College in England. Students receive full credit toward a degree and gain experience with British life and culture. Students are limited to 12 hours of course work to allow time for excursions and local travel.

### **HUM 103**

#### **Cultural Diversity (3-0) 3 Credits**

This honors class is designed to explore a variety of different cultures to gain an understanding and an appreciation of ideas that are similar and different from our own. With mass communication and mass transportation, we are moving to a more global society that requires an appreciation of diversity. (Limited to Honors Program participants or students with a 3.5 cumulative G.P.A. or ACT composite of 26.) (Fall)

### **PLSC 104**

#### **National, State, Local Gov't- Honors (3-1) 3 Credits**

This is a political science class designed for honors students. The course content is the same as Political Science 103 except this class is writing intensive and, when appropriate, more varied instructional techniques will be used **in this class**. (Prerequisite: admission to Honors Program or consent of the instructor **and** reading at the college level.) (Spring)

## **HUMANITIES**

### **HUM 102**

#### **Cultural Diversity (3-0) 3 Credits**

This class is designed to explore a variety of different cultures to gain an understanding and an appreciation of ideas that are similar and different from our own. With mass communication and mass transportation, we are moving to a more global society that requires an appreciation of diversity.

### **HUM 103**

#### **Cultural Diversity (3-0) 3 Credits**

This honors class is designed to explore a variety of different cultures to gain an understanding and an appreciation of ideas that are similar and different from our own. With mass communication and mass transportation, we are moving to a more global society that requires an appreciation of diversity. This course entails a major honors project. (Limited to Honors Program participants or students with a 3.5 cumulative G.P.A. or ACT composite of 26.) (Fall)

## **JOURNALISM AND PUBLIC RELATIONS**

### **COMM 101**

#### **Introduction to Mass Communications (3-0) 3 Credits**

This course surveys the principles, history, and development of the mass media. The roles and effects of radio, television, newspapers, magazines, film, books, advertising, and the recording industry in the political, social, economic and philosophical life of today are examined. (Spring)

### **COMM 102**

#### **Introduction to Public Relations (3-0) 3 Credits**

This course introduces students to the theory and principles of public relations. It is designed for students interested in public relations or related fields in mass communications. (Fall)

### **COMM 111**

#### **Magazine Production (2-2) 3 Credits**

This course involves students in the magazine process from the collection of raw material through layout and design to the circulation of the finished product.

4/24/2012

(Prerequisite or co-requisite: ENGL 101)  
(Spring)

#### **COMM 112**

##### **Magazine Production (2-2) 3 Credits**

This course involves students in the magazine process from the collection of raw material through layout and design to the circulation of the Quill, Crowder's community literary/art magazine. (Prerequisite: COMM 111) (Spring)

#### **COMM 150**

##### **Introduction to Journalism (3-0)**

**3 Credits**

This is an applied journalism course in which the Sentry, the student newspaper, is used as a model for the forms and purposes of all phases of journalism: newsgathering, feature writing, layout, advertising and photography. (Prerequisite: OA 105 or appropriate keyboarding placement score and co-requisite or prerequisite: ENGL 101) (Fall-Spring)

#### **COMM 151**

##### **News and Feature Writing (2-2)**

**3 Credits**

Instruction and practice of gathering news materials, writing news reports and logos, rewriting, and preparing photos for layout will be given in the production of the Sentry. (Prerequisite: COMM 150) (Fall-Spring)

#### **COMM 152**

##### **Applied Journalism (2-0) 1 Credit**

By special arrangement with the instructor, students may work on the Sentry for one hour credit. They may work as a reporter, photographer, ad salesperson or computer operator. Students work independently through instructor assignments. (Prerequisite or co-requisite: ENGL 101) (Fall-Spring)

#### **COMM 160**

##### **Introduction to Broadcasting (3-0)**

**3 Credits**

This course will acquaint students with the historical development of the broadcasting industry, to help gain an appreciation of the roles of broadcasting in a free society and the role government and regulation played in the development of broadcasting. (Spring)

#### **COMM 171, 172, 173, 271, 272, 273**

##### **Topics in Communication (2-0)**

**1-3 Credits**

This course involves the study of selected topics in communication, journalism, and media-related fields that require greater emphasis, different methodology or are not covered in regular classes. Topics are identified by title in the class schedule. May be repeated if a different topic is covered. (Arranged)

#### **COMM 211**

##### **Magazine Production I (3-0) 3 Credits**

This course is designed for students who wish to continue their participation in the publication of the Crowder Quill.

(Prerequisite: COMM 111 and 112)  
(Spring)

#### **COMM 212**

##### **Magazine Production II (3-0) 3 Credits**

This course is designed for students who wish to continue their participation in the publication of the Crowder Quill. (Prerequisite: COMM 211) (Spring)

#### **COMM 225**

##### **Internship (0-8)**

**3 Credits**

Students enrolled in this course gain first-hand experience on the job working 135 hours during the term in a program designed by the sponsor, student, and instructor as a capstone experience. Internships may be completed in newspaper techniques, broadcast, advertising, public relations, or other approved media-related fields. (Prerequisite: Successful completion of at least 15 credits in a related field and instructor approval. Pass/Fail)

#### **COMM 230**

##### **Photocommunication I (3-0) 3 Credits**

An introduction to the essential processes and practices of photography, this course emphasizes digital imaging and manipulation as well as photojournalism principles and skills. Students are expected to provide their own digital single-lens reflex (DSLR) camera. Students should have a basic understanding of computer functions prior to enrolling in the class.

#### **COMM 231**

##### **Photocommunication II (3-0) 3 Credits**

This course continues COMM 230 (Photocommunication I) with further emphasis on lighting and shooting procedures as well as digital darkroom techniques, such as editing, enhancing, and manipulation. Emphasis will also be placed on storytelling with newsworthy images. Students are expected to provide their own digital single-lens reflex (DSLR) camera. (Prerequisite: COMM 230)

#### **COMM 250**

##### **Computer Journalism, Layout**

##### **and Production (2-2) 3 Credits**

This course places emphasis upon the use of the computer, using desktop publishing programs. The Sentry will provide practical journalistic experience. (Prerequisite: COMM 150, COMM 151) (Fall-Spring)

#### **COMM 251**

##### **Journalistic Editing (2-2) 3 Credits**

Emphasis is placed upon the practices and principles of copy reading, headline writing, illustration, staff selection, copy layout and printing through editorial experience on the Sentry. (Prerequisite: COMM 150) (Fall-Spring)

#### **COMM 252**

##### **Applied Journalism (2-0) 1 Credit**

By special arrangement with the instructor, students may work on the Sentry for one-hour credit. Students work independently

through instructor assignments.  
(Prerequisite: COMM 152) (Fall-Spring)

## **LANGUAGES**

#### **ASL 101**

##### **Beginning American Sign Language I**

##### **(3-0) 3 Credits**

Beginning American Sign Language (ASL) I will focus on developing conversational skills between deaf and hearing individuals using both fingerspelling and ASL manual signs. Comprehension skills and linguistic features of the ASL language will be emphasized. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both.

#### **ASL 102**

##### **Beginning American Sign Language II**

##### **(3-0) 3 Credits**

Beginning American Sign Language (ASL) II will continue the development of ASL skills. Expressive and ASL receptive communication will be enhanced. Additional ASL vocabulary will be learned. (Prerequisite: ASL I) This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both.

#### **FREN 101**

##### **Beginning French (3-0) 3 Credits**

This is a multimedia course that combines video, audio and print to teach French language and culture. It immerses the student in current, living French in everyday situations, spoken by natives. Its focus is on communication and proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both. (Fall)

#### **FREN 102**

##### **Beginning French II (3-0) 3 Credits**

This course continues the study of French language and culture. It immerses the student in current, living French in everyday situations. Its focus is on communication and proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both. (Prerequisite: FREN 101) (Spring)

#### **FREN 201**

##### **Intermediate French I (3-0) 3 Credits**

This course continues the study of French language and culture. It immerses the student in current, living French in everyday situations. Its focus is on communication proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for

a bachelor of arts, but may NOT apply toward both. (Prerequisite: FREN 102) (Upon request)

### **FREN 202**

#### **Intermediate French II (3-0) 3 Credits**

This course continues the study of French language and culture. It immerses the student in current, living French in everyday situations. Its focus is on communication and proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both. (Prerequisite: FREN 201) (Upon request)

### **FREN 103, 104, 105, 203, 204, 205**

#### **Topics in French 1-3 Credits**

This course covers topics not normally included in another class. Prerequisites are determined by the department and stipulated in the syllabus for each specific offering. May be repeated. (Upon request)

### **SPAN 100**

#### **Introduction to Spanish Vocabulary, Culture and Conversation (3-0)**

**3 credits**

This course introduces students to Spanish vocabulary, culture, and conversation. Audio and video materials supplement class practice. This is not a substitution for SPAN 101 and does not fulfill any requirements for a foreign language credit.

### **SPAN 101**

#### **Beginning Spanish (3-0) 3 Credits**

This is a multimedia course that combines video, audio, interactive software, and print to teach Spanish language and culture. It immerses the student in current, living Spanish in everyday situations, spoken by natives. Its focus is on communication proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both. (Fall-Spring)

### **SPAN 102**

#### **Beginning Spanish II (3-0) 3 Credits**

This course continues the study of Spanish language and culture. It immerses the student in current, living Spanish in everyday situations. Its focus is on communication proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both. (Prerequisite: SPAN 101 or permission of the instructor) (Fall-Spring)

### **SPAN 103**

#### **Introduction to Hispanic Culture (3-0)**

**3 Credits**

This course offers a brief introduction to Hispanic culture through examples of art, journalism, literature and music from and about Spain and Latin America. Knowledge of Spanish is not required.

### **SPAN 105**

#### **Conversational Spanish (3-0)**

**3 Credits**

This course is geared to those who have knowledge of the Spanish language. This course emphasizes idiomatic usage, vocabulary, grammar, and syntax. There is a focus on acquisition and development of skills necessary for effective oral and written communication. Hispanic culture, history, art, and literature will be highlighted in course materials, student presentations, and writing assignments. The material covered in this course is designed not only to meet the educational needs of traditional students of the language, but also the needs of the heritage language speakers who enter the Spanish program with some or all of the four language skills developed to varying degrees. (Prerequisites: SPAN 102 or equivalent) (Fall)

### **SPAN 106**

#### **Basic Conversational Spanish II (3-0)**

**3 Credits**

This is a continuation of Conversational Spanish I (SPAN 105) that includes conversational practice and cultural, historic, art and literary readings and discussions with student presentations and writing assignments. (Prerequisite: SPAN 105 or equivalent) (Spring)

### **SPAN 201**

#### **Intermediate Spanish (3-0) 3 Credits**

This course continues the study of Spanish language and culture. It immerses the student in current, living Spanish in everyday situations. Its focus is on communication proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both. (Prerequisite: SPAN 102 or permission of instructor.) (Fall or upon request)

### **SPAN 202**

#### **Intermediate Spanish II (3-0)**

**3 Credits**

This course continues the study of Spanish language and culture. It immerses the student in current, living Spanish in everyday situations. Its focus is on communication proficiency. This class may apply toward the Humanities General Education requirement, or may apply toward a foreign language requirement for a bachelor of arts, but may NOT apply toward both. (Prerequisite: SPAN 201 or permission of instructor) (Spring or upon request)

### **SPAN 107, 108, 109, 207, 208, 209**

#### **Topics in Spanish 1-3 Credits**

This course covers topics not normally included in another class. Prerequisites are determined by the department and stipulated in the syllabus for each specific offering. May be repeated. (Upon request)

### **SPAN 111**

#### **Introduction to Spanish for Health Care Workers (2-2) 3 Credits**

This is a multimedia course that combines video, audio, and print to introduce students to medical terms and elementary non-medical expressions in Spanish. This course is designed for students who work/plan to work in health care and who want to learn Spanish phrases as related to their daily activities. The course activities are divided into 2 major sections: First, basic language skills that are taught using the textbook, "an Introduction to Spanish for Health Care Workers"; Second, the memorization of dialogs related to specific medical tasks (e.g., assessing medical history, assessing health risks, making appointments, etc.). This course is not a Spanish language (grammar) course per se, but it designed to teach health care workers how to do specific tasks in Spanish. As such, there is no specific Spanish prerequisite to be enrolled in this course. All health care workers/students who are interested in acquiring the basic Spanish skills as related to their daily activities are encouraged to enroll in this course. Students who are interested in acquiring the Spanish language in general are invited to enroll in traditional Spanish language (grammar) courses. *This class may apply toward the Humanities Elective education requirement for the Nursing Program, or may apply toward an elective requirement for an A.A in Spanish, but may not apply toward both.*

## **LAW ENFORCEMENT**

### **LE 101**

#### **Introduction to the Criminal Justice System (3-0) 3 Credits**

This course is an introduction to the history, nature, structure, and function of the criminal justice system in the United States. An examination of the various aspects of the administration of justice systems, including law enforcement, courts and correctional agencies, including probation and parole, will be made. (Fall-Spring)

### **LE 200**

#### **Criminal Investigations (3-0)**

**3 Credits**

This course will cover the concept of criminal investigative work from the early days up to present practices. Areas of emphasis will be the history of criminal investigation, identification, documentation and collection of physical evidence, statutory guidelines, the criminal investigator as a witness, and the different methods of investigation for each type of felony crime. (Spring)

### **LE 210**

#### **Criminal Procedures (3-0) 3 Credits**

This course will examine the U.S. Constitution, cases, statutes, and other sources of regulation in the field of criminal

4/24/2012

procedure. These regulatory documents will be examined and considered as to how they apply to criminal law and the administration of justice. Specific issues to be covered include search and seizure, interrogations and confessions, grand jury investigations, identification procedures, and the right to counsel. (Spring)

#### **LE 250**

##### **Criminal Law (3-0)**

**3 Credits**

Criminal Law is an introduction to the purposes and functions of United States Criminal Law. The course highlights the rights and duties of officers and citizens in relation to local, state and federal laws. Students will examine the development, applications and enforcement of the various laws throughout Missouri and the United States. (Spring)

#### **LE 270**

##### **Drug Investigation (3-0)**

**3 Credits**

Drug Investigation is an introduction to the study of the use, abuse, and history of legal and illegal drugs in the United States and abroad and how it has affected communities. Principles of Statutory and Constitutional Law as they pertain to the investigation of drug related crime, and controversial issues concerning criminalization, legalization and taxation will be discussed. Principles of treatment and programs for first-time up to career offenders will be discussed and what the cost-benefit is for both the offender and the community in which they live. Methods of identification, detection, investigation and presentation of legally admissible evidence will be addressed. This course is recommended for law enforcement/criminal justice majors.

#### **LE 280**

##### **Report Writing (3-0)**

**3 Credits**

This course will identify the areas of concern in regard to proper documentation of police-related activities. It will focus on report writing skills, proper structuring of interviews and chronological documentation of events. The course will incorporate proper sentence structure, the use of correct terminology, and accuracy in written reports. (Fall)

#### **LE 290**

##### **Police Supervision and Management (3-0)**

**3 Credits**

This course will focus on police managerial systems; theory and styles as well as operation, leadership skills, and suggestions to create a better understanding of what is required to have an efficient, effective law enforcement agency. Organizational policies and procedures will be presented. Various law enforcement agencies will be examined, analyzed and comparisons made, and contrasts will be evaluated. (Fall)

## **LEARNING OPPORTUNITIES**

### **52 Course Descriptions**

#### **MATH 40**

##### **Arithmetic (2-0)**

**2 Credits**

This college prep course is recommended for students needing to improve their basic skills in the use of whole numbers, fractions, decimals, simple geometry and number theory. Students whose placement scores indicate a need are required to enroll. The course is offered on a credit/no credit basis, with 80% or better required to receive credit. A letter grade will not be given, and there will be no impact on the student's grade point average. This course cannot be applied to the general education mathematics requirement for graduation. (Prerequisites: An appropriate math placement score.) (Fall-Spring-Summer)

#### **MATH 50**

##### **Basic Algebra (3-0)**

**3 Credits**

This college prep course is recommended for students who have had no previous background in algebra and those whose placement scores indicate a need for beginning algebra. This course is offered on a credit/no credit basis, with 70% or better required to receive credit. These credits cannot be applied to requirements for graduation. A letter grade will not be given, and there will be no impact on the student's grade point average. (Prerequisite: MATH 40 or an appropriate math placement score) (Fall-Spring-Summer)

#### **COMM 80**

##### **Introduction to Communications (2-0)**

**2 Credits**

This course focuses on the study of basic grammar and mechanics of composition including an analysis of subjects, verbs, sentence structure, and punctuation. The course is required of some students as determined by scores on placement tests and is recommended for students returning to school from a prolonged absence. The course is offered on a credit/no credit basis, with 80% or better required to receive credit. A letter grade will not be given and there will be no impact on the student's grade point average. Students must earn credit for the course or reach the appropriate Crowder placement score in order to take further composition courses. These credits cannot be applied toward graduation requirements. (Placement by Crowder Standard Placement Exam)

#### **LOC 40**

##### **Reading Enhancement I (2-0)**

**2 Credits**

Students will be taught basic reading strategies to facilitate comprehension of expository and narrative text. The course is offered on a credit/no credit basis, with 80% or better required to receive credit. These credits cannot be applied to requirements for graduation. A letter grade will not be given and there will be no impact on the student's grade point average. (Prerequisite: Placement by Crowder Standard Placement Exam)

#### **LOC 50**

##### **Reading Enhancement II (2-0)**

**2 Credits**

This is a course for students needing to improve specific reading skills. Emphasis will be on adequate reading preparation, increasing reading speed and improving vocabulary and comprehension through the development of literal, critical and effective reading skills. These skills will be taught through a variety of textbook exercises, tests, computer software, quizzes and readings. In addition, outside reading/writing may be utilized to further ensure development of skills. The course is offered on a credit/no credit basis, with 75% or better required to receive credit. These credits cannot be applied to requirements for graduation. A letter grade will not be given and there will be no impact on the student's grade point average. (Prerequisite: LOC 40 or Placement by Crowder Standard Placement Exam)

#### **LOC 90**

##### **Reading Across the Curriculum (3-0)**

**3 Credits**

This course is designed to improve reading skills necessary to succeed in college level courses across disciplines. Emphasis is on critical reading techniques, content-specific vocabulary and efficient comprehension. A variety of readings, assessments, and supplemental exercises are included to enhance the development of the various reading skills. The course is offered on a credit/no credit basis, with 70% or better required to receive credit. These credits cannot be applied to requirements for graduation. A letter grade will not be given and there will be no impact on the student's grade point average. (Prerequisite: LOC 50 or Placement by Crowder Standard Placement Exam)

#### **LOC 100**

##### **College Success (3-0)**

**3 Credits**

This course is designed to increase success in college by assisting you in acquiring and mastering the skills necessary for you to reach your personal and educational goals. Course topics will include time and stress management, test taking, communication skills, study techniques, question-asking skills, community resources, college transfer issues, career planning, budget planning, and personal issues that one may face as a college student. Successful completion of College Success is required for students placing in three or more developmental courses.

#### **LOC 103**

##### **College Connections (3-0)**

**3 credits**

College Connections is designed as an academic intervention and application course. The course is required for students on academic probation. This course will assist you in acquiring and implementing many proven strategies for creating greater academic, professional,

and personal success. To explore these strategies we will use individual and group discussions, activities, and assignments, guided journal writing, as well as personal one-on-one meetings. As a bonus, you will learn to express yourself more effectively in writing. You may never again have an opportunity quite like this one to discover how to create a rich, personally fulfilling life. I urge you to make the most of this extraordinary opportunity! If you do, you will dramatically change the outcome of your life – for the better! A grade of “C” or higher is required to meet academic status requirements. The course must be repeated until academic status is met. (Prerequisite: Only students on academic probation or returning from suspension may enroll in this course)

### **LOC 105**

#### **Career Directions (1-0) 1 Credit**

This course is designed to help students discover what their personal interests, values and talents are, and to learn how to use this knowledge to help them in choosing a career. Taking this course can shape their educational experiences at Crowder College and help them understand how career choices can impact their lifestyle.

### **LOC 206**

#### **Career Exploration (0.5-1.25) 1 credit**

This course provides students with the opportunity to refine their career plan, to practice job search skills such as interviewing and professional communication, and to evaluate their career goals. Students will complete a combination of an eight hour equivalent of class meetings and twenty hours of on-site field experience.

## **MATHEMATICS**

### **MATH 40**

#### **Arithmetic (2-0) 2 Credits**

This college prep course is recommended for students needing to improve their basic skills in the use of whole numbers, fractions, decimals, simple geometry and number theory. Students whose placement scores indicate a need are required to enroll. The course is offered on a credit/no credit basis, with 80% or better required to receive credit. A letter grade will not be given, and there will be no impact on the student's grade point average. This course cannot be applied to the general education mathematics requirement for graduation. (Prerequisites: An appropriate math placement score.) (Fall-Spring-Summer)

### **MATH 50**

#### **Basic Algebra (3-0) 3 Credits**

This college prep course is recommended for students who have had no previous background in algebra and those whose placement scores indicate a need for beginning algebra. This course is offered on a credit/no credit basis, with 70% or

better required to receive credit. These credits cannot be applied to requirements for graduation. A letter grade will not be given, and there will be no impact on the student's grade point average. (Prerequisite: MATH 40 or an appropriate math placement score) (Fall-Spring-Summer)

### **MATH 60**

#### **Pre-Collegiate Math I (2-2) 3 Credits**

This college prep course is recommended for students needing to improve their skills in basic math. Students whose placement scores indicate a need are required to enroll. The course is offered on a credit/no credit basis. This course cannot be applied to the general education mathematics requirement for graduation. (Prerequisites: An appropriate math placement score.) (Fall-Spring-Summer)

### **MATH 70**

#### **Pre-Collegiate Math II (2-2) 3 Credits**

This college prep course is recommended for students needing to improve their skills in basic algebra. Students who made satisfactory progress in Math 60 are permitted to enroll. The course is offered on a credit/no credit basis. This course cannot be applied to the general education mathematics requirement for graduation. (Prerequisites: A satisfactory completion of Math 60) (Fall-Spring-Summer)

### **MATH 100**

#### **Intermediate Algebra (3-0) 3 Credits**

This preparatory course for College Algebra is recommended for students successfully completing Basic Algebra or whose placement scores indicate a need for additional algebra. Topics include algebraic expressions, basic graphing, and factoring polynomials. This course will not satisfy most degree requirements for mathematics. It will count as an elective on your transcript. (Prerequisite: MATH 50 or an appropriate math placement score) (Fall-Spring-Summer)

### **MATH 104**

#### **Technical Mathematics (3-0)**

#### **3 Credits**

Technical Mathematics applies practical concepts of mathematics to a variety of real world problems. This class is specifically designed to meet the needs of students in the college's AAS Technology programs. This class will not satisfy the general education requirement for an Associate of Arts degree. (Prerequisite: MATH 50 or an appropriate placement exam score) (Fall-Spring)

### **MATH 107**

#### **Introduction to Mathematics (3-0)**

#### **3 Credits**

This course emphasizes some of the basic concepts, principles and methods of mathematics. Topics include set theory, geometry, statistics, probability, number systems and the metric system. (Prerequisite: MATH 100 or an appropriate

placement exam score) (Fall-Spring-Summer)

### **MATH 111**

#### **College Algebra (3-0) 3 Credits**

College Algebra studies algebraic expressions, real and complex numbers, functions, equations, and inequalities. This course will satisfy most degree requirements in Mathematics and should transfer to any four-year institution. (Prerequisite: MATH 100 or placement by the placement exam. (Fall-Spring-Summer)

### **MATH 112**

#### **Trigonometry (2-0) 2 Credits**

Trigonometry involves the study of the six trigonometric functions and their applications. (Prerequisite: MATH 100 or an appropriate placement score.) (Fall-Spring)

### **MATH 150**

#### **Calculus I, Part I (2-0) 2 Credits**

This course begins a sequence of calculus and analytical geometry courses. Topics include the derivative and its applications. (Prerequisite: MATH 111 or an appropriate placement exam score. Concurrent enrollment in MATH 112 will be required for those students with a limited background in trigonometry) (Fall-Spring)

### **MATH 160**

#### **Calculus I, Part II (3-0) 3 Credits**

This course continues the study of Calculus, including applications of the derivative, L'Hopital's Rule, and the integral (Prerequisite: MATH 150) (Spring)

### **MATH 201**

#### **Calculus II (5-0) 5 Credits**

This course continues the calculus/analytical geometry sequence. Topics include various methods and applications of integration, sequences and series, and vectors. (Prerequisite: MATH 160) (Fall)

### **MATH 202**

#### **Calculus III (5-0) 5 Credits**

This course completes the calculus/analytical geometry sequence. Topics include vector-valued functions, graphing in three dimensions, calculus of multiple variables, line and surface integrals. (Prerequisite: MATH 201) (Spring)

### **MATH 210**

#### **Differential Equations (3-0) 3 Credits**

Differential Equations provides methods for the solution of standard types of ordinary first and second order differential equations. The use of numerical techniques, the Laplace transform, power series and linear methods of solution are examined. (Prerequisite or co-requisite: MATH 202) (Spring)

### **Math 271, 272, 273**

#### **Topics in Mathematics 1-3 Credits**

A variable content course with areas of study that reflect current issues. Topics are identified in the course schedule and

4/24/2012

prerequisites are spelled out in the syllabus.

## MUSIC

### **MUSC 100**

#### **Music Recital**

**0 Credit**

All music majors are required to attend and participate in seminars and recitals each semester.

### **MUSC 101**

#### **Music Appreciation (3-0) 3 Credits**

This survey of the development of music from the Middle-Ages to the present includes an examination of the cultural forces which shaped the musical expressions of each era. The course is designed to provide the students with the musical vocabulary and listening techniques for a meaningful and enriching understanding and appreciation of music literature.

### **MUSC 102**

#### **Fundamentals of Music (3-0)**

**3 Credits**

Students interested in acquiring a working knowledge of the basic written language of music cover music notations, scales, intervals, chords and rhythms. (Fall)

### **MUSC 103**

#### **Music Theory I (3-0)**

**3 Credits**

This beginning course in music theory studies intervals, triads, four-part diatonic harmony and connection of triads and their inversions. (Prerequisite: MUSC 102 or equivalent) (Spring)

### **MUSC 104**

#### **Music Theory II (3-0)**

**3 Credits**

This is a second course in music theory, continuing the subject matter of Music 103 and extending into areas of seventh chords and non-harmonic tones. (Prerequisite: MUSC 103) (Fall)

### **MUSC 105**

#### **Elementary Class Piano I (1-2)**

**1 Credit**

For the beginning pianist, dynamic group learning introduces the keyboard. Scales, chords and the harmonization of simple melodies are studied. (Fall-Spring)

### **MUSC 106, 107, 206, 207**

#### **Chorale (0-3)**

**1 Credit**

This course is open to all college students who like to sing. Functions include preparation and performance of a large variety of works. Credit is given for participation each semester in accordance with course number sequence shown. (Fall-Spring)

### **MUSC 108, 109, 208, 209**

#### **Special Topics in Music (1-0)**

**1-2 Credit**

Subject matter not covered in other courses is studied with permission of the instructor. Repeat for a total of 4 hours. Credit accepted if the topics are different.

## **54 Course Descriptions**

(Prerequisite: permission of the instructor)  
(Upon request)

### **MUSC 112**

#### **Voice for Theatre Majors 1 Credit**

This is a course for Theatre majors who need singing skills for musicals. The course will be offered as needed. (Prerequisite: permission of the instructor).

### **MUSC 113**

#### **Ear Training and Sight Singing I**

**1 Credit**

This beginning course in ear training and sight singing studies the identification of melodic and harmonic intervals, melodic and rhythmic dictation and sight singing. (Prerequisite: MUSC 102 or equivalent) (Fall)

### **MUSC 114**

#### **Ear Training and Sight Singing II**

**1 Credit**

This course is a second course in ear training and sight singing which studies identification of primary and secondary chords, identification of figured bass, melodic and rhythmic dictation and sight singing. (Prerequisite: MUSC 113) (Fall)

### **MUSC 115**

#### **Elementary Class Piano II (1-2)**

**1 Credit**

This course is a continuation of elementary Class Piano I with the study of beginning standard piano literature. (Fall-Spring)

### **MUSC 116, 117, 216, 217**

#### **Ensembles**

**1 Credit**

Open by audition or approval of the instructor, this course provides instruction for students interested in vocal, instrumental or keyboard ensemble music. (Arranged)

### **MUSC 118, 119, 218, 219**

#### **Music-Theatre Participation**

**1-2 Credits**

This course offers credit to students who participate in music-drama productions under supervision of the music instructor. Hours are to be arranged. A maximum of four credit hours may be applied toward graduation if the course is repeated. (Prerequisite: permission of the instructor) (Arranged)

### **MUSC 190, 191, 290, 291**

#### **Chromatix (0-2)**

**1 Credit**

Open to all college students upon audition, the Chromatix performs in many areas of public relations and recruitment for the college. Varieties of performance styles are offered. (Audition Only) (Fall-Spring)

### **MUSC 195, 196, 295, 296**

#### **Community Mixed Chorus (0-4)**

**1-2 Credits**

This course welcomes all students and community residents. Weekly rehearsals are scheduled in preparation for public performance on off-schedule basis. (Upon Request)

### **MUSC 203**

#### **Music Theory III (3-0)**

**3 Credits**

This course studies part writing, modulations and harmonic analysis. (Prerequisite: MUSC 104) (Spring)

### **MUSC 213**

#### **Ear Training and Sight Singing III (1-2)**

**1 Credit**

This course studies identification of seventh chords, harmonic dictation, continuation of melodic and rhythmic dictation and sight singing. (Prerequisite: MUSC 114) (Spring)

### **MUSIC, APPLIED**

#### **Private Lessons (Open to All Students)**

**1 Credit**

MUSC 120, 121, 220, 221 Piano

MUSC 140, 141, 240, 241 Voice

MUSC 180, 181, 280, 281 Guitar

**2 Credits**

MUSC 122, 123, 232, 244 Piano

MUSC 142, 143, 242, 243 Voice

MUSC 182, 183, 282, 283 Guitar

## NURSING

### **ADN163**

#### **Nursing Concepts I**

**3 Credits**

This course provides exploration of the concepts and theories that support the nursing role. Emphasis will be on critical thinking and the nursing process. Professionalism, legal and ethical aspects of evidenced-based care will be introduced. This is an introductory course of normal growth and development from birth to the older adult. A holistic approach will be utilized encouraging the student to assess the client's physical, cultural, developmental, and psychosocial aspects of care. (Prerequisite: BIOL 152)

### **ADN 167**

#### **Clinical I (0-3)**

**1 Credit**

This course introduces the healthcare setting. The student will complete 32 hours of clinical practice in an approved medical facility, and additional simulation and dosage calculation experiences, for total of 48 contact hours. During the course the student is provided with clinical practice in providing basic nursing care for medical clients. The student will assess, plan, implement and evaluate nursing care. Legal documentation of care will be emphasized. The student will be given opportunity to develop skill in basic nursing procedures.

### **ADN 169**

#### **Nursing Interventions I (3-1)**

**3 Credits**

The focus of this course is the acquisition of knowledge and skills necessary to provide basic nursing care. Nursing procedures will be introduced during the lab component of the course. Emphasis will be on systems specific assessments and introduction of critical thinking and

problem-solving through simulated experiences. Medical terminology and professional communication will be emphasized through documentation of assessments and nursing procedures. (Prerequisite: BIOL 152; co-requisites CNA101 & CNA102 or EMT or Paramedic License)

**ADN 170**  
**Nursing Interventions II (4-1)** **4 Credits**

This course applies the principles and skills related to advanced assessment in evaluating normal client health states. Incorporation of lab and diagnostic values will be emphasized. Initial interventions related to nursing care of clients will be included. Incorporation of support systems in client care will be stressed. Continued development of nursing skills will be emphasized throughout the lab component of this course. This course includes 64 hours of didactic and 16 hours of skills labs and simulations. (Prerequisite: BIOL 252, ADN 169)

**ADN 172**  
**Family Development (2-0)** **2 Credits**  
 This course provides the principles of family-centered, maternal-newborn nursing. The course focuses on the physical, cultural, spiritual, and psychological needs of the pregnant woman, her family, and the newborn. Assessment and health promotion of the well child will be incorporated. (Prerequisite: ADN 163 & ADN 169)

**ADN 175**  
**Dosage Calculation I (1-0)** **1 Credit**  
 This course will provide introduction to basic dosage calculations. Emphasis will be placed on developing and expanding math skills as they relate to administering medications and dosage related medical terminology.

**ADN 176**  
**Dosage Calculation II (1-0)** **1 Credit**  
 This course will build on basic dosage calculations learned in Dosage Calculation I. Emphasis will be placed on calculation related to preparation of solutions, pediatric dosages, parenteral medications, enteral and intravenous infusions.

**ADN 177**  
**Clinical II (0-12)** **3 Credits**  
 This course provides 180 hours of clinical practice in basic nursing skills in addition to dosage calculation, and simulation experiences. The student will be encouraged to apply growth and development principles in assessing, planning, intervening, and evaluating nursing care. Emphasis will be on therapeutic communication and legal documentation. (Prerequisites: ADN 167)

**ADN 200**  
**Transition (LPN's only) (2-0)** **2 Credits**  
 This is a specially designed course for licensed practical nurses entering into professional nursing. This course provides essential concepts and skills to facilitate the assimilation of knowledge and incorporation of the professional nursing role. (Prerequisite: Student must be an LPN and admitted to the ADN program, BIOL 152)

**ADN 260**  
**Nursing Interventions III (4-0)** **4 Credits**  
 This course utilizes a nursing framework to plan care for the clients with altered health states throughout the life cycle. Nutritional and pharmacological aspects of care will be included. Methods of evaluating care based on expected outcomes will be emphasized. (Prerequisite: ADN 170 or ADN 200)

**ADN 263**  
**Nursing Concepts II** **2 Credits**  
 This course incorporates theories in leadership and management. Topics introduced in Nursing Concepts I will be further developed such as legalities and ethics. Collaboration, with time management, team and other health professionals, delegation, prioritization, quality improvement and professional communication will be explored. Conflict management and assertiveness training will be included. (Prerequisite: ADN 163)

**ADN 267**  
**Clinical III (0-12)** **3 Credits**  
 This course provides 180 hours of clinical experiences in addition to simulation in promoting accountability, responsibility, and communication within the health care team. Dosage calculation instruction will be provided. The student will be given the opportunity to master nursing skills in a variety of settings. (Prerequisites: ADN 177 or ADN 200)

**ADN 268**  
**Pathophysiology (3-0)** **3 Credits**  
 This course utilizes principles of adult learning and a nursing framework to relate pathophysiologic concepts to nursing care. Disease processes are discussed in terms of nursing problems. (Prerequisite: BIOL 152)

**ADN 272**  
**Psychosocial Nursing** **2 Credits**  
 This course utilized the nursing process to develop a safe plan of care for individuals with problems related to coping and adaptation throughout the life cycle. Emphasis will be on helping the student become more sensitive to human behavior and the therapeutic use of self. Pharmacological and nutritional aspects of care will be included. (Prerequisite: PSYC 101 or SOC 101, successful completion of the third semester nursing courses)

**ADN 277**  
**Clinical IV (0-12)** **3 Credits**  
 This course provides 144 hours of clinical experiences and simulation in promoting accountability, responsibility, delegation and communication within the health care team. Dosage calculation instruction will be provided. The student will be given the opportunity to master nursing skills in a variety of settings. Evidenced-based nursing care will be emphasized. (Prerequisite: ADN 267)

**ADN 279**  
**Nursing Intervention IV (3-0)** **3 Credits**  
 This course builds on the concepts introduced in Nursing Interventions III for the care of the adult medical-surgical clients with multi-system alteration. Advanced nursing skills in specialty units will be emphasized. (Prerequisite: ADN 260)

**ADN 280**  
**Advanced Pharmacology (3-0)** **3 Credits**  
 The advanced Pharmacology course offers an in-depth discussion of current medications being utilized with an emphasis on nursing responsibility in administering and monitoring them. Discussion of the way medications are absorbed, metabolized, distributed and excreted will be included. The student will review the physiology of major body systems and explore the interaction of medications with individual systems. Nursing considerations will be presented through the nursing process including nutrition, supportive care and patient teaching with application through the life span. (Prerequisites: Admission to the ADN Program or completion of an accredited licensed practical nursing program, or a Registered nurse or by permission of the instructor.)

**ADN 281**  
**Dosage Calculation III (1-0)** **1 Credit**  
 This course will provide and build on basic dosage calculations learned in Dosage Calculation I & II. With emphasis on blood modifying and metabolic dosage calculations.

**ADN 282**  
**Dosage Calculation IV (1-0)** **1 Credit**  
 This course will build on basic dosage calculations learned in Dosage Calculations 1, II and III. With emphasis on developing and expanding critical dosage calculations as related to the Critical Care Setting.

**CNA 101**  
**CNA Techniques (4-2)** **5 Credits**  
 This course is a preparatory course to enable the student to work in a hospital, clinic, nursing home, or home health care setting providing basic nursing care. This course will introduce the student to the health care delivery system, health care team work, medical observation,

4/24/2012

documentation and reporting techniques, and patient assessment. Certified nursing assistants (CNA), also known as nurse's aides, orderlies, patient care technicians and home health aides, work under the supervision of a nurse and provide assistance to patients with daily living tasks.

**CNA 102**  
**CNA Clinical Experience (1-2)**

**2 Credits**

This course is a clinical preparatory course to enable the student to gain experience in a hospital, clinic, nursing home, or home health care setting providing basic nursing care. This course requires 100 hours of clinical experience in the health care delivery system, health care team work, medical observation, documentation and reporting techniques, and patient assessment.

**CNA 103**  
**Home Health Aide (3-0) 3 Credits**

Home Health Aide teaches basic nursing care for the disabled, chronically ill, cognitively impaired, and older adults who may need assistance living in their own homes or in residential facilities. The basic nursing skills taught include communication skills, infection control, safety and emergency procedures, and basic personal care skills. (Co-requisite: CNA 104)

**CNA 104**  
**Home Health Aide Clinical (0-2.5)**

**1 Credit**

Home Health Aide Clinical provides practical experience for the student in basic nursing care for the disabled, chronically ill, cognitively impaired, and older adults who may need assistance living in their own homes or in residential facilities. This includes communication skills, infection control, safety and emergency procedures, and basic personal care skills. This course requires 40 hours of clinical field work. (Co-requisite: CNA 103)

**CNA 106**  
**Phlebotomy Techniques (2-2)**

**3 Credits**

Phlebotomy Techniques is a course that introduces the student to phlebotomy, proper venipuncture procedures, and laboratory tests. The course will be conducted as a combination lecture/lab class where students are introduced to the concept and then given opportunity to develop the basic skills.

**CNA 107**  
**EKG (2-2) 3 Credits**

EKG is a course that introduces the student to electrocardiography (EKG), proper lead placement, and normal and abnormal heart rhythms. The course will be conducted as a combination lecture/lab class where students are introduced to the concept and given the opportunity to develop the basic skills.

**56 Course Descriptions**

**CNA 110**  
**Restorative Nurse Assistant (1-2)**

**2 Credits**

The Restorative Nurse Assistant (RNA) is an expanded role for the Certified Nurse Assistant. The RNA acquires special knowledge, skills, and techniques in therapeutic rehabilitation as prescribed and supervised by licensed personnel. (Prerequisites: CNA 101; CNA 102 or Active CNA Certification)

**CNA 111**  
**Restorative Nurse Assistant Clinical Experience (0-2.5) 1 Credits**

The RNA 102 course is a clinical preparatory course to enable the student to gain 40 hours of clinical experience in a hospital, clinic, nursing home, or health care setting providing basic restorative nursing care. (Prerequisites: CNA 101; CNA 102 or Active CNA Certification)

**CNA 120**  
**Certified Medication Technician (3-2)**

**4 Credits**

The Certified Medication Technician course is an expanded role of the Certified Nurse Assistant. This course is a preparatory course to prepare the individual for employment as a certified medication technician in an intermediate care or skilled facility. This course teaches skills in administration of nonparenteral medications that will qualify students to perform this procedure to assist licensed practical nurses or registered professional nurses in medication therapy. (Prerequisites: CNA 101; CNA 102 or Active CNA Certification)

## PHARMACY

**PHAR 101**  
**Pharmacy Techniques I (2-2)**

**3 Credits**

Upon completion of this course the student will possess the minimum knowledge base or competency to assist pharmacists in the preparation of prescriptions. (Prerequisites: HS Diploma or GED. Eligible to register to take a National certification exam)

**PHAR 102**  
**Pharmacy Techniques II (3-0)**

**3 Credits**

Upon completion of this course the student will possess the knowledge base or competency to assist pharmacists in the preparation of prescriptions. The student will meet all the requirements to take a National certification exam. (Prerequisites: PHAR 101)

**PHAR 110**  
**Pharmacology Concepts (0-7.5)**

**3 Credits**

Upon completion of this course the student will possess the knowledge base of competency to dispense medications. Ethical and legal concepts will be introduced.

**PHAR 150**  
**Pharmacy Tech Internship (1-4)**

**3 Credits**

Supervised work experience allows the student to apply skills in an actual pharmacy situation. Students will be required to gain experience in the area in which they are seeking a certificate. Students will complete coursework and 80 hours of supervised work experiences during the semester. (Co-requisite of PHAR 102)

## PHILOSOPHY

**PHIL 101**  
**Introduction to Western Philosophy (3-0) 3 Credits**

A reading prerequisite is in recognition that good reading skills are necessary for this course. The course introduces students to the philosophical questions posed by western thinkers and the impact of these ideas on the wider culture and history, and will include readings taken from ancient Greeks to modern philosophers. The course partially fulfills requirements for humanities general education. (Prerequisite: Reading at least Reading Level 1.)

**PHIL 110**  
**Critical Thinking (3-0) 3 Credits**

This course teaches the art of critical thinking and informal logic in examining the messages in all kinds of discourse: media, politics, values conflicts, and personal conversation. It teaches the ability to evaluate and manage claims for truth, and how to effectively engage others in positive and productive argumentation. The course examines theories of ethics and values, and methods of discourse with others regarding issues an ethics and values. This is an introductory course and fulfills requirements for General Education in either Humanities or Social Sciences. # (Prerequisite: Reading at least at Reading Level 1.)

**PHIL 121**  
**World Religions (3-0) 3 Credits**

Students survey and compare the great world religions emphasizing concepts of God, creation, humanity, scripture, ethics and salvation. Emphasis is placed on the relationship between religious beliefs and other elements of society and culture. This rational and historical analysis concentrates on Hinduism, Buddhism, Jainism, Sikhism, Confucianism, Taoism, Shinto, Zoroastrianism, Judaism, Christianity, Islam, and Baha'i. It also includes an introduction to some basic indigenous religions of Native America and Africa. Students successfully completing this course may apply the hours to partial fulfillment of the general education requirement in either Humanities or Social Sciences but not both simultaneously.



**PHIL 201****Logic (3-0)****3 Credits**

The methods and principles used in distinguishing sound from faulty reasoning, both deductive and inductive, are examined. Students successfully completing this course partially fulfill Humanities general education requirements. # (Prerequisite: Reading at least at Reading Level 1.) (Upon request)

**PHIL 202****Ethics (3-0)****3 Credits**

PHIL 202 surveys various ethical systems and explores personal moral attitudes and the ethical struggles in modern society. Students successfully completing this course partially fulfill Humanities general education requirements. # (Prerequisite: Reading at least at Reading Level 1.) (Upon request)

\*\*\*\*\*

**\*#NOTE: Reading Level 1 is reading at least the 10<sup>th</sup> grade level or have completed LOC 50. Reading at the College Level is reading at least the 12<sup>th</sup> grade level or have completed LOC 90**

## PHYSICAL EDUCATION

The following courses meet physical education activity graduation requirements.

**PE 102****Volleyball, Softball (0-2)****1 Credit**

A brief history and instruction of foundations in volleyball and softball are presented to promote continued fitness through sports. (Upon request)

**PE 103****Bowling (0-2)****1 Credit**

A brief history of bowling is followed by fundamentals of scoring. Instruction will be given in correct grips, stance, footwork and basic approach and release. (Additional bowling alley fee assessed.) (Fall-Spring)

**PE 104****Rhythmic Aerobics (0-2) (Dance)****1 Credit**

This general fitness class is designed to guide each student toward physical fitness and weight control through group exercise to music. (Note: prerequisite for PE 204 is PE 104; these courses should be taken in sequence.) (Fall-Spring)

**PE 105****Weight Training (0-2)****1 Credit**

This course is designed to assist participating students in maintaining and improving their general physical conditioning. The class emphasizes cardiovascular and muscular endurance, strength and flexibility through conditioning exercises and body mechanics. Daily activities include jogging and weight lifting to present a well-rounded program to students. (Fall-Spring)

**PE 110****Golf (0-2)****1 Credit**

A brief history is followed by practice in the fundamental skills of golf. Scoring, strategy and rules are also taught. College facilities and the local golf course are utilized. (Additional golf fee may be assessed.) (Fall-Spring)

**PE 111****Lifetime Activities (0-2)****1 Credit**

This course acquaints students with a wide variety of activities that can be enjoyed throughout their lifetime. The following individual and group lifetime activities are covered: walking, bowling, badminton, volleyball, whiffle ball, table tennis, pickle ball and Frisbee. (Fall)

**PE 113****Lifetime Fitness and Wellness (1-1)****2 Credits**

This course provides contemporary information about the beneficial effects of a positive healthy lifestyle and how to implement and live such a lifestyle through lecture, lab work, and weight workouts. General topics covered include cardiovascular fitness, posture, flexibility, agility, muscle tone, strength, endurance, diet and exercise. (Fall-Spring)

**PE 114****Badminton and Table Tennis (0-2)****1 Credit**

A brief history of each activity is followed by practice in the fundamental skills of badminton and table tennis. Scoring, strategy and rules are also taught. (Spring)

**PE 116, 216****Self Defense and Advanced Self Defense (0-2)****1 Credit**

This course acquaints students with the basic elements of a wide variety of self-defense techniques including elements of Tae Kwon Do, Aikido, Hapkido, and other martial arts. Course work includes warm-up activities such as stretching and exercise, drills and practice of techniques individually and with partners. (PE 116 is a prerequisite for PE 216; the courses should be taken in sequence.) (Fall-Spring)

**PE 117****Walking for Fitness****1 Credit**

Walking for Fitness is a low impact, outdoor activity class. It is designed to guide students toward better physical fitness through structured walking activities. The course will cover health-related topics such as heart rate (resting and target), weight management, pedometer usage, flexibility, caloric requirements and expenditures, body composition, stretching, and basic nutrition. (Upon Request)

**PE 144****Introduction to Tae Kwon Do (0-2)****1 Credit**

This course is the introduction to the history, discipline, skills and training

involved in the study and practice of Tae Kwon Do. (Fall-Spring)

**PE 145****Beginning Tae Kwon Do (0-2)****1 Credit**

This course is the continuation of the series of courses in Tae Kwon Do and provides the opportunity for continued growth and advancement in the art. (Prerequisite: PE 144) (Fall-Spring)

**PE 204****Advanced Rhythmic Aerobics (0-2) (Dance)****1 Credit**

This general fitness class is designed to guide each student toward physical fitness and weight control through group exercise to music. (Prerequisite: PE 104. PE 104 and 204 should be taken in sequence.) (Fall-Spring)

**PE 205****Advanced Weight Training (0-2)****1 Credit**

This course is designed to assist participating students in maintaining and improving their general physical conditioning. The class emphasizes cardiovascular and muscular endurance, strength and flexibility through conditioning exercises and body mechanics. Daily activities include jogging and weight lifting to present a well-rounded program to students. (Prerequisite: PE 105) (Fall-Spring)

**PE 244****Intermediate Tae Kwon Do (0-2)****1 Credit**

This course is the continuation of the series of courses in Tae Kwon Do and provides the opportunity for continued growth and advancement in the art. (Prerequisite: PE 145) (Fall-Spring)

**PE 245****Advanced Tae Kwon Do (0-2)****1 Credit**

This course is the continuation of the series of courses in Tae Kwon Do and provides the opportunity for continued growth and advancement in the art. (Prerequisite: PE 244) (Fall-Spring)

\*\*\*\*\*

The following lecture courses will not meet PE activity graduation requirements.

**PE 115****First Aid (2-0)****2 Credits**

This course will teach students how to give immediate care to a person who has been injured or suddenly taken ill. The course includes self-help and home care if medical assistance is unavailable or is delayed. (Fall)

**PE 120****Introduction to Health, Physical Education & Recreation (2-0)****2 Credits**

This course is to acquaint students with the principles, objectives, methods, subject

4/24/2012

matter and career materials in Physical Education. (Fall)

#### **PE 125**

##### **Athletic Training (2-0) 2 Credits**

Instruction is given in the prevention and care of athletic injuries, including taping, massage, exercise and other training techniques. (Spring)

#### **PE 142**

##### **Personal and Community Health (3-0) 3 Credits**

Topics in this class include the study of emotional health, drugs and drug abuse, human sexuality, the care and prevention of common diseases, body systems, analysis of health problems and proper nutrition. (Fall-Spring)

#### **PE 150**

##### **Psychological Aspects of Physical Activity and Sports (2-0) 2 Credits**

This course will teach students the value of physical activities and sports in society through the development of the following personal characteristics: learning how to participate in sports anxiety-free, learning how to reach peak performance, learning how to maintain consistent quality performance, and learning how to win and lose. (Fall)

#### **PE 160**

##### **Coaching Methods I (Basketball) (2-0) 2 Credits**

The various facets of organizing and managing a school basketball program are taught. Areas of concentration involve systems of offense and defense, special game situations, organizing practices and teaching fundamental skills of the game. (Fall)

#### **PE 206, 207**

##### **Physical Education for Athletes (Men) (Women) 1 Credit**

This class is designed for varsity participation and preparation in basketball, soccer, baseball, and softball. This class is for sophomores only. PE 206 must be taken in the fall semester followed by PE 207 in the spring semester. (Fall-Spring)

#### **PE 260**

##### **Coaching Methods II (Baseball/Softball) (2-0) 2 Credits**

The study of school baseball/softball program organization and management through basic concepts of individual and team offense and defense are taught. Game situations, organization, practices, and fundamental skills are covered. (Spring)

#### **PE 295**

##### **Health, Physical Education, Recreation (HPER) Field Exp. (0-4) 2 Credits**

This internship gives students on-the-job experience and training in HPER. All phases of the program and administration are emphasized, including working with the local schools and recreation departments. (Upon request)

## **58 Course Descriptions**

#### **PE 197**

##### **Topics in Physical Education**

**1 Credit**

This is a variable content course with topics that can change from semester to semester. Topics will be chosen each semester depending upon student requests and needs, and will be published in the schedule of classes. Topics may include but are not limited to: modern dance, swimming, outdoor education, basketball, tennis, racquetball, soccer, soft aerobics, etc. The course may be repeated if the topic is different. (Upon request)

## **PHYSICS AND PHYSICAL SCIENCE**

#### **PHYS 101**

##### **Survey of Physical Science (4-2)**

**5 Credits**

The basic principles and interrelations between physics, chemistry, earth science and astronomy are examined in this class. The course satisfies part of the general education science requirement for the Associate in Arts degree. (Fall-Spring-Summer)

#### **PHYS 104**

##### **Technical Physics (2-4) 4 Credits**

This course will present an observational and algebra-level examination of the basic principles and common applications of physics that are appropriate for mechanical, fluid, electrical and thermal systems. The class provides a basic background in physical principles for technology majors. Basic trigonometric concepts will be introduced as needed. (Prerequisites: MATH 104 or MATH 100)

#### **PHYS 190**

##### **General Physics I (4-2) 5 Credits**

General Physics I is a calculus level course that examines the principles and applications of classical mechanics and thermodynamics. This class is intended for students majoring in engineering, the physical sciences, mathematics and computer science. (Prerequisites: MATH 150) (Corequisite: MATH 160 or one-semester MATH 150/160 sequence concurrently with PHYS 190) (Spring)

#### **PHYS 210**

##### **General Physics II (4-2) 5 Credits**

General Physics II continues study initiated in Physics 190. The topics covered are electricity and magnetism, optics and elements of modern physics. This course is intended for students majoring in engineering, the physical sciences, mathematics and computer science. (Prerequisite: PHYS 190, MATH 150 AND 160) (Fall)

#### **PHYS 250**

##### **Statics (3-0)**

**3 Credits**

Statics is a course for engineering majors that examines two and three-dimensional mechanical systems under equilibrium

conditions. (Prerequisites: PHYS 190, MATH 150, and MATH 160) (Spring)

#### **PHYS 271, 272, 273**

##### **Topics in Physics 1-3 Credits**

A variable content course with areas of study that reflects current issues. Topics are identified in the course schedule and prerequisites are spelled out in the syllabus.

## **POLITICAL SCIENCE**

#### **PLSC 102**

##### **Missouri Constitution (1-0) 1 Credit**

This survey of state and local government in Missouri includes the study of the state constitution and the political process and structures at the state and local levels. (This class is designed only for students who are transferring in the equivalent of PLSC 103 or HIST 106 from a non-Missouri accredited college.) Successful completion of this course meets the State of Missouri constitution general education requirement for such students. (Prerequisite: Reading at least at college level.) (Online or Individualized instruction and by permission of the instructor only.) (Fall-Spring)

#### **PLSC 103**

##### **National, State, Local Government (3-0) 3 Credits**

PLSC 103 introduces the basic principles and structures of the American national government, and state and local government organizations and functions. Emphasis is placed on constitutional development and interpretation; the place of government in the social process; and the function of the executive, legislative, and judicial branches. Successful completion of PLSC 103 fulfills the State of Missouri constitution requirements and partially fulfills Social and Behavioral Science general education requirements. (Prerequisite: Reading at least at college level.) (Fall - Spring - Summer)

#### **PLSC 104**

##### **National, State, Local Government Honors (3-1) 3 Credits**

This is a political science class designed for Honors students. The course content is the same as Political Science 103 except that this class is writing intensive and when appropriate, more varied instructional techniques will be used in this class. Fulfills the State of Missouri constitution requirements and partially fulfills Social and Behavioral Science general education requirements. (Prerequisite: Admission to Honors Program or consent of the instructor. Reading at least at college level.) (Spring)

#### **PLSC 111, 112, 113**

##### **Topics in Political Science (1-3)**

**1-3 Credits**

These courses provide an opportunity to study selected Political Science topics not covered in the Political Science curriculum

or to study in greater depth, topics addressed in introductory Political Science courses. The content of these courses may vary from semester to semester and some may require a prerequisite. Check with the Division Chair, instructor or advisor regarding prerequisites for a specific topics course. These courses will transfer but may or may not meet specific degree or program requirements at other institutions (Prerequisite: Reading at least at Reading Level 1) (Offered on demand).

#### **PLSC 201**

##### **Contemporary Political Activities of the U.S. (1-2) 2 Credits**

This course follows the most important problems, activities and functions of the United States government with emphasis on the political nature of the matter under consideration. # (Prerequisite: (Reading at least at Reading Level 1.)) (Upon request)

#### **PLSC 205**

##### **Introduction to Political Science (3-0) 3 Credits**

This course offers an introduction to the principles and problems related to the study of government and politics in today's world. The course provides students with a framework for the study of politics and introduces students to the various political science sub-fields including: comparative politics, international relations, political economy, and political philosophy. This course partially fulfills the Social and Behavioral Science General Education requirements for the Associate of Arts degree. (Prerequisite: PLSC 103, 104 or equivalent, or permission of the instructor.)

## **PSYCHOLOGY**

#### **PSYC 101**

##### **General Psychology (3-0) 3 Credits**

An introduction to the scientific study of human behavior including motivation, perception, learning, emotions, intelligence and the physiological basis of behavior is presented. Successful completion of this course partially fulfills Social and Behavioral Science general education requirements. (Fall-Spring-Summer)

#### **PSYC 110**

##### **Psychology of Personal Adjustment (3-0) 3 Credits**

This study of the development of the self and problems of adjustment emphasizes effective methods of coping with stress and improving interpersonal relationships through discussion, research and group dynamics. Successful completion of this course partially fulfills Social and Behavioral Science general education requirements. (Prerequisite: PSYC 101, Reading at least at Reading Level 1.) (Fall-Spring)

#### **PSYC 205**

##### **Introduction to Autism and Applied Behavior Analysis (3-0) 3 Credits**

This course is intended as an introduction to the field of Applied Behavior Analysis

(ABA) with a focus on autism spectrum disorders. This course will provide students with a strong foundation in the basic concepts and principles of ABA, as well as the history and philosophical assumptions of behavior analysis autism spectrum disorders.

#### **PSYC 206**

##### **Ethics, Assessment and Intervention (3-0) 3 Credits**

This course will expand student's understanding of behavior analysis and teach students to identify the relationship between specific events and behavior. While preparing students to practice ethical professional behavior, students will learn to identify the type and source of reinforcement for challenging behaviors as the basis for intervention efforts designed to decrease the occurrence of undesirable behavior or increase the occurrence of desirable behaviors.

#### **PSYC 207**

##### **Evaluation, Measurement & Interpretation (3-0) 3 Credits**

This course focuses on identifying the dimensions by which behavior can be measured and identifying and using appropriate observational methods based on procedures and methods and displaying and interpreting behavioral data.

#### **PSYC 208**

##### **Behavior Change and Systems Support (3-0) 3 Credits**

This course focuses on the strategies applied behavior analysts use to increase appropriate behaviors, achieve desired stimulus controls, teach new behaviors and decrease problem behaviors. Students will learn to design, implement, and evaluate interventions that produce behavior change that continues after the intervention is terminated, appear in relevant settings and/or spread to other behaviors that were not taught directly.

#### **PSYC 210**

##### **Child Psychology (3-0) 3 Credits**

This study of the origin and development of intellectual, emotional and physical growth of children from birth to adolescence emphasizes problems of child rearing, education and social action. (Prerequisite: PSYC 101) Successful completion of this course partially fulfills Social and Behavioral Science general education requirements. # (Prerequisite: Reading at least at Reading Level 1.) (Fall-Spring)

#### **PSYC 215**

##### **Adolescent Psychology (3-0) 3 Credits**

Psychological principles for understanding of adolescent behavior are presented. Students study intellectual, emotional and physical growth from puberty to adulthood. (Prerequisite: PSYC 101) Successful completion of this course partially fulfills Social and Behavioral Science general education requirements. # (Prerequisite:

Reading at least at Reading Level 1.) (Fall-Spring)

#### **PSYC 290**

##### **Clinical I-Supervised Field Experience (3-0) 3 Credits**

This course will provide students the experience of practicing applied behavior analysis techniques (e.g. conducting functional behavior assessments, developing and implementing behavior intervention plans, monitoring behavior intervention plans and making informed decisions). This course requires 80 hours of on-site work.

#### **PSYC 292**

##### **Clinical II-Supervised Field Experience (3-0) 3 Credits**

This course will provide students the experience of practicing applied behavior analysis techniques (e.g. conducting functional behavior assessments, developing and implementing behavior intervention plans, monitoring behavior intervention plans and making informed decisions). This course requires 80 hours of on-site work

#### **Educational Psychology (3-0)**

(See EDUC 230)

## **SOCIOLOGY**

#### **SOC 101**

##### **General Sociology (3-0) 3 Credits**

This introduction analyzes groups, institutions and individual behavior in group environments. Successful completion of this course partially fulfills Social and Behavioral Science general education requirements. (Fall-Spring)

#### **SOC 103**

##### **Marriage and the Family (3-0) 3 Credits**

This course focuses on a cross-cultural comparative analysis of marriage practices and family structures. Emphasis is placed on the role and scope of the family in contemporary American society. Successful completion of this course partially fulfills Social and Behavioral Science general education requirements. # (Prerequisite: Reading at least at Reading Level 1.)

## **SOCIAL WORK**

#### **SOC 104**

##### **Introduction to Social Work (3-0) 3 Credits**

Social work methods and processes, case work, group work, community organization, research and social action are examined. Theory and application of social work as a way of understanding and helping people are also discussed. # (Prerequisite: Reading at least at Reading Level 1.)

4/24/2012

## **SOC 105**

### **Basic Counseling Skills (3-0)**

**3 Credits**

Basic human services knowledge and process skills applicable to case work, group work, community organization, research and social action are examined. Content will emphasize ethics, communication skills, interviewing techniques assessment of client's needs, problem identification skills, client rights, and development of client goals and objectives. # (Prerequisite: Reading at least at Reading Level 1.)

## **SOC 150, 250**

### **Topics in Social Work (1-0)**

**1-3 Credits**

This course involves the study of selected social science topics that require greater emphasis, different methodology, or are not covered in regular classes. # (Prerequisite: Reading at least at Reading Level 1.) (Upon request)

\*\*\*\*\*

**\*#NOTE: Reading Level 1 is reading at least the 10<sup>th</sup> grade level or have completed LOC 50. Reading at the College Level is reading at least the 12<sup>th</sup> grade level or have completed LOC 90**

## **SPEECH**

### **SPCH 101**

#### **Fundamentals of Speech (3-0)**

**3 Credits**

Fundamentals of Speech is an introduction to the fundamentals of effective public speaking and listening. The course is designed to develop confidence in self-expression and interpersonal communications. Speech 101 includes preparing, organizing and delivering oral messages within a variety of real life situations of communication. Audience analysis, the listening process and clarity of expression are emphasized. (Prerequisite: ELI 35, if required by Crowder College's standard Admission testing procedures) (Fall-Spring-Summer)

## **THEATRE**

*Note: Only four hours of Theatre Practicum (Performance or Technical, not four hours of each) may be applied toward graduation.*

### **TA 105**

#### **Acting I (3-0)**

**3 Credits**

This course is designed to free the body and voice as well as the imagination and creativity of the student. This course's purpose is to allow the student to become free from inhibitions when performing on stage. A series of exercises will be utilized to accomplish these goals as well as monologue and scene work to polish the skills of the actor. (Fall)

### **TA 106, 107, 206, 207**

#### **Theatre Practicum, Performance (1-0)**

**1 Credit**

Students cast in departmental production(s) may receive credit for their participation as actors. A minimum of 30 hours in rehearsal, performance and strike is required. This course may be repeated for credit with four hours to be applied toward graduation. (Prerequisite: permission of instructor) (Fall-Spring-Summer)

### **TA 115**

#### **Stagecraft (3-0)**

**3 Credits**

Students study backstage work through an examination of the materials, techniques and conventions of stage construction and show production. The course will introduce the practical aspects of properties, scenery, painting, lighting, sound, electronics, and drafting. Thirty (30) hours of practical experience are required during the semester. (Spring)

### **TA 116, 117, 216, 217**

#### **Theatre Practicum, Technical (0-3)**

**1 Credit**

Students may receive credit for their participation in technical aspects of departmental productions when not currently participating for credit in another theatre course. A minimum of thirty (30) hours of theatre participation is required in lighting/sound, scenery construction, costumes, props, stage management, or any combination. This course may be repeated for credit for a maximum of four hours applied toward graduation. # (Prerequisite: permission of instructor) (Fall-Spring-Summer)

### **TA 125, 225**

#### **Summer Theatre (3-0)**

**3 Credits**

Students serve as active members of the Crowder Summer Theatre Company. They serve as actors, designers and technicians in each summer theatre production. Thirty (30) hours of practical experience are required during the semester. (Summer)

### **TA 180**

#### **Stage Makeup (3-0)**

**3 Credits**

Basic techniques in design and application of stage makeup are presented as well as proper care and sanitation of all materials. Students learn materials and methods as well as fundamental theory for the development of dramatic characters through stage makeup. (Fall)

### **TA 205**

#### **Introduction to Theatre (3-0)**

**3 Credits**

Theatre organization, stage technique and representative plays from Greek to modern drama are introduced. Emphasis is placed on the theatre as a living art form. This course partially fulfills general education humanities requirements. (Fall-Spring-Summer)

### **TA 210**

#### **Oral Interpretation (3-0)**

**3 Credits**

Techniques to present prose, poetry, dramatic and children's literature for an audience will be examined. Selection, analysis and preparation of different types of literature with emphasis on platform presentation of solo and interpreters' theatre will be emphasized. (Spring)

### **TA 150, 151, 152, 250, 251, 252**

#### **Topics in Theatre (1-4)**

**1-4 Credits**

A variable content course with topics that can change from semester to semester focusing on areas of theatre not offered in the general theatre curriculum. Topics are identified by title in the class schedule. This course may be repeated if the topic is different.

## **TRANSPORT TRAINING**

### **TRDR 101, 102**

#### **Transport Training (13-0) 13 credits**

This course offers the student entry-level knowledge and skills necessary to operate a tractor-trailer vehicle safely, efficiently and economically. The students' training will consist of various techniques of instruction including classroom training, driving on a controlled paved range, backing range, as well as highway and city driving. The tractor-trailers used in training students are comparable to what is used by the trucking industry today.

## **VETERINARY TECHNOLOGY**

### **VETC 101**

#### **Introduction to Veterinary Technology (2-0) 2 credits**

This course is an introduction to veterinary science. It will begin with a brief study of the profession of Veterinary Technology. Basic cell structure, tissue types, and body systems will then be covered, with practical application to common animal diseases. Animal hospital procedures and animal handling will be introduced. This course will serve as basic preparation for those interested in working in veterinary medicine or having an interest in application to the Veterinary Technology program at Crowder College. (It is recommended that students take biology or zoology before or at the same time that this course is taken)

\*\*\*\*\*

**\*#NOTE: Reading Level 1 is reading at least the 10<sup>th</sup> grade level or have completed LOC 50. Reading at the College Level is reading at least the 12<sup>th</sup> grade level or have completed LOC 90**

**VETC 110****Sanitation and Animal Care (2-0)****2 credits**

As an introduction to sanitation, disinfectants, sterilization, and zoonotic diseases and how they relate to public health, this course includes parasitology, cleaning and sterilization sanitation of equipment and facilities, and procedures in patient care. Antiinfective drugs are introduced. Material Safety Data Sheets and OSHA regulations are also discussed. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 120****Veterinary Hospital Technology I (1.5-3)****3 credits**

As an introduction to anesthetics and surgical assisting, the course includes bandaging, casting, surgical preparations, monitoring, and post-operative procedures, parenteral fluid administration and intravenous hookups. Drugs affecting the nervous and cardiovascular systems are discussed, along with the basics of pharmacology.

(Prerequisite: Admittance to the Veterinary Technology program)

**VETC 130****Clinical Pathology Techniques I (1.5-3)****3 Credits**

This course is an introduction to laboratory procedures including clinical chemistries, hematocrits, complete blood counts, differentials, and urinalysis.

(Prerequisite: Admittance to the Veterinary Technology program)

**VETC 140****Companion Animal Technology (2-2)****3 Credits**

In addition to instruction in restraint and handling of dogs, cats, this course also includes the study of common canine and feline diseases, small animal parasites, medical terminology, identification of breeds, discussion of commonly used medications, bathing and basic grooming techniques, blood collection, specimen collection, and common laboratory techniques. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 180****Anatomy and Physiology of Animals (2-4)****4 credits**

This course includes basic principles of anatomy using a systemic and comparative approach, as well as instruction in physiology as it relates to anatomy and applicable pathology. Instruction in anatomic landmarks, interrelationships, and terminology is essential to this course. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 220****Veterinary Hospital Technology II (1.5-3)****3 Credits**

This course includes administration of anesthetics, surgical assisting and patient monitoring, bandaging, casting, blood

transfusions, variations in surgical preparations, and postoperative care. Emergency treatments will be discussed in greater detail. Pharmacology of various classes of drugs will also be included. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 230****Laboratory Animal and Avian Technology (1-2)****2 Credits**

Students will study basic anatomy and diseases of laboratory animals and birds, as well as develop skills in handling, performing laboratory testing, and treatment of these species. Handling and diseases of some exotic/other species will be discussed. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 250****Clinical Pathology Techniques II (1.5-3)****3 Credits**

This course includes the theory and performance in hematology, urinalysis, and cytology with the introduction to simple immunologic tests, blood coagulation tests and bone marrow evaluation. Collection and identification of fungal pathogens are performed. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 263****Large Animal Med/Surg (1.5-3)****3 Credits**

This course emphasizes techniques necessary to assist the veterinarian in a large animal or mixed practice and in research facilities. Bovine, equine, porcine, ovine, and caprine medicine and management including restraint, blood collection, medicating, and nursing techniques are included. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 270****Board Examination Review (1-0)****1 Credit**

Students will systematically review all course material covered in previous semesters to aid in preparation for the national and state board examinations, improving the understanding of all program materials. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 280****Radiology and Electronic Procedures (1-2)****2 Credits**

This course is a study and practice in radiological techniques, radiographic exposure techniques, film processing, contrast radiography, as well as ultrasound technology. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 284****Veterinary Technician Internship (0-4)****4 Credits**

This course consists of 240 hours in which the student works for a professional veterinary institution. The student will apply his or her training in an occupational

setting, applying previously learned skills and knowledge to the work place. Evaluation forms are completed by the cooperating establishment. This course is offered for P/F grade only. (Prerequisite: Admittance to the Veterinary Technology program)

**VETC 285****Vet Tech Clinical Experience I (0-2.5)****1 Credit**

This course consists of 40 hours in which the student works with a veterinarian in a clinical setting as a first or second year vet tech student. The student will apply previously learned skills and knowledge to the work place. At the end of the experience, the student will write a paper discussing the pros and cons of this experience. Evaluation forms will also be completed by the supervising veterinarian. This course is offered for a pass/fail grade only.

**VETC 286****Vet Tech Clinical Experience II (0-2.5)****1 Credit**

This course consists of 40 hours in which the student works with a veterinarian in a clinical setting as a second year vet tech student. The student will apply previously learned skills and knowledge to the work place. At the end of the experience, the student will write a paper discussing the pros and cons of this experience. Evaluation forms will also be completed by the supervising veterinarian. This course is offered for a pass/fail grade only.

## WELDING

**WELD 113****Introduction to Welding (2-2)****3 Credits**

This course is designed to introduce the student to the basic operation of Shielded Metal Arc Welding ("Stick" Welding), Gas Metal Arc Welding (formerly M.I.G. Welding), Gas Tungsten Arc Welding (formerly T.I.G. Welding) and Thermal Cutting. Fee for materials and supplies. (Corequisite: MATH 40 or MATH 60 or appropriate placement by ACT/COMPASS testing, COMM 80 or Appropriate placement by ACT/COMPASS testing)

**WELD 145****Gas Metal Arc Welding-GMAW (2-2)****3 Credits**

This course is designed to provide the concepts, procedures, and operational hands-on practice necessary to perform gas metal arc welding (GMAW), formerly known as Metal Inert Gas (M.I.G.) welding. Fee for materials and supplies. (Prerequisite: WELD 113 or Permission of Instructor, Co-requisites MATH 50 or MATH 70 or appropriate placement by ACT/COMPASS testing)

4/24/2012

**WELD 197, 198, 199, 297, 298, 299**

**Topics in Welding Technology**

**(0-8 to 3-0) 1-3 credits**

This is a variable content course with areas of study that reflect current needs of individual students in the area of Welding Technology. Topics are identified in the course description. Fee for materials and supplies. (Prerequisite: Permission of instructor)

**WELD 150**

**Gas Tungsten Arc Welding-GTAW**

**(2-2) 3 Credits**

This course is designed to provide the concepts, procedures, and operational hands-on practice necessary to perform gas tungsten arc welding (GTAW), formerly known as Tungsten Inert Gas (T.I.G.) welding. Fee for materials and supplies. (Prerequisite: WELD 113 or Permission of Instructor, Co-requisites: MATH 50 or MATH 70 or appropriate placement by ACT/COMPASS testing)

**WELD 155**

**Shielded Metal Arc Welding-SMAW (2-2)**

**3 Credits**

This course is designed to provide the concepts, procedures, and operational hands-on practice necessary to perform shielded metal arc welding (SMAW), formerly known as "Stick" welding or traditional ARC welding. Fee for materials and supplies. (Prerequisite: WELD 113 or Permission of Instructor, Co-requisites: MATH 50 or MATH 70 or appropriate placement by ACT/COMPASS testing)

# ASSOCIATE OF ARTS DEGREE

## General Requirements

To graduate with the Associate in Arts Degree, a student must meet the following requirements:

- A.** Earn a minimum of 61 semester hours of credit. Of these, at least 15 of the last 30 semester hours must be earned in courses provided by Crowder College.
- B.** Earn a cumulative grade point average of 2.0 (C) or higher in all college courses attempted.
- C.** Complete an approved curriculum.
- D.** Fulfill the following General Education requirements.

Orientation: One (1) credit hour (this course is required of all new students at Crowder within the first 9 credits taken. This requirement will be waived for transfer students who have completed at least 12 credit hours with at least a 2.0 GPA.)

COLL 101

Communications: Nine (9) credit hours

ENGL 101

ENGL 102

SPCH 101

(ENGL 103 may be taken in place of ENGL 101 and 102)

Social and Behavioral Science: Nine (9) credit hours from at least two disciplines and must include HIST 106 or PLSC 103 or PLSC 104 (Missouri Constitution requirement). **Please note:** *Students who transfer in the equivalent of HIST 106 or PLSC 103 from out-of-state institutions must take HIST 106, PLSC 103, PLSC 104, or PLSC 102 (1 hour Constitution) to fulfill the Missouri Constitution requirement.*

If PLSC 103 or PLSC 104 is taken, then one social science course must be taken from the following: ECON 202, PHIL 121, HIST 101, HIST 102, HIST 106, HIST 107, or SOC 101.

If HIST 106 is taken, then one social science course must be taken from the following: ECON 201, ECON 202, GEOG 101, PHIL 121, PSYC 101, or SOC 101.

The third social science course may be taken from the following: ECON 201, ECON 202, GEOG 101, HIST 101, HIST 102, HIST 106, HIST 107, PHIL 110, PHIL 121, PLSC 103, PLSC 104, PLSC 205, PSYC 101, PSYC 210, PSYC 215, SOC 101, or SOC 103.

Science: Ten (10) credit hours, including a least one (1) course with a laboratory component.

One course must be a physical science: CHEM 101, CHEM 104, CHEM 111, PHYS 101, PHYS 190, or GEOL 115.

One science course must be a life science: BIOL 101

Mathematics: Three (3) credit hours.

MATH 107, 111, or 150 and 160

Humanities: Nine (9) credit hours.

One course must be taken from the fine arts group: ART 101, MUSC 101, or TA 205.

One course must be taken from the literature group: ENGL 109, ENGL 120, or ENGL 125.

The third course may be taken from either of the above groups or from the following list: ASL 101, ASL 102, FREN 101, HIST 101, HUM 102, HUM 103, PHIL 101, PHIL 110, PHIL 121, PHIL 201, PHIL 202, SPAN 101. (Note: HIST 101, PHIL 110, and PHIL 121 may fulfill the requirements for either social science or humanities, but not both.)

Physical Education: Two (2) credit hours

PE 102, PE 103, PE 104, PE 105, PE 110, PE 111, PE 113, PE 114, PE 116, PE 117, PE 135, PE 144, PE 145, PE 204, PE 205, PE 216, PE 244, PE 245.

General Electives: Eighteen (18) credit hours

Any college-level course listed in the Description of Courses in the college catalog can apply to the general electives; however, students should consult their advisors about applicability of courses toward the baccalaureate degree.

\*Prerequisite requirement. Course must be completed before you take a more advanced course in the same field. English Composition I is a prerequisite for English Composition II, for instance.

\*\* Course meets partial physical education requirement

## ASSOCIATE OF ARTS DEGREE

**Addictions Counseling**

The Addictions Counseling program will prepare students for employment and state certification in Substance Abuse Counseling and/or Certified Criminal Justice Addictions Professional. Students may also use this degree to further their experience in the social work or psychology field. The courses will provide education in the Six Performance Domains and the Twelve Core Functions that will be assessed when applying for certification.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		<b>OR</b>
ENGL	101*	ENGL 103*
ENGL	102*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Humanities 9 hours</b>		
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>
ART	101	ASL 101, 102
MUSC	101	ART 101
TA	205	ENGL 109, 120, 125
<b>Literature (3 hours)</b>		FREN 101
ENGL	109, 120, 125	HIST 101
		HUM 102, 103
		MUSC 101
		PHIL 101, 110, 121, 201, 202
		SPAN 101
		TA 205
<b>Mathematics 3 hours</b>		
MATH	111*, 150* & 160*	
<b>Physical Education 2 hours</b>		
PE	113	<b>OR two of the following:</b>
		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>		
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>
BIOL	101	CHEM 101, 104, 111*
		GEOL 115
		PHYS 101, 190*
<b>Social and Behavioral Science 9 hours</b>		
<b>Missouri Constitution (3 hours)</b>		
PLSC	103, 104*	<b>OR</b> HIST 106
<b>And the following courses: (6 hours)</b>		
PSYC	101	
SOC	101	
<b>Major Courses (15 hours)</b>		
SOCC	201	Intro to Dynamics of Addiction and Criminal Behavior* (3)
SOCC	210	Ethics and Legal Issues* (3)
SOCC	220	Counseling Theory and Practice* (3)
SOCC	230	Assessment, Intake, and Screening* (3)
SOCC	250	Case Management Practicum* (3)
<b>Approved elective (3 hours)</b>		
PSYC	215	Adolescent Psychology* (3)
PSYC	110	Psych of Personal Adjustment (3)
SOC	103	Marriage and Family* (3)

\*Prerequisite requirement



## ASSOCIATE OF ARTS DEGREE

**Agriculture**

For students pursuing a four-year degree in all areas of agriculture, pre-veterinary medicine, and wildlife conservation, the following curriculum is suggested. For best transfer, students should contact the college to which they plan to transfer prior to graduation.

<b>Orientation 1 hour</b> COLL 101		<b>Or</b> <b>AGRI 111 (for Ag Majors only)</b>			
<b>Communications 9 hours</b> <b>Written Communications (6 hours)</b> ENGL 101* ENGL 102* <b>Oral Communications (3 hours)</b> SPCH 101*		<b>OR</b> ENGL 103*			
<b>Humanities 9 hours</b> <b>Fine Arts (3 hours)</b> ART 101 MUSC 101 TA 205 <b>Literature (3 hours)</b> ENGL 109, 120, 125		<b>Additional Humanities (3 hours)</b> ASL 101, 102 ART 101 ENGL 109, 120, 125 FREN 101 HIST 101 HUM 102, 103 MUSC 101 PHIL 101, 110, 121, 201, 202 SPAN 101 TA 205			
<b>Mathematics 3 hours</b> MATH 111*, 150* & 160*					
<b>Physical Education 2 hours</b> PE 113		<b>OR two of the following:</b> 102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245* PE 216*, 244*, 245*			
<b>Science 10 hours</b> <b>Biological Science (5 hours)</b> BIOL 101		<b>Physical Science (5 hours)</b> CHEM 101, 104, 111* GEOL 115 PHYS 101, 190*			
<b>Social and Behavioral Science 9 hours</b>					
<b>Missouri Constitution (3 hours)</b> HIST 106 PLSC 103, 104 <b>And 3 Hours</b> ECON 201, 202 GEOG 101 HIST 101, 102, 107 PHIL 121 PSYC 101 SOC 101 <b>Additional (3 hours)</b> AGEC 123 (Ag majors only)		<b>Additional 3 Hours</b> ECON 201, 202 GEOG 101 HIST 101, 102, 106, 107 PHIL 110, 121 PLSC 103, 104, 205 PSYC 101, 210, 215 SOC 101			
<b>Major Courses (14 hours)</b> AGEC 223 Ag Computer Apps (3) AGRN 113 Crop Science (3)				AGRN 214 Fund of Soil Sci (4) ANSC 114 Intro to Animal Sci (4)	
<b>Approved Electives (3 hours)</b> <i>Courses determined by transferring institution's requirements and consultation with the Agriculture faculty.</i> <i>## Ag Education majors need to take both PLSC 103 or 104 and HIST 106 to meet DESE certification guidelines.</i>					

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Alternative Energy - Biofuels**

The Alternative Energy Program provides engineering and science students with a unique applied foundation in alternative energy technologies and applications. The program emphasizes learning through coursework and applied research projects. This option provides students with background and experience in the production of three primary biofuels: biodiesel, bioethanol fuel, and biogas. Students are required to complete a portfolio process which includes an interview as part of this degree program.

<b>Orientation</b>		<b>1 hour</b>		
	COLL	101*	<b>OR</b>	AGRI 111
<b>Communications</b>		<b>9 hours</b>		
	<b>Written Communications (6 hours)</b>		<b>OR</b>	
	ENGL	101*	ENGL	103*
	ENGL	102*		
	<b>Oral Communications (3 hours)</b>			
	SPCH	101*		
<b>Humanities</b>		<b>9 hours</b>	<b>Additional Humanities (3 hours)</b>	
	<b>Fine Arts (3 hours)</b>		ART	101
	ART	101	ASL	101, 102
	MUSC	101	ENGL	109, 120, 125
	TA	205	FREN	101
	<b>Literature (3 hours)</b>		HIST	101
	ENGL	109, 120, 125	HUM	102, 103
			MUSC	101
			PHIL	101, 110, 121, 201, 202
			SPAN	101
			TA	205
<b>Mathematics</b>		<b>3 hours</b>		
	MATH	111*	MATH	150* & 160*
<b>Physical Education</b>		<b>2 hours</b>	<b>OR two of the following:</b>	
	PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science</b>		<b>10 hours</b>		
	<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
	BIOL	101	CHEM	101, 111*
<b>Social and Behavioral Science</b>		<b>9 hours</b>		
	<b>Missouri Constitution (3 hours)</b>		<b>OR</b>	
	PLSC	103, 104*	HIST	106
	<b>Additional Social Science (3 hours)</b>			
	ECON	202		
	<b>Additional (3 hours)</b>		PLSC	103, 104*, 205
	ECON	201	PSYC	101, 210*, 215*
	GEOG	101	SOC	101, 103
	HIST	101, 102, 106, 107		
	PHIL	110, 121		
<b>Major Courses</b>		<b>18 hours</b>		
	ENER	140 Introduction to Biofuels (3)	ENER	248 Biofuels System Technology* (3)
	ENER	242 Biodiesel Production* (3)		
	ENER	244 Fuel Ethanol Production* (3)		
	ENER	246 Biogas Production (3)*		
	<b>Choose an additional 3 hours from the following:</b>		<b>OR</b>	
	BSAD	125 Computer Applications (3)	ANSC	230 Ag Waste Management (3)
	AGEC	223 Ag Computer Appl. (3)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Alternative Energy – Solar**

The Alternative Energy Program – Solar provides engineering and science students with a unique applied foundation in solar technologies and applications. The program emphasizes learning through classroom and applied research projects. The curriculum below is the result of a cooperative agreement between Crowder College and the School of Engineering at the Missouri University of Science and Technology (Rolla); cooperative programs are available at Missouri State University and Pittsburg State University. Students in the Alternative Energy - Solar program include Alternative Energy, Engineering, Science, and Technology majors. Students are required to take the entry level NABCEP Solar PV exam given as part of the ENER 260 course. Students must also report their score to the College for completion of this degree program.

<b>Orientation</b>		<b>1 hour</b>	
COLL	101*		
<b>Communications</b>		<b>9 hours</b>	
<b>Written Communications (6 hours)</b>			
ENGL	101*		
ENGL	102*		
ENGL	103*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities</b>		<b>9 hours</b>	<b>Additional Humanities (3 hours)</b>
<b>Fine Arts (3 hours)</b>			ASL 101, 102
ART	101		ART 101
MUSC	101		ENGL 109, 120, 125
TA	205		FREN 101
<b>Literature (3 hours)</b>			HIST 101
ENGL	109, 120, 125		HUM 102, 103
			MUSC 101
			PHIL 101, 110, 121, 201, 202
			SPAN 101
			TA 205
<b>Mathematics</b>		<b>5 hours</b>	
MATH	111* & 112*		MATH 150* & 160*
<b>Physical Education</b>		<b>2 hours</b>	<b>OR two of the following:</b>
PE	113		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science</b>		<b>10 hours</b>	
<b>Biological Science (5 hours)</b>			<b>Physical Science (5 hours)</b>
BIOL	101		CHEM 101, 111* (5)
			PHYS 101 (5)
			PHYS 190* (5)
<b>Social and Behavioral Science</b>		<b>9 hours</b>	
<b>Missouri Constitution (3 hours)</b>			<b>OR</b>
PLSC	103, 104*		HIST 106
<b>Additional Social Science (3 hours)</b>			
ECON	202		
<b>Additional (3 hours)</b>			
ECON	201		PLSC 103, 104*, 205
GEOG	101		PSYC 101, 210*, 215*
HIST	101, 102, 106, 107		SOC 101, 103
PHIL	110, 121		
<b>Major Courses</b>		<b>18 hours</b>	
ENER	105 Intro to Energy (3)		AMT 112 Occupational Safety (2)
ENER	150 Passive Solar Sys* (3)		ENER 251 Solar Thermal Lab* (2)
ENER	250 Solar Thermal Sys* (3)		ENER 261 Solar Electric Lab*(2)
ENER	260 Solar Electric Sys * (3)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Alternative Energy - Wind**

The Alternative Energy Wind Program provides engineering and science students with a unique applied foundation in renewable energy technology. The program emphasizes wind turbine technology. The curriculum below is designed to give the student a strong footing for employment or transfer to any of our cooperative programs that are available at Missouri State University, Missouri University of Science and Technology (Rolla), and Pittsburg State University. Students in the Alternative Energy program include engineering, science, and technology majors. Students are required to take a certification exam given as part of the ENER 232 course and report their score to the College for Completion of this degree program. Students are strongly encouraged to contact the Wind Instructor for advisement before beginning this program.

<b>Orientation</b>		<b>1 hour</b>	
COLL	101*		
<b>Communications</b>		<b>9 hours</b>	
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities</b>		<b>9 hours</b>	<b>Additional Humanities (3 hours)</b>
<b>Fine Arts (3 hours)</b>			ASL 101, 102
ART	101		ART 101
MUSC	101		ENGL 109, 120, 125
TA	205		FREN 101
<b>Literature (3 hours)</b>			HIST 101
ENGL	109, 120, 125		HUM 102, 103
			MUSC 101
			PHIL 101, 110, 121, 201, 202
			SPAN 101
			TA 205
<b>Mathematics</b>		<b>5 hours</b>	
MATH	111* & 112*	MATH	150* & 160*
<b>Physical Education</b>		<b>2 hours</b>	<b>OR two of the following:</b>
PE	113		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
		PE	
<b>Science</b>		<b>10 hours</b>	
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 111*
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>OR</b>	
PLSC	103, 104*	HIST	106
<b>Additional Social Science (3 hours)</b>			
ECON	202		
<b>Additional (3 hours)</b>			
ECON	201	PLSC	103, 104*, 205
GEOG	101	PSYC	101, 210*, 215*
HIST	101, 102, 106, 107	SOC	101, 103
PHIL	110, 121		
<b>Major Courses</b>		<b>20 hours</b>	
ENER	105 Intro to Energy (3)	AMT	102 Introduction to Industrial Electricity (3)
ENER	132 Introduction to Wind (3)	AMT	112 Occupational Safety (2)
ENER	134 Turbine Troubleshooting* (3)	CNS	101 Introduction to Electronics (3)
ENER	232 Wind Turbine Internship* (3)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Art and Design**

The Associate in Arts Degree in Art and Design provides the career student with the basic and comprehensive tools of art and design foundations. With a solid academic structure from Crowder College, students can transfer to four-year institutions where bachelor degrees are offered in graphic design, painting, sculpture, fibers, ceramics, drawing, jewelry, art history, art education, media and computer arts. Elective courses should be determined by contacting the college and department to which students wish to transfer. The following program is suggested if students have not yet chosen the institution to which they plan to transfer following graduation.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
<b>Literature (3 hours)</b>		ENGL	109, 120, 125
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 121, 201, 202
		SPAN	101, 102
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (18 Hours)</b>			
ART	103 Intro to 2D Design (3)	ART	107 Painting (3)
ART	104 Intro to 3D Design (3)	ART	110 Ceramics (3)
ART	106 Drawing I (3)	ART	111 Sculpture I (3)
<b>Other Recommended Courses</b>			
ART	206 Drawing II* (3)	ART	211 Sculpture II* (3)
ART	207 Painting II* (3)	ART	105 Topics in Art (1-3)
ART	210 Ceramics II (3)	ART	205 Topics in Art* (1-3)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Biology**

Biologists are teachers in high schools, colleges, and universities. They also work as conservationists, nutritionists, laboratory technicians, foresters, rangers, sanitarians, marine biologists, and geneticists. Their working environment has as much variation as any career field: classrooms, laboratories, forests, national or state parks, state or municipal offices, agricultural research stations, oceanographic vessels, museums, zoos, greenhouses, medical laboratories, hospitals, deserts, tropical rain forests, or even the cold of the arctic regions.

Biologically related jobs are predicted to increase much faster than most of the job market in the future. With recent advances in genetic research, many new doors are opening for biologists in such areas as medicine, synthesizing scarce biological molecules, and finding new food and energy sources.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 5 hours</b>			
MATH	111* & 112* or 150* & 160*		
<b>Physical Education 2 hours</b>			
		<b>OR two of the following:</b>	
PE	113		102, 103, 104, 105, 110, 111, 114, 116, 117,
		PE	144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	111*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (10 hours)</b>			
BIOL	110 Gen Zoology		
BIOL	120 Gen Botany (5)		
<b>Approved Electives (10 hours)</b>			
BIOL	220 Gen Microbiology* (5)	MATH	150 Calculus I Part 1* (2)
CHEM	112 General Chem II* (5)	MATH	160 Calculus I, Part II* (3)
CHEM	201 Quant. Analysis* (5)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Business Administration**

Business Administration at Crowder prepares the business-oriented student for transfer to a four-year business, marketing, accounting, economics or finance program. Business Administration provides a core of general education courses plus specific business courses equivalent to those found in any first and second year business program. The following program is suggested for students intending to transfer following graduation. For best transfer, contact with the senior institution should be made as early in the program as possible. All students pursuing this degree must take and pass the approved Technical Skills Assessment (TSA) prior to graduating.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		<b>OR</b>
ENGL	101*	ENGL 103*
ENGL	102*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Humanities 9 hours</b>		
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>
ART	101	ASL 101, 102
MUSC	101	ART 101
TA	205	ENGL 109, 120, 125
<b>Literature (3 hours)</b>		FREN 101
ENGL	109, 120, 125	HIST 101
		HUM 102, 103
		MUSC 101
		PHIL 101, 110, 121, 201, 202
		SPAN 101
		TA 205
<b>Mathematics 3 hours</b>		
MATH	111* or 150* & 160*	
<b>Physical Education 2 hours</b>		
<b>OR two of the following:</b>		
PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
		PE
<b>Science 10 hours</b>		
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>
BIOL	101	CHEM 101, 104, 111*
		GEOL 115
		PHYS 101, 190*
<b>Social and Behavioral Science 9 hours</b>		
<b>Missouri Constitution (3 hours)</b>		<b>OR</b>
PLSC	103, 104*	HIST 106
<b>Additional Social Science Courses (6 hours)</b>		
ECON	201	
ECON	202	
<b>Major Courses (12 hours)</b>		
BSAD	125 Computer Apps (3)	
BSAD	150 Intro to Business (3)	
ACCT	201 Prin of Account I (3)	
ACCT	202 Prin of Account II* (3)	
<b>Approved Electives (6 hours)</b>		
<i>Courses must be approved and from the Business Department. Prefixes will be ACCT, BMGT, BSAD, or OA.</i>		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Chemistry**

Instruction in the Physical Sciences is offered in the areas of chemistry, physics, geology and astronomy as the foundation for baccalaureate and graduate studies in these and related sciences at a university or four-year college. Physical Science students find employment in industrial research and development, government regulatory agencies, or secondary and post-secondary education. The suggested curriculum that follows assumes a mathematics background that will permit an enrollment in the calculus series as a freshman. If pre-calculus classes are needed, more than four semesters are necessary to complete this program.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 5 hours</b>			
MATH	150* & 160*		
<b>Physical Education 2 hours</b>			
<b>OR two of the following:</b>			
PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
		PE	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	111*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (20 hours)</b>			
CHEM	112 General Chem II* (5)	PHYS	190 Gen Physics I* (5)
MATH	201 Calculus II* (5)	PHYS	210 Gen Physics II* (5)
<b>Other Recommended Courses</b>			
CHEM	201 Quant Analysis* (5)	MATH	202 Calculus III* (5)
COMP	111 Intro to Computer Science* (4)		

\*Prerequisite requirement



## ASSOCIATE OF ARTS DEGREE

**Child Development**

The Child Development Program is designed for individuals who need an associate degree in early childhood. Graduates are prepared to continue as an early childhood teacher at Head Start or in a private institution. If the student prefers to pursue a BA, the student will have completed the general education requirements and the 20 hours in the major include courses that are transferable to several four-year institutions in our area.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		<b>or</b>
ENGL	101*	ENGL 103*
ENGL	102*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Humanities 9 hours</b>		
<b>Additional Humanities (3 hours)</b>		
ART	101	ART 101
MUSC	101	ASL 101, 102
<b>Literature (3 hours)</b>		ENGL 109, 120, 125
ENGL	109, 120, 125	FREN 101
		HIST 101
		HUM 102, 103
		MUSC 101
		PHIL 101, 110, 121, 201, 202
		SPAN 101
		TA 205
<b>Mathematics 3 hours</b>		
MATH	107*, 111*	
<b>Physical Education 2 hours</b>		
<b>OR two of the following:</b>		
PE	113 (recommended)	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>		
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>
BIOL	101	PHYS 101
<b>Social and Behavioral Science 9 hours</b>		
<b>OR</b>		
PLSC	103, 104*	HIST 106
PSYC	101	
SOC	101	
<b>Major Courses (20 hours)</b>		
ECD	101 Foundations (3)	
ECD	103 Health and Safety (3)	
ECD	201* Curriculum (3)	
ECD	203* Practicum (2)	
EDUC	206* Literature for Children (3)	
PSYC	210* Child Psych (3)	
SOC	103 Marriage and Family (3)	
Students with the Child Development Associate (CDA) national credential will be credited with completing ECD 101 and ECD 103.		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Computer Science**

Computer Science is a technologically-oriented program of study that provides a foundation of computer programming, mathematics, and physical science-oriented course work for students intending to pursue a bachelor degree in this area. Students completing this two-year curriculum will transfer to a four-year college or university for upper division course work. After graduation from that institution, the student will be qualified for a career as an applications programmer, a systems programmer, or a systems analyst.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 5 hours</b>			
MATH	150* & 160*		
<b>Physical Education 2 hours</b>			
<b>OR two of the following:</b>			
PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
		PE	244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	PHYS	190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (22 hours)</b>			
COMP	111 Intro to Computer Sci* (4)		
COMP	140 RPG* (3)		
<b>OR</b>	COMP	200 COBOL* (3)	MATH 202 Calculus III* (5)
	MATH	201 Calculus II* (5)	PHYS 210 Gen Physics II* (5)
<b>Recommended Additional Courses</b>			
COMP	140 RPG* (3)	MATH	210 Diff Equations* (3)
COMP	200 COBOL* (3)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Environmental Health Technology**

This degree option is a general study area for students who wish to pursue a career in a field of Environmental Study. It is designed to allow students to transfer to a four-year institution for completion of a bachelor degree in areas dealing with Environmental Health (Students should work closely with their advisor to ensure transferability of courses to their four year institution.) An additional requirement includes taking the DNR certification exam and reporting the score to Crowder College.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
	ENGL	101*	ENGL 103*
	ENGL	102*	
<b>Oral Communications (3 hours)</b>			
	SPCH	101*	
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
	ART	101	ASL 101, 102
	MUSC	101	ART 101
	TA	205	ENGL 109, 120, 125
<b>Literature (3 hours)</b>			FREN 101
	ENGL	109, 120, 125	HIST 101
			HUM 102, 103
			MUSC 101
			PHIL 101, 110, 121, 201, 202
			SPAN 101
			TA 205
<b>Mathematics 3 hours</b>			
	MATH	111*	
<b>Physical Education 2 hours</b>			
<b>OR two of the following:</b>			
	PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
	BIOL	101	CHEM 111*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional 3 Hours</b>	
	HIST	106	ECON 201, 202
	PLSC	103, 104*	GEOG 201, 202
<b>AND 3 hours</b>			HIST 101, 102, 106, 107
	ECON	201, 202	PHIL 121
	GEOG	101	PLSC 103, 104, 205
	HIST	101, 102, 107	PSYC 101, 210, 215
	PHIL	121	SOC 101
	PSYC	101	
	SOC	101	
<b>Major Courses 19 hours</b>			
	ERC	124 Water Lab (2)	ERC 142 Basic Wastewater Treatment (3)*
	ERC	132 Wastewater Lab (2)	ERC 221 Chlorine & Disinfection (2)
	ERC	140 Basic Water Treatment (3)*	ERC 231 Land Application of Waste (2)
	ERC	141 Water Distribution (2)	ERC 253 Hydraulics (3)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Environmental Science**

This degree option is a general study area for students who wish to pursue a career in a field of Environmental Study. It is designed to allow students to transfer to a four-year institution for completion of a bachelor degree in areas dealing with Environmental Science or Health (Students should work closely with their advisor to ensure transferability of courses to their four year institution.)

<b>Orientation</b>		<b>1 hour</b>	
	COLL	101	
<b>Communications</b>		<b>9 hours</b>	
<b>Written Communications (6 hours)</b>		<b>OR</b>	
	ENGL	101*	ENGL 103*
	ENGL	102*	
<b>Oral Communications (3 hours)</b>			
	SPCH	101	
<b>Humanities</b>		<b>9 hours</b>	
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
	ART	101	ART 101
	MUSC	101	ASL 101, 102*
	TA	205	ENGL 109, 120, 125
<b>Literature (3 hours)</b>			
	ENGL	109, 120, 125	FREN 101
			HIST 101
			HUM 102, 103
			MUSC 101
			PHIL 101, 110, 121, 201, 202
			SPAN 101
			TA 205
<b>Mathematics</b>		<b>3 hours</b>	
	MATH	111*	
<b>Physical Education</b>		<b>2 hours</b>	
		<b>OR two of the following:</b>	
	PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science</b>		<b>10 hours</b>	
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
	BIOL	101	CHEM 111*
<b>Social and Behavioral Science</b>		<b>9 hours</b>	
<b>Missouri Constitution (3 hours)</b>		<b>Additional 3 Hours</b>	
	HIST	106	ECON 201, 202
	PLSC	103, 104	GEOG 101
<b>AND 3 Hours</b>			
	ECON	201, 202	HIST 101, 102, 106, 107
	GEOG	101	PHIL 110, 121
	HIST	101, 102, 107	PLSC 103, 104, 205
	PHIL	121	PSYC 101, 210, 215
	PSYC	101	SOC 101
	SOC	101	
<b>Major Courses</b>		<b>20 hours</b>	
	BIOL	120 Gen Botany (5)	
	BIOL	220 Gen Microbiology* (5)	
	CHEM	112 General Chem II* (5)	
	GEOL	115 Intro to Geology (5)	

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Fire Science**

The Fire Science program at Crowder College-Webb City prepares the student to enter an exciting career as a fire fighter. The degree offers the opportunity for current fire fighters to prepare themselves as supervisors and leaders in their own departments. It also prepares students who wish to begin a career in fire fighting.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications</b>		<b>9 hours</b>	
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities</b>		<b>9 hours</b>	
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		HIST	101
ENGL	109, 120, 125	HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics</b>		<b>3 hours</b>	
MATH	107*, 111*, 150* & 160*		
<b>Physical Education</b>		<b>2 hours</b>	
PE	113	<b>OR two of the following:</b>	
		PE	102, 103, 104, 105, 106, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science</b>		<b>10 hours</b>	
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101, 152	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional 3 Hours</b>	
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (12 hours)</b>			
FSCI	102* Building Construction (3)	FSCI	108 Fire Protection Systems (3)
FSCI	107 Fire Service Hydraulics (3)	FSCI	205* Tactics & Strategy (3)
<b>Approved Electives (6 hours)</b>			
FSCI	210* Fire Service Instructor I (3)	FSCI	263 Problems FS (Internship) (3)
FSCI	208* The Company Officer (3)	FSCI	103* Fire Investigations (3)
FSCI	207* Fire Prevention/Code Enforcement (3)	FSCI	212 Occupational Safety & Health FS (3)
FSCI	109 Legal Aspects of ES (3)	FSCI	202 Hazardous Material Technician (3)
		EMT	101 (Emergency Med Technician (6)
Fire Fighter I (3) and Fire Fighter II (3) – ( must come from a state-approved training program)			

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**General Studies**

Students undecided about their major area of emphasis or career goals are urged to follow the General Studies curriculum. With the help of counseling from Student Services and consultation with an assigned faculty advisor, students should be able to transfer or graduate with a better idea of individual career strengths. For best results, general studies students should contact the four-year institution to which they plan to transfer while a sophomore.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101 (recommended)	CHEM	101, 104, 111*
BIOL	152 <sup>#</sup>	GEOL	115
		PHYS	101, 190*
<sup>#</sup> BIOL 152 may not meet Biological Science requirement for Bachelors degree			
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Approved Electives (Courses selected must be numbered 100 or higher.) 18 hours</b>			

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Graphic Design**

The Associate of Arts Degree in Graphic Design provides the career student with the basic and comprehensive tools of art and design foundations. With a solid academic structure from Crowder College, students can transfer to four-year institutions where bachelor's degrees are offered in graphic design, digital media and computer arts. Elective courses should be determined by contacting the college and department to which students wish to transfer. The following program is suggested if students have not yet chosen the institution to which they plan to transfer following graduation.

<b>Orientation 1 hour</b> COLL 101			
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
		ENG	109, 120, 125
		HIST	101
		HUM	102, 103
<b>Literature (3 hours)</b>		MUSC	101
ENGL	109, 120, 125	PHIL	101, 121, 201, 202
		SPAN	101, 102
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (18 hours)</b>			
ART	103 Intro to 2D Design (3)	ART	215 Graphic Design I (3)
ART	104 Intro to 3D Design (3)	ART	216 Graphic Design II (3)
ART	106 Drawing I (3)	COMM	130 Photography & Photojournalism I (3)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

## History

History majors are directed toward teaching, social services, and law. Requirements for an Associate of Arts Degree in History include the American History and Western Civilization survey courses and the completion of the general education core.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional (3 hours)</b>	
PLSC	103, 104*	ECON	201, 202
<b>3 hours of the following:</b>		GEOG	101
ECON	202	PHIL	110, 121
PHIL	121	PLSC	205
SOC	101	PSYC	101, 210*, 215*
		SOC	101, 103
<b>Major Courses (12 hours)</b>			
HIST	101 Western Civ I (3)	HIST	106 U.S. History I (3)
HIST	102 Western Civ II (3)	HIST	107 U.S. History II (3)
<b>Approved Electives (6 hours)</b>			
ECON	201 Prin of Econ I (3)	PSYC	101 Gen Psychology (3)
ECON	202 Prin of Econ II (3)	SOC	101 Gen Sociology (3)
GEOG	101 Prin of Geography (3)		

\*Prerequisite requirement



## ASSOCIATE OF ARTS DEGREE

## Information Science

Information Science is a business-oriented program of study that provides a foundation of computer programming and business course work for students intending to pursue a bachelor degree in this area. In this program, the level of required mathematics is less than that for the computer science program. Students completing this two-year curriculum will transfer to a four-year college or university for upper division course work. After graduation from that institution, the student will be qualified for a career as a business applications programmer, a systems programmer or a systems analyst.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	111* or 150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>OR</b>	
PLSC	103, 104*	HIST	106
<b>Additional Social Science Courses (6 hours)</b>		ECON	202
ECON	201		
<b>Major Courses (18 hours)</b>			
BSAD	150 Intro to Business (3)	COMP	111 Intro to Computer Science* (4)
BSAD	160 Prin of Account I (3)	COMP	140 RPG* (3)
BSAD	161 Prin of Account II* (3)	COMP	200 COBOL* (3)
<b>Elective (3 hours)</b>			
Any BSAD course			

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Journalism and Public Relations**

Career fields include mass media (newspapers, radio, TV, magazines), internet publications, and public relations, advertising, marketing, and human resources. In all fields, key job skills focus on effective communication by writing, speaking, or visually communicating. Crowder offers basic course work and experience through publications and hands-on activities. Transfer to a four-year college is recommended. For best transfer, students should contact the college of choice. For those seeking a job directly after graduating, the internship in the selected career field is recommended.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours Additional Humanities (3 hours)</b>			
<b>Fine Arts (3 hours)</b>		ASL	101, 102
ART	101	ART	101
MUSC	101	ENGL	109, 120, 125
TA	205	FREN	101
<b>Literature (3 hours)</b>		HIST	101
ENGL	109, 120, 125	HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours OR two of the following:</b>			
PE	113	PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (15 hours)</b>			
COMM	101 Intro to Mass Comm (3)	COMM	150 Intro to Journalism* (3)
COMM	102 Intro to Pub Rel (3)	COMM	151 News and Feature* (3)
COMM	111 Magazine Prod I* (3)		
<b>Approved Electives (3 hours)</b>			
COMM	130 Intro to Photography (3)	COMM	250 Comp Jour & Prod* (3)
COMM	160 Intro to Broadcast (3)	COMM	251 Journalistic Editing* (3)
COMM	225 Internship* (3)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Law Enforcement**

The Law Enforcement Associate Degree Program is designed to provide the student with the legal, technical, and practical aspects of law enforcement procedures. This degree will provide the student with opportunities for careers or continued education in criminal justice, corrections, juvenile justice, and government or private security operations.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Law Enforcement Courses (18 hours)</b>			
LE	101 Intro to Law Enforcement (3)	LE	270 Drug Investigation (3)
LE	200 Criminal Investigations I (3)	LE	280 Report Writing (3)
LE	210 Criminal Procedures (3)	LE	290 Police Super & Mgmt (3)
LE	250 Criminal Law (3)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Mathematics**

A major in mathematics is designed for students planning to teach mathematics at the secondary school level as well as for those desiring to work as professional mathematicians outside of education. Students entering this program should enjoy working with logic and numbers and should enjoy the challenge of applying mathematics to the sciences and related areas. A bachelor degree is necessary as a minimum requirement for employment in these areas. Students with mathematics backgrounds which require pre-calculus courses may need to plan for more than four semesters to complete this program.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 5 hours</b>			
MATH	150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
		PE	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	PHYS	190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (14 hours)</b>			
COMP	111 Intro to Computer Science* (4)	MATH	202 Calculus III* (5)
MATH	201 Calculus II* (5)		
<b>Approved Electives (3-5 hours)</b>			
MATH	210 Diff Equations* (3)	PHYS	210 Gen Physics II* (5)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Music**

For best transfer, students should contact the institution to which they plan to transfer prior to graduation.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours Additional Humanities (3 hours)</b>			
<b>Fine Arts (3 hours)</b>		ASL	101, 102
MUSC	101	ART	101
<b>Literature (3 hours)</b>		ENGL	109, 120, 125
ENGL	109, 120, 125	FREN	101
		HIST	101
		HUM	102, 103
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours OR two of the following:</b>			
PE	113	PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (22 hours)</b>			
MUSC	100 Music Recital (0)	4 semesters	
	Ensembles (4)		
	App Music, Voice or Piano (4)		
MUSC	103 Music Theory I (3)		
MUSC	104 Music Theory II (3)		
MUSC	203 Music Theory III		
MUSC	113 Ear Training I (1)		
MUSC	114 Ear Training II (1)		
MUSC	213 Ear Training III (1)		
MUSC	105 Elem Class Piano (1)		
MUSC	115 Elem Class Piano (1)	<b>or</b>	MUSC 120 Applied Music Piano (2)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Photography**

This multi-disciplinary program encompasses the wide variety of career options in the field of photography. Options include photojournalism, fine art photography, and commercial endeavors, which include products, portraiture, and events such as weddings. Photographers can work for an employer, own their own business, and/or work as freelancers.

<b>Orientation</b>		<b>1 hour</b>	
COLL	101		
<b>Communications</b>		<b>9 hours</b>	
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities</b>		<b>9 hours</b>	
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ENGL	109, 120, 125
		FREN	101
		HIST	101
		HUM	102, 103
<b>Literature (3 hours)</b>		MUSC	101
ENGL	109, 120, 125	PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics</b>		<b>3 hours</b>	
MATH	111*	MATH	150* & 160*
<b>Physical Education</b>		<b>2 hours</b>	
PE	113	<b>OR two of the following:</b>	
		PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 135, 144, 145,
		PE	204*, 205*, 216*
<b>Science</b>		<b>10 hours</b>	
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
BIOL	110, 120, 152#	GEOL	115
		PHYS	101, 190
# BIOL 152 may not meet Biological Science requirement for Bachelors degree			
<b>Social and Behavioral Science</b>		<b>9 hours</b>	
<b>Missouri Constitution (3 hours)</b>		<b>Additional 3 Hours</b>	
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>Additional Social Science (3 Hours)</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104*, 205
HIST	101, 102, 107	PSYC	101, 210*, 215*
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses</b>		<b>18 hours</b>	
COMM	220 Photocommunication (3)	<b>Approved Electives (9 Hours)</b>	
COMM	231* Photocommunication II (3)	ART	103 Intro to 2-D Design (3)
ART	216 Graphic Design II (3)	COMM	111 Magazine Production (3)
		COMM	150 Intro to Journalism (3)
		COMM	171-173 Topics in Communication (1-3)
		COMM	225* Internship (3)
		BSAD	150 Intro to Business (3)
		BMGT	200 Marketing (3)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Physical Education**

Most successful Physical Education majors have a strong interest in general health, physical fitness, and sports. Desire to work with young people in their overall development is essential for success in the field. Upon completion of a Bachelor Degree in Physical Education, graduates find job opportunities in coaching/teaching, recreation programs, and the sporting goods industry. Individuals seeking coaching/teaching careers in public schools must meet state certification requirements. The following program is suggested for graduation. Upon graduation, best transfer will occur through contact with the senior institution.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		<b>OR</b>
ENGL	101*	ENGL 103*
ENGL	102*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Humanities 9 hours</b>		
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>
ART	101	ASL 101, 102
MUSC	101	ART 101
TA	205	ENGL 109, 120, 125
<b>Literature (3 hours)</b>		FREN 101
ENGL	109, 120, 125	HIST 101
		HUM 102, 103
		MUSC 101
		PHIL 101, 110, 121, 201, 202
		SPAN 101
		TA 205
<b>Mathematics 3 hours</b>		
MATH	107*, 111*	
<b>Physical Education 2 hours</b>		
PE	113	
<b>Science 10 hours</b>		
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>
BIOL	101	CHEM 101, 104, 111*
		PHYS 101 (recommended)
<b>Social and Behavioral Science 9 hours</b>		
<b>Missouri Constitution (3 hours)</b>		<b>Additional (6 hours)</b>
PLSC	103, 104*	HIST 106
		PSYC 101
<b>Major Courses (12 hours)</b>		
PE	115 First Aid (2)	PE 150 Sport Psych (2)
PE	120 Intro to Phys Educ (2)	PE 160 or 260 Coaching Meth (2)
PE	125 Athletic Training (2)	PE 295 Supv Field Exp (2)
PE	142 Pers & Comm Health (3)	
<b>PE Activities Classes (2 one hour classes maximum)</b>		
<b>Approved Electives (6-11 hours)</b>		
PSYC	210 Child Psych* (3)	EDUC 230 Educ Psych* (3)
PSYC	215 Adolescent Psych* (3)	BIOL 152 Anat & Phys I (5) (recommended)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Physical Sciences**

Instruction in the Physical Sciences is offered in the areas of chemistry, physics, geology, and astronomy as the foundation for baccalaureate and graduate studies in these and related sciences at a university or four-year college. Physical Science students find employment in industrial research and development, government regulatory agencies, or secondary and post-secondary education. Each suggested curriculum that follows assumes a mathematics background that will permit an enrollment in the calculus series as a freshman. If pre-calculus classes are needed, more than four semesters may be necessary to complete this program.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 5 hours</b>			
MATH	150* & 160*		
<b>Physical Education 2 hours</b>			
		<b>OR two of the following:</b>	
PE	113	PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	111*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (20 hours)</b>			
CHEM	112 Gen Chemistry II* (5)	PHYS	190 Gen Physics I* (5)
MATH	201 Calculus II* (5)	PHYS	210 Gen Physics II* (5)
<b>Additional Recommended Classes</b>			
COMP	111 Intro to Computer Science* (4)	GEOL	115 Intro to Geology (5)
MATH	202 Calculus III* (5)		

\*Prerequisite requirement



## ASSOCIATE OF ARTS DEGREE

**Physics**

Instruction in the Physical Sciences is offered in the areas of chemistry, physics, geology, and astronomy as the foundation for baccalaureate and graduate studies in these and related sciences at a university or four-year college. Physical Science students find employment in industrial research and development, government regulatory agencies, or secondary and post-secondary education. Each suggested curriculum that follows assumes a mathematics background that will permit an enrollment in the calculus series as a freshman. If pre-calculus classes are needed, more than four semesters may be necessary to complete this program.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 5 hours</b>			
MATH	150* & 160*		
<b>Physical Education 2 hours</b>			
<b>OR two of the following:</b>		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*,	
PE	113	PE	216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	PHYS	190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (22 hours)</b>			
COMP	111 Intro to Computer Science* (4)	MATH	210 Diff Equations* (3)
MATH	201 Calculus II* (5)	PHYS	210 Gen Physics II* (5)
MATH	202 Calculus III* (5)		
<b>Additional Recommended Classes</b>			
CHEM	111 Gen Chemistry I* (5)	CHEM	112 Gen Chemistry II* (5)
<i>Any classes in Alternative Energy.</i>			

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

## Pre-Medicine

This program provides introductory courses for students interested in application to a college of medicine. Students should consult their advisors, as well as the institution to which they intend to transfer to finish their prerequisites, to insure that their course selections are appropriate. Prerequisite requirements for the college of medicine of interest should also be considered.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ART	101
MUSC	101	ENGL	109, 120, 125
TA	205	FREN	101
<b>Literature (3 hours)</b>		HIST	101
ENGL	109, 120, 125	HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 5 hours</b>			
MATH	150* & 160*		
<b>Physical Education 2 hours</b>			
		<b>OR two of the following:</b>	
PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	111*
BIOL	110		
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Major Courses (10 hours)</b>			
PHYS	190 General Physics I* (5)	BIOL	220 Gen Microbiology* (5)
<b>Approved Electives (10 hours)</b>			
CHEM	112 General Chem II* (5)	PHYS	210 General Physics II* (5)
CHEM	201 Quant Analysis* (5)		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Pre-Veterinary Medicine**

This program provides introductory courses for students interested in application to a college of veterinary medicine. Students should consult their advisors, as well as the institution to which they intend to transfer to finish their prerequisites, to insure that their course selections are appropriate. Prerequisite requirements for the college of veterinary medicine of interest should also be considered.

<b>Orientation</b>		<b>1 hour</b>		
COLL	101*	OR	AGRI	111 Ag Career Development
<b>Communications</b>		<b>9 hours</b>		
<b>Written Communications (6 hours)</b>				
ENGL	101*	OR	ENGL	103*
ENGL	102*			
<b>Oral Communications (3 hours)</b>				
SPCH	101*			
<b>Humanities</b>		<b>9 hours</b>		
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>		
ART	101	ART	101	
MUSC	101	ASL	101, 102	
TA	205	ENGL	109, 120, 125	
		FREN	101	
<b>Literature (3 hours)</b>		HIST	101	
ENGL	109, 120, 125	HUM	102, 103	
		MUSC	101	
		PHIL	101, 110, 121, 201, 202	
		SPAN	101	
		TA	205	
<b>Mathematics</b>		<b>5 hours</b>		
MATH	111* & 112*	MATH	150* & 160*	
<b>Physical Education</b>		<b>2 hours</b>		
PE	113	OR two of the following:		
		PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science</b>		<b>10 hours</b>		
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>		
BIOL	101	CHEM	111*	
BIOL	110			
<b>Social and Behavioral Science 9 hours</b>				
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>	
HIST	106	ECON	201, 202	
PLSC	103, 104	GEOG	101	
<b>And 3 Hours</b>		HIST	101, 102, 106, 107	
ECON	201, 202	PHIL	110, 121	
GEOG	101	PLSC	103, 104, 205	
HIST	101, 102, 107	PSYC	101, 210, 215	
PHIL	121	SOC	101	
PSYC	101			
SOC	101			
<b>Major Courses</b>		<b>(10 hours)</b>		
BIOL	220 Gen Microbiology* (5)	CHEM	112 Gen Chemistry II* (5)	
<b>Approved Electives (10 hours)</b>				
MATH	150* Calculus I, Part I (2)	ANSC	114 Intro to Animal Science (4)	
MATH	160* Calculus I, Part II (3)	ANSC	213 Feeds and Nutrition (3)	
PHYS	190* Physics I (5)	ANSC	233 Horse Science (3)	
PHYS	210* Physics II (5)	ANSC	223 Farm Animal Health (3)	
VETC	101 Intro to Vet Tech (2)	ANSC	232 AI/Animal reproduction (3)	

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Psychology**

Career opportunities for psychology majors include social work, teaching and counseling. After completion of a baccalaureate degree, graduates often find work with government agencies. An Associate in Arts in Psychology requires completion of the general education core, nine hours in psychology, and Sociology 101.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
	<b>Written Communications (6 hours)</b>		<b>OR</b>
	ENGL	101*	ENGL 103*
	ENGL	102*	
	<b>Oral Communications (3 hours)</b>		
	SPCH	101*	
<b>Humanities 9 hours</b>			
	<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>
	ART	101	ASL 101, 102
	MUSC	101	ART 101
	TA	205	ENGL 109, 120, 125
	<b>Literature (3 hours)</b>		FREN 101
	ENGL	109, 120, 125	HIST 101
			HUM 102, 103
			MUSC 101
			PHIL 101, 110, 121, 201, 202
			SPAN 101
			TA 205
<b>Mathematics 3 hours</b>			
	MATH	111*, 150* & 160*	
<b>Physical Education 2 hours</b>			
	PE	113	<b>OR two of the following:</b> 102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
	<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>
	BIOL	101	CHEM 101, 104, 111*
			GEOL 115
			PHYS 101, 190*
<b>Social and Behavioral Science 9 hours</b>			
	<b>Missouri Constitution (3 hours)</b>		<b>Additional 3 Hours</b>
	HIST	106	ECON 201, 202
	PLSC	103, 104	GEOG 101
<b>And 3 Hours</b>			HIST 101, 102, 106, 107
	ECON	201, 202	PHIL 110, 121
	GEOG	101	PLSC 103, 104, 205
	HIST	101, 102, 107	PSYC 101, 210, 215
	PHIL	121	SOC 101
	PSYC	101	
	SOC	101	
<b>Major Courses (12 hours)</b>			
	PSYC	101 General Psych (3)	PSYC 215 Adolescent Psych* (3)
	PSYC	210 Child Psych* (3)	SOC 101 General Sociology (3)
<b>Approved Electives (6 hours)</b>			
	HIST	106 U.S. History I (3)	PSYC 110 Psych of Pers Adj (3)
	HIST	107 U.S. History II (3)	EDUC 230 Educational Psych* (3)
	PLSC	103, 104* Nat, State, & Loc Gov	

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Social Work**

The Social Work program provides students with an introduction to and a foundation in the field of Social Work. An associate of arts in social work leads to a Bachelor's degree, which paves the way for a job in social work. The following program is suggested for graduation. It is recommended that students contact the transfer institution for its specific Bachelor's degree requirements.

It is recommended that students contact the transfer institution for its specific Bachelor's degree requirements.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	111*, 150* & 160*		
<b>Physical Education 2 hours</b>			
		<b>OR two of the following:</b>	
PE	113	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 6 hours</b>			
<b>Missouri Constitution (3 hours)</b>			
HIST	106		
<b>Additional Courses (3 hours)</b>			
PLSC	103, 104*		
<b>Major Courses 18 hours</b>			
ECON	201 Principles of Econ (Macro) (3)		
SOC	101 General Sociology (3)		
SOC	104 Intro to Social Work* (3)		
SOC	105 Basic Counseling Skills* (3)		
PSYC	101 General Psychology (3)		
<b>Social &amp; Behavioral Science Electives (3 hours)</b>			
GEOG	101 (3)	PHIL	110, 121 (3)
HIST	101 (3)	SOC	103 (3)
<b>Approved General Electives (3 hours)</b>			
PSYC	110 Psych of Personal Adjustment (3)		
PSYC	210 Child Psych* (3)		
PSYC	215 Adolescent Psych* (3)		
SOC	103 Marriage & Family*		

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Spanish**

Learning a second language encourages diversity, motivates or strengthens concern for world affairs, extends international business/marketing strategies, and enables global travel opportunities.

Classes in Spanish may be used to fulfill Humanities requirements in other A.A programs and would be beneficial in almost any career field in the 21<sup>st</sup> century. A Spanish major may be used in teaching, government, foreign service, translating, and many other careers. A Spanish minor may enrich opportunities for students in business, in the social sciences, in nursing, and in agriculture, for example.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Literature (3 hours)</b>	
ART	101	ENGL	120 or 125
MUSC	101		
TA	205		
<b>Additional Humanities (3 hours)</b>			
ART	101		
ASL	101, 102		
ENGL	109, 120, 125		
HUM	102, 103		
MUSC	101		
PHIL	101, 110, 121, 201, 202		
TA	205		
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours</b>		<b>OR two of the following:</b>	
PE	113	PE	102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101, 110, 120	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>And 3 hours of the following:</b>	
PLSC	103, 104*	ECON	201, 202
HIST	106	GEOG	101
<b>Social Science Courses (3 hs)</b>		HIST	102, 107
HIST	101	PHIL	110, 121
		PLSC	103, 104*, 205
		PSYC	101, 210*, 215*
		SOC	101
<b>Major Courses (12 hours)</b>			
SPAN	101 Begin Spanish I (3)	SPAN	201 Intermed Spanish I* (3)
SPAN	102 Begin Spanish II* (3)	SPAN	202 Intermed Spanish II* (3)
<b>Approved Electives (6 hours)</b>			
HIST	102 Western Civ II (3)	SPAN	105 Beg Conv Spanish I (3)
HUM	102, 103 Cultural Diversity* (3)	SPAN	106 Beg Conv Spanish II* (3)
		SPAN	111 Intro to Spanish for Health Care Workers (3)

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

**Teaching (AAT)**

This is a statewide AAT degree that all community colleges will offer. This degree includes courses that are required for any initial certification. The students will select the electives based on one of several criteria: preparation for the C-BASE, requirement for a specific teaching credential, or a required course at the institution to which they plan to transfer. The courses in the degree will transfer to any institution in the state of Missouri that accepts the AAT degree. Additional requirements for the AAT degree are a minimum GPA of 2.5, a minimum score of 235 on each section of the C-BASE, and completion of teacher education portfolio. Because GPA and C-BASE entrance score requirements vary by institution, it is important to work closely with your education advisor at Crowder and the institution to which you plan to transfer.

Orientation 1 hr COLL 101			
General Education Core			
Communications		9 hours	
Written Communications (6 hours)		or	
ENGL	101*	ENGL	103*
ENGL	102*		
Oral Communications (3 hours)			
SPCH	101*		
Humanities		9 hours	
DESE Requirement (3 hours)		Additional Humanities (3 hours)	
ART	101	ART	101
MUSC	101	ASL	101, 102
Literature (3 hours)		ENGL	109, 120, 125
ENGL	109, 120, 125	FREN	101
		HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
Mathematics		3 hours	
MATH	107*, 111*		
Physical Education		2 hours	
PE	113 (recommended)	OR two of the following: 102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
Science		10 hours	
Biological Science (5 hours)		Physical Science (5 hours)	
		CHEM	101, 111
		GEOL	115
BIOL	101	PHYS	101
Social and Behavioral Science		9 hours	
PLSC	103, 104*	PSYC	101
HIST	106, 107		
Major Courses (12 hours)			
EDUC	203 Foundations* (3)		
EDUC	210 Technology for Teachers* (3)		
EDUC	230 Educational Psychology* (3)		
EDUC	250 Teaching Prof w/Field Exper* (3)		
Electives (8 hours) (Check with advisor)			
Students must pass the CBASE with a qualifying score of 235 in each section.			
Overall GPA of 2.5 is required			
Completed teacher education portfolio			

\*Prerequisite requirement

## ASSOCIATE OF ARTS DEGREE

## Theatre

The Theatre Department has three general goals. First, all courses encourage the students to appreciate the theatre as an art form. Second, the courses encourage an understanding of how live theatre develops from script to performance. Third, the courses provide the student with many opportunities to experience live theatre performance and to participate in Crowder College Theatre productions in both performance and technical areas.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>		<b>OR</b>	
ENGL	101*	ENGL	103*
ENGL	102*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 9 hours</b>			
<b>Fine Arts (3 hours)</b>		<b>Additional Humanities (3 hours)</b>	
ART	101	ASL	101, 102
MUSC	101	ART	101
TA	205	ENGL	109, 120, 125
<b>Literature (3 hours)</b>		FREN	101
ENGL	109, 120, 125	HIST	101
		HUM	102, 103
		MUSC	101
		PHIL	101, 110, 121, 201, 202
		SPAN	101
		TA	205
<b>Mathematics 3 hours</b>			
MATH	107*, 111*, 150* & 160*		
<b>Physical Education 2 hours</b>			
PE	113	<b>OR two of the following:</b>	
		102, 103, 104, 105, 110, 111, 114, 116, 117, 144, 145, 204*, 205*, 216*, 244*, 245*	
<b>Science 10 hours</b>			
<b>Biological Science (5 hours)</b>		<b>Physical Science (5 hours)</b>	
BIOL	101	CHEM	101, 104, 111*
		GEOL	115
		PHYS	101, 190*
<b>Social and Behavioral Science 9 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>Additional</b>	<b>3 Hours</b>
HIST	106	ECON	201, 202
PLSC	103, 104	GEOG	101
<b>And 3 Hours</b>		HIST	101, 102, 106, 107
ECON	201, 202	PHIL	110, 121
GEOG	101	PLSC	103, 104, 205
HIST	101, 102, 107	PSYC	101, 210, 215
PHIL	121	SOC	101
PSYC	101		
SOC	101		
<b>Required Courses (10 hours)</b>			
TA	105 Acting I (3)	TA	115 Stagecraft (3)
		TA	Theatre Practicum (4)
<b>Approved Electives (8 hours)</b>			
TA	180 Stage Makeup (3)	TA	210 Oral Interp (3)
TA	125, 225 Summer Theatre (3)	TA	Theatre Practicum (1-3)
TA	Topics in Theatre (1-4)	MUSC	112 Voice for Theatre Majors (1)

\*Prerequisite requirement



## ASSOCIATE OF SCIENCE DEGREES

Associate of Science Degrees have been developed for transfer to specific universities and programs. Be sure to consult with an advisor about pursuing the Associate of Science degree.

### ASSOCIATE OF SCIENCE DEGREE

#### Nursing

The purpose of the Crowder College Nursing program is to prepare graduates who can demonstrate entry-level competencies as registered nurses, to provide a foundation for continued learning, and to provide a multiple entry program where licensed practical nurses can enter with advanced standing or students may enter with no previous nursing education. The program is approved by the Missouri State Board of Nursing. Graduation from the nursing program does not guarantee eligibility to write the licensure exam. Eligibility is determined on an individual basis by Missouri State Board of Nursing based on the Missouri Nursing Practice Act section 335.066 (1-14).

The nursing faculty strongly believes that the learner must be an active participant in the educational process. A wide variety of instructional methods are utilized in the process oriented nursing curriculum. Registered nurses function as an integral part of the health care team in many different roles. They are responsible for planning, implementing, and evaluating patient care as well as for the supervision of other health care workers. The nursing program is a multiple entry, limited admission program. A grade point average of 2.75 and a minimum ACT composite score of 19 are required for both levels of students. Students without previous nursing education (those who are NOT licensed practical nurses) enter the program at Level I. These students must have a minimum ACT Composite score of 19 and minimum 2.75 GPA and must complete Anatomy & Physiology I (BIOL 152) prior to beginning the nursing program. All accepted Nursing Students will be required to have an active Nurse Assistant Certification or EMT or Paramedic license prior to beginning for nursing course. Applications for Level I are accepted from April 15 to August 15 for the Neosho and Cassville program that begins in January. Applications are accepted from February 1 to May 1 for the Nevada Nursing program which begins in August.

Licensed practical nurses are given credit for first year nursing classes and may enter the program at Level II. LPN's entering with advanced standing must have a valid license to practice, be Missouri IV certified, and must have completed at least Anatomy and Physiology I and II and Survey of Chemistry before beginning the second level nursing sequence. Applications for Level II are accepted from April 15 to August 15 for the Neosho and Cassville program and February 1 to May 1 for the Nevada program.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications</b>		<b>6 hours</b>	
<b>Written Communications (3 hours)</b>		<b>Oral Communications (3 hours)</b>	
ENGL	101*, 103*	SPCH	101*
<b>Humanities</b>		<b>3 hours</b>	
ART	101	MUSC	101
ENGL	109, 120, 125	PHIL	101, 110, 121, 201, 202
FREN	101	SPAN	101, 111
HIST	101	TA	205
HUM	102, 103	ASL	101, 102
<b>Mathematics</b>		<b>3 hours</b>	
MATH	107*, 111*		
<b>Science</b>		<b>20 hours</b>	
BIOL	BIOL 152	BIOL	220*
BIOL	BIOL 252*	CHEM	101, 104, 111*
<b>Social and Behavioral Science 6 hours</b>			
<b>Missouri Constitution (3 hours)</b>		<b>And 3 hours of the following:</b>	
PLSC	103, 104*	PSYC	101
HIST	106	SOC	101
<b>Nursing Courses</b>		<b>35 hours</b>	
<b>Level I courses (16 hours)</b>			
ADN	169 Nurs Interventions I* (3)	ADN	170 Nurs Interventions II* (4)
ADN	167 Clinical I (1)	ADN	172 Family Development (2)
ADN	163 Nursing Concepts I (3)	ADN	177 Clinical II (3)
ORADN	200 Transition (2) LPNs Only		
<b>Level II courses (17 hours)</b>			
ADN	260 Nurs Interventions III* (4)	ADN	279 Nurs Interventions IV (3)
ADN	263 Nursing Concepts II (2)	ADN	277 Clinical IV (3)
ADN	267 Clinical III (3)	ADN	272 Psychosocial Nursing (2)

\*Prerequisite requirement

## ASSOCIATE OF SCIENCE DEGREE

### Pre-Engineering

The Associate in Science (A.S.) Pre-Engineering degree is a cooperative program between Crowder College and the School of Engineering at the Missouri University of Science & Technology. In addition, similar cooperative programs are being developed with Missouri State University and the University of Arkansas. However, those programs have not yet been finalized. The A.S. program does incorporate the essential course work for the first two years of study in any engineering field at other universities.

Some of the course requirements vary with the engineering departments cooperating in this program. Those requirements are marked with a (†). In such cases, students will need to consult with the advisor as to the appropriate class for a particular engineering major.

Crowder College and the School of Engineering at Missouri University of Science & Technology have instituted a co-admission advisement and counseling program for pre-engineering majors. Students enrolling at Crowder can be simultaneously enrolled at MUS&T. A smoother transition between the two institutions and a greater level of career counseling can be provided for students by allowing them to enroll in career development and other specified MUS&T classes on Crowder's campus. Students are also allowed to participate in special pre-registration programs on the MUS&T campus.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Communications †</b>		<b>6 hours</b>	
	ENGL	101* (3)	ENGL 103* (6)
	ENGL	102* (3)	SPCH 101* (3)
<b>Humanities, Social and Behavioral Science 12 hours †</b>			
<b>Missouri Constitution (3 hours)</b>			
	PLSC	103, 104*	
	HIST	106	
<b>Economics (3 hours):</b>			
	ECON	201, 202	
<b>Humanities (3 hours)</b>			
	ART	101	
	ASL	101, 102*	
	ENGL	109, 120, 125	
	HIST	101	
	HUM	102, 103	
	MUSC	101	
	PHIL	101, 110, 121, 201, 202	
	SPAN	101	
	TA	205	
<b>Additional (3 hours) or another humanities</b>			
	ECON	201, 202	
	GEOG	101	
	HIST	101, 102, 106, 107	
	PHIL	110, 121	
	PLSC	103, 104*	
	PSYC	101	
	SOC	101	
<b>Mathematics</b>		<b>18 hours</b>	
	MATH	150 Calculus I Part 1* (2)	MATH 202 Calculus III* (5)
	MATH	160 Calculus I, Part II* (3)	MATH 210 Differential Equations* (3)
	MATH	201 Calculus II* (5)	
<b>Science</b>		<b>18 hours</b>	
	PHYS	190 General Physics I* (5)	PHYS 250 Statics* (3)
	PHYS	210 General Physics II* (5)	CHEM 111 General Chemistry I* (5)
<b>Computer Science</b>		<b>4 hours</b>	
	COMP	111 Intro to Computer Science (4)	
<b>Technical Electives</b>		<b>6 hours</b>	
	CHEM	112 General Chemistry II* (5)	
	CHEM	201 Quant Analysis* (5)	DRFT 115 Basic CAD (3)
	Alternative Energy Courses		DRFT 101 Engineering Drawing (3)

\*Prerequisite requirement

## ASSOCIATE OF SCIENCE DEGREE

### Pre-Engineering – Alternative Energy Option

The Associate in Science (A.S.) Pre-Engineering degree is a cooperative program between Crowder College and the School of Engineering at the Missouri University of Science & Technology. In addition, similar cooperative programs are being developed with Missouri State University and the University of Arkansas. However, those programs have not yet been finalized. The A.S. program does incorporate the essential course work for the first two years of study in any engineering field at other universities.

Some of the course requirements vary with the engineering departments cooperating in this program. Those requirements are marked with a (†). In such cases, students will need to consult with the advisor as to the appropriate class for a particular engineering major.

Crowder College and the School of Engineering at Missouri University of Science & Technology have instituted a co-admission advisement and counseling program for pre-engineering majors. Students enrolling at Crowder can be simultaneously enrolled at MUS&T. A smoother transition between the two institutions and a greater level of career counseling can be provided for students by allowing them to enroll in career development and other specified MUS&T classes on Crowder's campus. Students are also allowed to participate in special pre-registration programs on the MUS&T campus.

<b>Orientation 1 hour</b>			
COLL 101			
<b>Communications</b>		<b>6 hours</b>	
ENGL	101* (3)	ENGL	103* (3)
ENGL	102* (3)	SPCH	101* (3)
<b>Humanities, Social and Behavioral Science</b>		<b>12 hours †</b>	
<b>Missouri Constitution (3 hours)</b>			
PLSC	103, 104*		
HIST	106		
<b>Economics (3 hours):</b>			
ECON	201, 202		
<b>Humanities (3 hours)</b>			
ART	101	MUSC	101
ASL	101, 102*	PHIL	101, 110, 121, 201, 202
ENGL	109, 120, 125	SPAN	101
HIST	101	TA	205
HUM	102, 103		
<b>Additional (3 hours) or another humanities</b>			
ECON	201, 202	PLSC	103, 104*
GEOG	101	PSYC	101
HIST	101, 102, 106, 107	SOC	101
PHIL	110, 121		
<b>Mathematics</b>		<b>18 hours</b>	
MATH	150 Calculus I Part I* (2)	MATH	202 Calculus III* (5)
MATH	160 Calculus I Part II* (3)	MATH	210 Differential Equations* (3)
MATH	201 Calculus II* (5)		
<b>Science</b>		<b>18 hours</b>	
PHYS	190 General Physics I* (5)	CHEM	111 General Chemistry I* (5)
PHYS	210 General Physics II* (5)		
PHYS	250 Statics* (3)		
<b>Computer Science</b>		<b>4 hours</b>	
COMP	111 Intro to Computer Science (4)		
<b>Technical Electives</b>		<b>6 hours</b>	
CHEM	112 General Chemistry II* (5)	ENER	242 Biodiesel Production (3)
ENER	150 Passive Solar Systems (3)	ENER	244 Bioethanol Fuel Production (3)
ENER	151 Passive Solar Lab (2)	ENER	246 Biogas Production (3)
ENER	156 Projects in Alternative Energy (3)	ENER	248 Biofuels System Technology (3)
ENER	250 Active Solar Systems* (3)	ENER	134 Wind Turbine Troubleshooting (3)
ENER	251 Active Solar Lab (2)	ENER	232 Wind Turbine Internship (3)
ENER	256 Projects in Alternative Energy (3)		

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREES

Associate in Applied Science (A.A.S.) programs provide education for specific careers. Graduates are prepared for the world of work upon completion of suggested curriculum.

While the A.A.S. is not designed for transfer, selected A.A.S. programs may be transferred to four-year colleges through special articulation agreements. A.A.S. students seeking transfer should consult their faculty advisor before registering.

To graduate with the Associate in Applied Science Degree a student must meet the following requirements:

- A. Earn a minimum of 60 semester hours of credit. Of these, at least 15 of the last 30 semester hours must be earned in courses provided by Crowder College.
- B. Earn a cumulative grade point average of 2.0 (C) or higher in all college courses attempted.
- C. Complete an approved curriculum as listed on the following pages.

### ASSOCIATE OF APPLIED SCIENCE DEGREE

#### Accounting

To earn the AAS in Accounting, a student must meet the requirements of the General Education Core and the Accounting Core. All courses completed in either the Business Management Certificate I or II count toward this degree.

\*All students pursuing this degree must take and pass the approved Technical Skills Assessment (TSA) prior to graduating.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
ENGL	100 (3)	
ENGL	101*	
ENGL	102*	
ENGL	203*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Mathematics 3 hours</b>		
BSAD	121*	
<b>Missouri Constitution 3 hours</b>		
PLSC	103, 104	
HIST	106	
<b>Business Core 13 hours</b>		
BSAD	125 Computer Apps (3)	
BSAD	130 Bus Communications* (3)	
BMGT	223 Business Ethics (3)	
BSAD	103 Professional Dev (2)	
ACCT	290 Internship (2)	
<b>Accounting Core 29 hours</b>		
ACCT	216 Financial Analysis & Budgeting* (3)	
BSAD	108 Personal Finance (3)	
BSAD	150 Intro to Business (3)	
ACCT	201 Prin of Accounting I (3)	
ACCT	202 Prin of Accounting II* (3)	
ACCT	165 QuickBooks* (3)	
BSAD	215 Spreadsheets* (2)	
ACCT	245 Tax Accounting (3)	
ACCT	250 Certified Bookkeeper Review *(3)	
ACCT	160 Payroll Accounting (3)	
<b>Electives 5 hours</b>		
Electives can be taken from ACCT, BSAD, BMGT, OA, or ECON 201		

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Agri-Business Technology: Agronomy Option**

This program offers the graduate an Associate of Applied Science degree (AAS) which provides education for specific careers in agricultural business, agronomy. Graduates are prepared for the world of work upon successful completion of the program. While an AAS is not designed to transfer, it is possible to transfer to a four-year college if planned accordingly. Students planning to transfer should consult their faculty advisor before registering for classes to assure appropriate classes are selected.

<b>Orientation 1 hour</b>	
AGRI	111
<b>Communications 9 hours</b>	
<b>Written Communications (6 hours)</b>	
ENGL	100
ENGL	101*
ENGL	102*
ENGL	203*
<b>Oral Communications (3 hours)</b>	
SPCH	101*
<b>Mathematics 3 hours</b>	
BSAD	121*
MATH	100*, 107*, 111*, 150* & 160*
<b>Missouri Constitution 3 hours</b>	
PLSC	103, 104
HIST	106
<b>Agri-Business Core 27 – 29 hours</b>	
AGEC	123 Prin of Ag Econ (3)
AGEC	223 Ag Comp Apps (3)
AGMC	205 Ag Mechanics (3)
AGRI	202 Ag Capstone (2)
AGRI	212 & 222 SOE (2) or AGRI 204 Internship (4)
AGRN	113 Crop Science (3)
AGRN	214* Fund of Soil Science (4)
ANSC	114 Animal Sci (4)
AGEC	213 Farm Business Mgmt (3)
<b>Agri-Business Agronomy 18 hours</b>	
AGRN	223 Grain Crops (3)
AGDI	153 Harvest & Tillage (3)
AGRI	123 Ag Chemicals (3)
ANSC	230 Ag Waste Mgmt (3)
ANSC	213 Feeds & Nutrition (3)
AGRN	243 Forage Crops (3)

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Agri-Business Technology: Horticulture Option**

This program offers the graduate an Associate of Applied Science degree (AAS) which provides education for specific careers in agricultural business, horticulture. Graduates are prepared for the world of work upon successful completion of the program. While an AAS is not designed to transfer, it is possible to transfer to a four-year college if planned accordingly. Students planning to transfer should consult their faculty advisor before registering for classes to assure appropriate classes are selected.

<b>Orientation 1 hour</b>	
AGRI	111
<b>Communications 9 hours</b>	
<b>Written Communications (6 hours)</b>	
ENGL	100
ENGL	101*
ENGL	102*
ENGL	203*
<b>Oral Communications (3 hours)</b>	
SPCH	101*
<b>Mathematics 3 hours</b>	
BSAD	121*
MATH	100*, 107*, 111*, 150* & 160*
<b>Missouri Constitution 3 hours</b>	
PLSC	103, 104
HIST	106
<b>Agri-Business Core 27 – 29 hours</b>	
AGEC	123 Prin of Ag Econ (3)
AGEC	223 Ag Comp Apps (3)
AGMC	205 Ag Mechanics (3)
AGRI	202 Ag Capstone (2)
AGRI	212 & 222 SOE (2) or AGRI 204 Internship (4)
AGRN	113 Crop Science (3)
AGRN	214* Fund of Soil Science (4)
ANSC	114 Animal Sci (4)
AGEC	213 Farm Business Mgmt (3)
<b>Agri-Business Horticulture Option 18 hours</b>	
HORT	101 Gen Horticulture (3)
HORT	103 Floriculture (3)
HORT	113 Greenhouse Mgmt (3)
HORT	204 Nursery Mgmt/Landscape Design (4)
AGRN	243 Forage Crops (3)
BSAD	103 Professional Development (2)

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Agri-Business Technology: Livestock Production Option**

This program offers the graduate an Associate of Applied Science degree (AAS) which provides education for specific careers in agricultural business, livestock production. Graduates are prepared for the world of work upon successful completion of the program. While an AAS is not designed to transfer, it is possible to transfer to a four-year college if planned accordingly. Students planning to transfer should consult their faculty advisor before registering for classes to assure appropriate classes are selected.

<b>Orientation 1 hour</b>		
AGRI	111	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
ENGL	100	
ENGL	101*	
ENGL	102*	
ENGL	203*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Mathematics 3 hours</b>		
BSAD	121*	
MATH	100*, 107*, 111*, 150* & 160*	
<b>Missouri Constitution 3 hours</b>		
PLSC	103, 104	
HIST	106	
<b>Agri-Business Core 27 - 29 hours</b>		
AGEC	123 Prin of Ag Econ (3)	
AGEC	223 Ag Comp Apps (3)	
AGMC	205 Ag Mechanics (3)	
AGRI	202 Ag Capstone (2)	
AGRI	AGRI 212 & 222 (2) or AGRI 204 Internship (4)	
AGRN	113 Crop Science (3)	
AGRN	214* Fund of Soil Science (4)	
ANSC	114 Animal Sci (4)	
AGEC	213 Farm Business Mgmt (3)	
<b>Agri-Business Livestock Option 18 hours</b>		
ANSC	233 Horse Science (3)	
ANSC	153 Beef Production (3)	
ANSC	232 Artificial Insemination (3)	
ANSC	213 Feeds & Nutrition (3)	
ANSC	203 Meat Science (3)	
AGRN	243 Forage Crops (3)	

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

### Agri-Business Technology: Marketing and Management Option

This program offers the graduate an Associate of Applied Science degree (AAS) which provides education for specific careers in agricultural business marketing and management. Graduates are prepared for the world of work upon successful completion of the program. While an AAS is not designed to transfer, it is possible to transfer to a four-year college if planned accordingly. Students planning to transfer should consult their faculty advisor before registering for classes to assure appropriate classes are selected.

<b>Orientation 1 hour</b>	
AGRI	111
<b>Communications 9 hours</b>	
<b>Written Communications (6 hours)</b>	
ENGL	100
ENGL	101*
ENGL	102*
ENGL	203*
<b>Oral Communications (3 hours)</b>	
SPCH	101*
<b>Mathematics 3 hours</b>	
BSAD	121*
MATH	100*, 107*, 111*, 150* & 160*
<b>Missouri Constitution 3 hours</b>	
PLSC	103, 104
HIST	106
<b>Agri-Business Core 27 - 29 hours</b>	
AGEC	123 Prin of Ag Econ (3)
AGEC	223 Ag Comp Apps (3)
AGMC	205 Ag Mechanics (3)
AGRI	202 Ag Capstone (2)
AGRI	AGRI 212 & 222 (2) AGRI 204 Internship (4)
AGRN	113 Crop Science (3)
AGRN	214* Fund of Soil Science (4)
ANSC	114 Animal Sci (4)
AGEC	213 Farm Business Mgmt (3)
<b>Agri-Business and Business Core Select 18 hours</b>	
BMGT	175 Management (3)
BMGT	200 Marketing (3)
BMGT	280 Personnel Management (3)
BSAD	103 Professional Dev (2)
BMGT	223 Business Ethics (3)
BSAD	230 Business Law (3)
AGRI	223 Public Relations in Agri-Business (3)
AGRI	190 World Food and Society (3)

\*Prerequisite requirement



## ASSOCIATE OF APPLIED SCIENCE DEGREE

### Alternative Energy – Biofuels

The Biofuels Program AAS Degree provides students with a unique applied foundation in renewable energy technology. The program's emphasis on vocational Biofuel technology is designed to give the student a strong footing for employment or transfer to any of our cooperative programs that are available at Missouri State University or Pittsburg State University. Students in the Alternative Energy program include engineering, science, and technology majors. Students are required to complete a portfolio process which includes an interview as part of this degree program.

<b>Orientation 1 hour</b>					
	COLL	101	College Orientation	OR	AGRI 111 Career Development
<b>Communications 9 hours</b>					
<b>Written Communications (6 hours)</b>					
	ENGL	101*	English Composition (3)		
	ENGL	203*	Technical Report Writing (3)		
<b>Oral Communications (3 hours)</b>					
	SPCH	101*	Fundamentals of Speech		
<b>Mathematics 3 hours</b>					
	MATH	111*	College Algebra (3)		
or	MATH	104*	Technical Mathematics (3)		
<b>Science 10 hours</b>					
	BIOL	101	General Biology (5)		
	CHEM	101	Survey of Chemistry (5)		
<b>Social and Behavioral Science 3 hours</b>					
	HIST	106	U.S. History I (3)		
or	PLSC	103, 104*	Nat'l, State, Local Govt (3)		
<b>Required Courses (35 hours)</b>					
	AGEC	123	Prin of Ag Econ (3)		
	AGEC	223	Ag Computer Apps (3)	OR	BSAD 125 Computer Apps (3)
	AGRN	113	Crop Science (3)		
	AGRN	223	Grain Crops (3)	OR	AGRN 243 Forage Crops (3)
	ANSC	230	Agri Waste Management (3)		
	DRFT	101	Engineering Drawing (3)		
	AGRI	202	Agriculture Capstone (2)	OR	BSAD 103 Professional Development (2)
	ENER	140	Introduction to Biofuels (3)		
	ENER	242	Biodiesel Production* (3)		
	ENER	244	Bioethanol Fuel Production* (3)		
	ENER	246	Biogas Production* (3)		
	ENER	248	Biofuels System Technology* (3)		

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Alternative Energy - Solar**

The Alternative Energy-Solar AAS degree provides students with a unique applied foundation in solar technologies. The program all aspects of solar technologies and is designed to give the student a strong footing for employment or transfer to any of our cooperative programs that are available at Missouri State University or Pittsburg State University. Students in the Alternative Energy-Solar program include engineering, science, and technology majors. Students are required to take the entry level NABCEP Solar PV exam given as part of the ENER 260 course. Students must also report their score to the College for completion of this degree program.

<b>Orientation 1 hour</b>	
COLL 101 College Orientation (1)	
<b>Communications</b>	<b>9 hours</b>
<b>Written Communications (6 hours)</b>	
ENGL 100	Mechanics of Composition (3)
ENGL 101*	English Composition (3)
ENGL 102*	Advanced English Composition (3)
ENGL 203*	Technical Report Writing (3)
<b>Oral Communications (3 hours)</b>	
SPCH 101*	Fundamentals of Speech
<b>Mathematics</b>	<b>3 hours</b>
MATH 104*	Technical Mathematics (3)
MATH 111*	College Algebra (3)
<b>Science</b>	<b>5 hours</b>
PHYS 101	Survey of Physical Science (5)
<b>Missouri Constitution</b>	<b>3 hours</b>
PLSC 103, 104*	Nat'l, State, Local Govt (3)
HIST 106	U.S. History I (3)
<b>Required Courses</b>	<b>37 hours</b>
BSAD 103	Professional Development (2)
CNS 101	Introduction to Electronics (3)
CONS 105	Introduction to Construction (3)
AMT 112	Occupational Safety (2)
CONS 133	Basic Plumbing* (3)
CONS 143	Basic Electricity* (3)
DRFT 101	Intro to Engineering Drawing (3)
ENER 105	Intro to Energy (3)
ENER 150	Passive Solar Systems (3)
ENER 151	Passive Solar Systems Lab (2)
ENER 250	Solar Thermal Systems* (3)
ENER 251	Solar Thermal Systems Lab* (2)
ENER 260	Solar Electric Systems* (3)
ENER 261	Solar Electric Systems Lab*(2)
<b>Approved Electives</b>	<b>5 hours</b>
AMT 102	Introduction to Industrial Electricity (3)
DRFT 103	Technical Drawing (3)
CONS 243	Construction Project Supervision (3)
CONS 245	Project Management (3)
CONS 283	Advanced Electricity I (3)
CONS 273	Advanced Plumbing I (3)
ENER 156, 157, 158	Projects (1-3)

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Alternative Energy - Wind**

The Alternative Energy Program AAS Degree provides students with a unique applied foundation in renewable energy technology. The program's emphasis on vocational wind turbine technology is designed to give the student a strong footing for employment or transfer to any of our cooperative programs that are available at Missouri State University or Pittsburg State University. Students in the Alternative Energy program include engineering, science, and technology majors. Students are required to take a certification exam given as part of the ENER 232 course and report their score to the College for completion of this degree program. Students are strongly encouraged to contact the wind Instructor for advisement before beginning this program.

<b>Orientation 1 hour</b>		
	COLL 101 College Orientation (1)	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
	ENGL 100 Mechanics of Composition (3)	
	ENGL 101* English Composition (3)	
	ENGL 102 Advanced English Composition (3)	
	ENGL 203* Technical Report Writing (3)	
<b>Oral Communications (3 hours)</b>		
	SPCH 101* Fundamentals of Speech	
<b>Mathematics 3 hours</b>		
	MATH 104* Technical Mathematics (3)	
or	MATH 111* College Algebra (3)	
<b>Science 4 hours</b>		
	PHYS 101 Survey of Physical Science (5)	
or	PHYS 104 Technical Physics (4)	
<b>Missouri Constitution 3 hours</b>		
	PLSC 103, 104* Nat'l, State, Local Govt (3)	OR HIST 106 U.S. History I (3)
<b>Required Courses 38 hours</b>		
	BSAD 103 Professional Development (2)	
	AMT 112 Occupational Safety (2)	
	CNS 101 Introduction to Electronics (3)	
	CNS 115 CISCO Networking I (3)	
	CONS 105 Introduction to Construction (3)	
	CONS 231 Site Layout I* (3)	
	ENER 105 Introduction to Energy (3)	
	AMT 102 Introduction to Industrial Electricity (3)	
	AMT 204 Programmable Controllers* (3)	
	DIES 134 Diesel Hydraulics (4)	
	ENER 132 Introduction to Wind (3)	
	ENER 134 Turbine Troubleshooting* (3)	
	ENER 232 Wind Turbine Internship* (3)	
<b>Approved Electives 3 hours</b>		
	BSAD 125 Computer Applications (3)	
	CONS 243 Construction Project Supervision (3)	
	CONS 253 Construction Project Manager (3)	
	ENER 156, 157, 158 Projects (1-3)	
	LOC 206 Career Exploration (2)	

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Advanced Manufacturing Technology: Automation/Robotics Option**

The Advanced Manufacturing Technology program prepares students for employment in industries with automated manufacturing processes. The program is built around a set of core courses designed to give students the basic skill set required for this industry coupled with specialty courses allowing students to focus on various related options. This Program of Study addresses the Automation/Robotics Option.

<b>Orientation</b>		<b>1 hour</b>
COLL 101* College Orientation (1)		
<b>Communications</b>		<b>9 hours</b>
<b>Written Communications: 6 hours</b>		
ENGL 100 Mechanics of Composition (3)		
ENGL 101* English Composition (3)		
ENGL 102* Advanced English Composition(3)		
ENGL 203* Technical Report Writing (3)		
<b>Oral Communications: 3 hours</b>		
SPCH 101 Fundamentals of Speech (3)		
<b>Missouri Constitution</b>		<b>3 hours</b>
PLSC 103 National, State, Local Government (3)		
HIST 106 U.S. History I (3)		
<b>Mathematics</b>		<b>3 hours</b>
MATH 111* College Algebra (3)		
MATH 104* Technical Mathematics (3)		
<b>Common Support Courses</b>		<b>11 hours</b>
DRFT 101 Introduction to Engineering Drawing (3)		
WELD 113 Introduction to Welding (3)		
BSAD 125* Computer Applications (3)		
BSAD 103 Professional Development (2)		
<b>Common Advanced Manufacturing Courses</b>		<b>19 hours Prerequisites (PR) or Co-requisites (CR) (**)</b>
AMT 111 Introduction to Industrial Safety (1)		None
AMT 102* Introduction to Industrial Electricity (3)		CR: AMT 111, MATH 60, COMM 80
AMT 104* Electrical Motor Controls (3)		PR: AMT 102, CR: MATH 70
AMT 204* Programmable Controllers (3)		PR: AMT 102, CR: AMT 104, MATH 104, ENGL 100
AMT 142* Mechanical Power Transmission (3)		PR: AMT 111, CR: MATH 70
AMT 132* Industrial Hydraulics (3)		PR: AMT 111, CR: AMT 102, MATH 70
AMT 290* Manufacturing Internship (3)		PR: Sophomore Standing (> 28 Semester Hours)
<b>Specialty Courses: AUTOMATION/ROBOTICS</b>		<b>15 hours Prerequisites (PR) or Co-requisites (CR) (**)</b>
<b>Required Courses: 15 hours</b>		
AMT 182* Introduction to Automated Robotics (3)		PR: AMT 102, CR: MATH 50/70
AMT 206* Programmable Controllers II (3)		PR: AMT 204
AMT 284* Automated Robotic Programing (3)		PR: AMT 182, CR: MATH 104
CNS 101 Introduction to Electronics (3)		
CNS 115 Cisco Networking I (3)		
<b>Total Credit Hours for this Specialty:</b>		<b>61 hours</b>

(\*) – These courses have pre-requisite requirements. See catalog description for details.

(\*\*) - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When development courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Advanced Manufacturing Technology: Manufacturing Maintenance Option**

The Advanced Manufacturing Technology program prepares students for employment in industries with automated manufacturing processes. The program is built around a set of core courses designed to give students the basic skill set required for this industry coupled with specialty courses allowing students to focus on various related options. This Program of Study addresses the Manufacturing Maintenance Option.

<b>Orientation</b>			<b>1 hour</b>
COLL	101*	College Orientation (1)	
<b>Communications</b>			<b>9 hours</b>
<b>Written Communications (6 hours)</b>			
ENGL	100	Mechanics of Composition (3)	
ENGL	101*	English Composition (3)	
ENGL	102*	Advanced English Composition (3)	
ENGL	203*	Technical Report Writing (3)	
<b>Oral Communications (3 hours)</b>			
SPCH	101	Fundamentals of Speech (3)	
<b>Mathematics</b>			<b>3 hours</b>
MATH	111*	College Algebra (3)	
or	MATH	104*	Technical Mathematics (3)
<b>Missouri Constitution</b>			<b>3 hours</b>
PLSC	103*	National, State, Local Government (3)	
or	HIST	106*	U.S. History I (3)
<b>Common Advanced Manufacturing Courses</b>			<b>11 hours</b>
DRFT	101	Introduction to Engineering Drawing (3)	
WELD	113	Introduction to Welding (3)	
BSAD	125*	Computer Applications (3)	
BSAD	103	Professional Development (2)	
<b>Common Advanced Manufacturing Courses</b>			<b>19 hours</b>
AMT	111	Introduction to Industrial Safety (1)	<b>Prerequisites (PR) or Corequisites (CR)(**)</b> None
AMT	102*	Introduction to Industrial Electricity (3)	CR: AMT 111, MATH 60, COMM 80
AMT	104*	Electrical Motor Controls (3)	PR: AMT 102, CR: MATH 70
AMT	204*	Programmable Controllers (3)	PR: AMT 102, CR: AMT 104, MATH 104, ENGL 100
AMT	142	Mechanical Power Transmission (3)	PR: AMT 111, CR: MATH 70
AMT	132	Industrial Hydraulics (3)	PR: AMT 111, CR: AMT 102, MATH 70
AMT	290	Manufacturing Internship (3)	PR: Sophomore Standing (>28 Semester Hours)
<b>Specialty Courses: MANUFACTURING MAINTENANCE</b>			<b>15 hours</b>
<b>Required Courses: 9 hours</b>			
AMT	122*	Basic Machining (3)	CR: AMT 111, MATH 60, COMM 80
CONS	132	Plumbing I (2)	
CONS	155	Basic HVAC (1)	
<b>Specialty Electives: 6 hours</b>			
AMT	162*	Industrial Process Control I (3)	PR: AMT 102, CR: MATH 104
AMT	206*	Programmable Controllers II (3)	PR: AMT 204
CNS	101	Introduction to Electronics (3)	
CNS	115	Introduction to Networking (3)	
WELD	145*	Gas Metal Arc Welding – GMAW (3)	
WELD	150*	Gas Tungsten Arc Welding – GTAW (3)	
WELD	155*	Shielded Metal Arc Welding – SMAW (3)	
DEPT	XXX	Any Technology or Business Division Course (3)	
<b>Total Hourly Requirement</b>			<b>61 hours</b>

\* - These courses have pre-requisite requirements. See catalog description for details.

\*\* - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

## ASSOCIATE OF APPLIED SCIENCE DEGREE

### Auto Technology

The Automotive Technology program is aimed at training students in the maintenance and repair of today's modern, complex vehicles. Successful automotive graduates can expect to find employment in the automotive service industry as technicians, parts managers, service managers, or in sales positions.

<b>Orientation 1 hour</b>		
	COLL	101
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
	ENGL	100
	ENGL	101*
	ENGL	102*
	ENGL	203*
<b>Oral Communications (3 hours)</b>		
	SPCH	101*
<b>Mathematics 3 hours</b>		
	BSAD	121*
	MATH	104*
<b>Missouri Constitution 3 hours</b>		
	PLSC	103, 104*
	HIST	106
<b>Technical Core 45 hours</b>		
	AUTO	114 Auto Fuel Systems (4)
	AUTO	115 Engine Repair (5)
	AUTO	124 Auto Brake Systems (4)
	AUTO	125 Auto Electrical Systems (5)
	AUTO	214 Auto Air Conditioning (4)
	AUTO	215 Auto Emission Cont Sys (5)
	AUTO	223 Auto Power Train Sys (3)
	AUTO	224 Computer Engine Cont (4)
	AUTO	225 Auto Suspen and Steer (5)
	BSAD	150 Intro to Business (3)
	BSAD	125 Computer Apps (3)

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Auto Technology – Parts Management Option**

This curriculum was developed working closely with local automotive parts supply companies. The intent is to provide the student with the tools necessary to become successful in the automotive parts supply business. Special emphasis has been given to marketing, business law and personnel management.

<b>Orientation 1 hour</b>		
	COLL	101
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
	ENGL	100
	ENGL	101*
	ENGL	102*
	ENGL	203*
<b>Oral Communications (3 hours)</b>		
	SPCH	101*
<b>Mathematics 3 hours</b>		
	BSAD	121*
	MATH	104*
<b>Missouri Constitution 3 hours</b>		
	PLSC	103, 104
	HIST	106
<b>Technical Core 46 hours</b>		
	AUTO	114 Auto Fuel Systems (4)
	AUTO	115 Engine Repair (5)
	AUTO	124 Auto Brake Systems (4)
	AUTO	125 Auto Electrical Systems (5)
	AUTO	225 Auto Suspen and Steer (5)
	AUTO	240 Automotive Internship (2)
	BMGT	175 Management (3)
	BMGT	200 Marketing (3)
	BMGT	223 Business Ethics (3)
	BMGT	280 Personnel Management (3)
	BSAD	150 Intro to Business (3)
	BSAD	230 Business Law (3)
	BSAD	125 Computer Apps (3)

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Collision Repair Technology**

The Collision Repair Technology program prepares students for employment in the field of collision repair or related occupations in the automotive industry. The program is built around nationally recognized standards from the National Institute for Automotive Service Excellence (ASE) provided through the National Automotive Technicians Education Foundation (NATEF). Instructional materials for the core collision repair courses are provided through I-CAR (Inter-Industry Conference on Auto Collision Repair). The program is not currently ASE/NATEF certified, but the core courses cover all of the high-priority ASE/NATEF competencies in Non-Structural Repair, Structural Repair, and Painting/Finishing.

<b>Orientation</b>			<b>1 hour</b>		
COLL	101	College Orientation (1)			
<b>Communications</b>			<b>9 hours</b>		
<b>Written Communications (6 hours)</b>					
ENGL	100*	Mechanics of Composition (3)		ENGL	102* Advanced English Composition(3)
ENGL	101*	English Composition (3)		ENGL	203* Technical Report Writing (3)
<b>Oral Communications (3 hours)</b>					
SPCH	101	Fundamentals of Speech (3)			
<b>Mathematics</b>			<b>3 hours</b>		
MATH	104*	Technical Mathematics (3)			
or	BSAD	121*	Business Mathematics (3)		
<b>Missouri Constitution</b>			<b>3 hours</b>		
PLSC	103	National, State, Local Government (3)			
or	HIST	106	U.S. History I (3)		
<b>Collision Repair Core Courses</b>			<b>32 hours</b>		
WELD	113	Introduction to Welding (3)			
WELD	145*	Gas-Metal Arc Welding (GMAW) (3)			
AUTO	125	Automotive Electrical Systems (5)			
AUTO	214	Automotive Air Conditioning (4)			
AUTO	225	Automotive Suspension/Steering (5)			
CLRP	102	Collision Repair I (3)			
CLRP	104*	Collision Repair II (3)			
CLRP	202*	Collision Repair III (3)			
CLRP	204*	Collision Repair IV (3)			
<b>Support Courses</b>			<b>8 hours</b>		
BSAD	125*	Business Computer Applications (3)			
BSAD	103	Professional Development (2)			
BSAD	150	Introduction to Business (3)			
<b>Approved Electives</b>			<b>5 hours</b>		
Any course not specifically required above and for which any pre-requisite courses have been completed from among: AMT, AUTO, BSAD, CNS, CONS, DIES, DRFT, or WELD. Other courses upon approval of advisor or Division Chair.					
<b>Total Hourly Requirement</b>			<b>61 hours</b>		



## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Computer and Network Support Technology**

The Computer and Network Support Technology program (CNS) prepares students for employment as support personnel in the areas of computer and information services. Students successfully completing this program will be able to setup and maintain microcomputer systems as well as perform basic administrative/maintenance tasks in a networked computing environment.

systems as well as perform basic administrative/maintenance tasks in a networked computing environment.

<b>Orientation</b>		<b>1 hour</b>	
COLL	101 College Orientation (1)		
<b>Communications</b>		<b>9 hours</b>	
<b>Written Communications (6 hours)</b>			
ENGL	100 Mechanics of Composition (3)		
ENGL	101* English Composition I (3)		
ENGL	102* Advanced English Composition (3)		
ENGL	203* Technical Report Writing (3)		
<b>Oral Communications (3 hours)</b>			
SPCH	101 Fundamentals of Speech (3)		
<b>Mathematics</b>		<b>3 hours</b>	
MATH	111* College Algebra (3)		
MATH	104* Technical Mathematics		
<b>Missouri Constitution</b>		<b>3 hours</b>	
PLSC	103 National, State, Local Government (3)		
HIST	106 U.S. History (3)		
<b>Required Support Courses</b>		<b>5 hours</b>	
BSAD	103 Professional Development (2)	Or	CNS 105/106 Tech Career Development (2)
BSAD	125 Computer Applications (3)		
<b>Required CNS Courses</b>		<b>34 hours</b>	
CNS	101 Intro to Electronics (3)		
CNS	111* PC Basics I (3)		
CNS	112* PC Basics II (3)		
CNS	115* CISCO Network I (3)		
CNS	116* CISCO Network II (3)		
CNS	125* Programming for CNS Techs (3)		
CNS	217* CISCO Network III (3)		
CNS	218* CISCO Network IV (3)		
CNS	260* Microsoft Network Admin (3)		
CNS	265* Microsoft Exchange Admin (3)		
CNS	285* CNS Internship (3)		
<b>Required Electives</b>		<b>6 hours</b>	
CNS	250* Linux Network Admin (3)		
CNS	270* Network Security (3)		
CNS	275* Enterprise Administration (3)		
CNS	277* Data Management (3)		
Total Credit Hours for this degree:		<b>61 hours</b>	

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Diesel Technology**

Interesting and challenging career opportunities are offered by the transportation and agricultural industries in the area of diesel technology. Jobs available to graduates include technicians, equipment managers, mechanics, service center supervisors, parts personnel, and salesmen.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
ENGL	100	
ENGL	101*	
ENGL	102*	
ENGL	203*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Mathematics 3 hours</b>		
BSAD	121*	
<b>Missouri Constitution 3 hours</b>		
PLSC	103	
HIST	106	
<b>Major Courses 44 hours</b>		
DIES	124 Prevent Maintenance (4)	
DIES	134 Diesel Hydraulics (4)	
DIES	144 Diesel Engines I (4)	
DIES	164 Diesel Brake Systems (4)	
DIES	184 Electricity/Electronics (4)	
DIES	204 Diesel Powertrains (4)	
DIES	224 Diesel Steering & Suspension (4)	
DIES	234 Air Conditioning (4)	
DIES	244 Internship (4)	
DIES	284 Diesel Electrical/Electronics* (4)	
DIES	294 Diesel Engines II* (4)	
<b>Electives 3 hours</b>		
BSAD	125 Computer Apps (3)	

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Drafting & Design Technology**

The Drafting and Design program begins with basic drafting and progresses through advanced design and Computer Aided Drafting (CAD). During this study, the different fields of drafting that an employee may be exposed to are covered.

Drafting fields such as Architectural Drafting, Welding, Electronics, Plumbing and Structural Drafting are included to give the student some exposure to different areas in the industry. Computer aided drafting is taught in conjunction with all drafting classes to give the student experience in drawing and plotting drawings with the computer.

<b>Orientation 1 hour</b>			
COLL	101		
<b>Communications 9 hours</b>			
<b>Written Communications (6 hours)</b>			
ENGL	100	ENGL	102*
ENGL	101*	ENGL	203*
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Humanities 3 hours</b>			
ART	101		
ASL	101, 102		
ENGL	109, 120, 125		
HIST	101		
HUM	102, 103		
MUSC	101		
PHIL	101, 110, 121, 201, 202		
SPAN	101		
TA	205		
<b>Mathematics 3 hours</b>			
MATH	104*		
<b>Science 5 hours</b>			
PHYS	101		
<b>Missouri Constitution 3 hours</b>		<b>OR</b>	
HIST	106	PLSC	103, 104*
<b>Required Technical Courses 30 hours</b>		<b>OR</b>	
COMP	120 Computer Apps (3)	BSAD	125 Bus Comp Apps (3)
DRFT	101 Engineering Drawing (3)		
DRFT	103 Technical Drawing* (3)		
DRFT	105 Architectural Drawing (3)		
DRFT	115 Basic CAD (3)		
DRFT	141 Assembly Drawings* (3)		
DRFT	202 Machine Design* (3)		
DRFT	203 Tool & Die Design* (3)		
DRFT	205 Intermediate CAD* (3)		
DRFT	280 Drafting and Design Internship (3)		
<b>Approved Electives 9 hours</b>			
DRFT	102 Descrip Geometry (3)		
DRFT	120 Basic Civil Drafting* (3)		
DRFT	215 Advanced CAD* (3)		
DRFT	220 Geometric Dimen Toler* (3)		
CNS	101 Intro to Electronics (3)		
WELD	113 Intro to Welding (3)		
Other Electives Approved by Program Director			

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Energy Efficient Building Technology: Alternative Technologies Option**

The Energy Efficient Building Technology program prepares students for employment in the construction industry or in related occupations. The program is built around National Center for Construction Education and Research (NCCER) standards and is comprised of a core component covering basic employability skills, introductory carpentry, and green building practices coupled with specialty options of general construction, construction management, or alternative technologies. This Program of Study addresses the Alternative Technologies Option.

<b>Orientation</b>			<b>1 hour</b>	
COLL	101*	College Orientation (1)		
<b>Communications</b>			<b>9 hours</b>	
<b>Written Communications: 6 hours</b>				
ENGL	100	Mechanics of Composition (3)		
ENGL	101*	English Composition (3)		
ENGL	102*	Advanced English Composition(3)		
ENGL	203*	Technical Report Writing (3)		
<b>Oral Communications: 3 hours</b>				
SPCH	101	Fundamentals of Speech (3)		
<b>Missouri Constitution</b>			<b>3 hours</b>	
HIST	106	U.S. History I (3)		
PLSC	103	National, State, Local Govt (3)		
<b>Common Support Courses</b>			<b>8 hours</b>	
BSAD	125*	Computer Applications (3)		
BSAD	103	Professional Development (2)		
DRFT	105*	Architectural Drafting (3)		
<b>Common Construction Courses</b>			<b>15 hours</b>	<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
CONS	102	Introduction to Green Building (2)		None
CONS	105*	Introduction to Construction Technology (3)		CR: MATH 40/60, COMM 80
CONS	111*	Carpentry Fundamentals I (3)		PR: CONS 105
CONS	114*	Carpentry Fundamentals II (3)		PR: CONS 111, CR: CONS 102, MATH 50/70, ENGL 100
CONS	290*	Construction Internship (4)		PR: Sophomore Standing
<b>Specialty Courses: ALTERNATIVE TECHNOLOGIES</b>			<b>28 hours</b>	<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
<b>Required Courses: 25 hours</b>				
MATH	111*	College Algebra (3)		
AMT	102*	Intro to Industrial Electricity (3)		CR: MATH 50/70, COMM 80
CONS	155*	Basic HVAC (3)		PR: CONS 105 or AMT 111, CR: AMT 102, MATH 50/70
CONS	161*	Weatherization Technology (3)		PR: CONS 102, CONS 105, CR: MATH 50/70, ENGL 100
CONS	248*	Sustainable Construction (1)		PR: CONS 102, CONS 105, CR: MATH 100, ENGL 100
CONS	264*	Geothermal Heat Pump Systems (3)		PR: CONS 155, CR: MATH 100, ENGL 100
CONS	265*	Alternative Energy Technologies (3)		PR: CONS 102, CONS 105, CR: MATH 100, ENGL 100
CONS	266*	Energy Usage Auditing I (3)		PR: CONS 155, CONS 161, CR: MATH 100, ENGL 100
CONS	267*	Energy Usage Auditing II (3)		PR: CONS 266, CR: MATH 111
<b>Specialty Electives: Choose 3 hours</b>				
CONS	132*	Plumbing I (3)		PR: CONS 105
CONS	142*	Electrical Wiring I (3)		PR: CONS 105
CONS	173*	Carpentry Forms I (3)		PR: CONS 105
CONS	231*	Site Layout I (3)		CR: CONS 114, DRFT 105, MATH 100, ENGL 100
CONS	243*	Project Supervision (3)		PR: CONS 114
DEPT	XXX	Any Technology or Business Division Course (3)		
<b>Total Credit Hours for this Specialty:</b>			<b>64 hours</b>	

(\*) - These courses have pre-requisite requirements. See catalog description for details.

(\*\*) - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Energy Efficient Building Technology: Construction Management Option**

The Energy Efficient Building Technology program prepares students for employment in the construction industry or in related occupations. The program is built around National Center for Construction Education and Research (NCCER) standards and is comprised of a core component covering basic employability skills, introductory carpentry, and green building practices coupled with specialty options of general construction, construction management, or alternative technologies. This Program of Study addresses the Construction Management Option.

<b>Orientation</b>			<b>1 hour</b>		
COLL	101*	College Orientation (1)			
<b>Communications</b>			<b>9 hours</b>		
<b>Written Communications: 6 hours</b>					
ENGL	100	Mechanics of Composition (3)		ENGL	102* Advanced English Composition(3)
ENGL	101*	English Composition (3)		ENGL	203* Technical Report Writing (3)
<b>Oral Communications: 3 hours</b>					
SPCH	101	Fundamentals of Speech (3)			
<b>Missouri Constitution</b>			<b>3 hours</b>		
HIST	106	U.S. History I (3)			
PLSC	103	National, State, Local Government (3)			
<b>Common Support Courses</b>			<b>8 hours</b>		
BSAD	125*	Computer Applications (3)			
BSAD	103	Professional Development (2)			
DRFT	105*	Architectural Drafting (3)			
<b>Common Construction Courses</b>			<b>15 hours</b>	<b>Prerequisites (PR) or Corequisites (CR) (**)</b>	
CONS	102	Introduction to Green Building (2)		None	
CONS	105*	Introduction to Construction Technology (3)		CR: MATH 40/60, COMM 80	
CONS	111*	Carpentry Fundamentals I (3)		PR: CONS 105	
CONS	114*	Carpentry Fundamentals II (3)		PR: CONS 111, CR: CONS 102, MATH 50/70, ENGL 100	
CONS	290*	Construction Internship (4)		PR: Sophomore Standing	
<b>Specialty Courses: CONSTRUCTION MANAGEMENT</b>			<b>28 hours</b>	<b>Prerequisites (PR) or Corequisites (CR) (**)</b>	
<b>Required Courses: 22 hours</b>					
MATH	111*	College Algebra (3)			
CONS	173*	Carpentry Forms I (3)		PR: CONS 105	
CONS	231*	Site Layout I (3)		CR: CONS 114, DRFT 105, MATH 100, ENGL 100	
CONS	235*	Site Layout II (3)		PR: CONS 231, CR: MATH 111	
CONS	243*	Project Supervision (3)		PR: CONS 114	
CONS	244*	Project Management I (3)		PR: CONS 243, CR: MATH 100	
CONS	246*	Project Management II (3)		PR: CONS 244, CR: MATH 111	
CONS	248*	Sustainable Construction (1)		PR: CONS 102,CONS 105, CR:MATH 100, ENGL 100	
<b>Specialty Electives: 6 hours</b>					
CONS	132*	Plumbing I (3)		PR: CONS 105	
CONS	134*	Plumbing II (3)		PR: CONS 132, CR: MATH 50/70, ENGL 100	
CONS	142*	Electrical Wiring I (3)		PR: CONS 105	
CONS	144*	Electrical Wiring II (3)		PR: CONS 142, CR: MATH 50/70, ENGL 100	
CONS	175*	Carpentry Forms II (3)		PR: CONS 173, CR: MATH 50/70, ENGL 100	
CONS	122*	Masonry I (3)		PR: CONS 105	
CONS	124*	Masonry II (3)		PR: CONS 122, CR: MATH 50/70, ENGL 100	
CONS	161*	Weatherization Technology (3)		PR: CONS 102,CONS 105, CR:MATH 50/70,ENGL 100	
CONS	265*	Alternative Energy Technologies (3)		PR: CONS 105, CR: MATH 50/70, ENGL 100	
DEPT	XXX	Any Technology or Business Division Course (3)			
<b>Total Credit Hours for this Specialty:</b>			<b>64 hours</b>		

\* - These courses have pre-requisite requirements. See catalog description for details.

\*\* - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Energy Efficient Building Technology: General Construction Option**

The Energy Efficient Building Technology program prepares students for employment in the construction industry or in related occupations. The program is built around National Center for Construction Education and Research (NCCER) standards and is comprised of a core component covering basic employability skills, introductory carpentry, and green building practices coupled with specialty options of general construction, construction management, or alternative technologies. This Program of Study addresses the General Construction Option.

<b>Orientation</b>			<b>1 hour</b>	
COLL	101*	College Orientation (1)		
<b>Communications</b>			<b>9 hours</b>	
<b>Written Communications: 6 hours</b>				
ENGL	100	Mechanics of Composition (3)		
ENGL	101*	English Composition (3)		
ENGL	102*	Advanced English Composition (3)		
ENGL	203*	Technical Report Writing (3)		
<b>Oral Communications: 3 hours</b>				
SPCH	101	Fundamentals of Speech (3)		
<b>Missouri Constitution</b>			<b>3 hours</b>	
HIST	106	U.S. History I (3)		
PLSC	103	National, State, Local Government (3)		
<b>Common Support Courses</b>			<b>8 hours</b>	
BSAD	125*	Computer Applications (3)		
BSAD	103	Professional Development (2)		
DRFT	105*	Architectural Drafting (3)		
<b>Common Construction Courses</b>			<b>15 hours</b>	<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
CONS	102	Introduction to Green Building (2)		None
CONS	105*	Introduction to Construction Technology (3)		CR: MATH 40/60, COMM 80
CONS	111*	Carpentry Fundamentals I (3)		PR: CONS 105
CONS	114*	Carpentry Fundamentals II (3)		PR: CONS 111, CR: CONS 102, MATH 50/70, ENGL 100
CONS	290*	Construction Internship (4)		PR: Sophomore Standing
<b>Specialty Courses: GENERAL CONSTRUCTION</b>			<b>27 hours</b>	<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
<b>Required Courses: 21 hours</b>				
MATH	104*	Technical Mathematics (3)		
CONS	115*	Carpentry Framing and Finishing I (3)		PR: CONS 105
CONS	117*	Carpentry Framing and Finishing II (3)		PR: CONS 115, CR: MATH 50/70, ENGL 100
CONS	132*	Plumbing I (3)		PR: CONS 105
CONS	142*	Electrical Wiring I (3)		PR: CONS 105
CONS	173*	Carpentry Forms I (3)		PR: CONS 105
CONS	175*	Carpentry Forms II (3)		PR: CONS 173, CR: MATH 50/70, ENGL 100
<b>Specialty Electives: 6 hours</b>				
CONS	134*	Plumbing II (3)		PR: CONS 132, CR: MATH 50/70, ENGL 100
CONS	144*	Electrical Wiring II (3)		PR: CONS 142, CR: MATH 50/70, ENGL 100
CONS	122*	Masonry I (3)		PR: CONS 105
CONS	124*	Masonry II (3)		PR: CONS 122, CR: MATH 50/70, ENGL 100
CONS	161*	Weatherization Technology (3)		PR: CONS 102, CONS 105, CR: MATH 50/70, ENGL 100
DEPT	XXX	Any Technology or Business Division Course (3)		
<b>Total Credit Hours for this Specialty:</b>			<b>63 hours</b>	

(\*) - These courses have pre-requisite requirements. See catalog description for details.

(\*\*) - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Fire Science**

The Fire Science Program at Crowder College-Webb City prepares the student to enter an exciting career as a firefighter. The degree offers the opportunity for current firefighters to prepare themselves as supervisors and leaders in their own departments. It also prepares students who wish to begin a career in fire fighting.

<b>Orientation 1 hour</b>					
	COLL	101			
<b>Communications 9 hours</b>					
<b>Written Communications (6 hours)</b>					
	ENGL	101			
	ENGL	203*			
<b>Oral Communications (3 hours)</b>					
	SPCH	101*			
<b>Mathematics 3 hours</b>					
	MATH	111*	OR	BSAD	121*
<b>Science 5 hours</b>					
	CHEM 101, CHEM 111*, BIOL 101, BIOL 152				
<b>Missouri Constitution 3 hours</b>					
	HIST	106	OR	PLSC	103, 104*
<b>Required Technical Courses 30 hours</b>					
	FSCI	102	Bldg Con Related to F/S* (3)		
	FSCI	107	Fire Svs Hyd & Pump (3)		
	FSCI	108	Fire Protection System (3)		
	FSCI	109	Legal Aspect of Em Sv (3)		
	FSCI	205	Tactics & Strategies* (3)		
	FSCI	208	The Company Officer (3)		
	FSCI	210	Fire Service Instructor (3)		
	FSCI	212	Occup Safe/Health FS (3)		
			Fire Fighter I (3)		
			Fire Fighter II (3)		
	(Fire Fighter I & II must come from a state approved training Program.)				
<b>Approved Electives 15 hours</b>					
	EMT	101	Emer Med Tech (6)		
	FSCI	103	Fire Investigation (3)		
	FSCI	202	Hazardous Materials (3)		
	FSCI	207	Fire Prev/Code Enforc (3)		
	FSCI	263	Prob FS (Internship) (3)		

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

### Health Information Technology

The Health Information Technology (HIT) program prepares students for employment in the health information management industry or in related health information technology occupations. The program is built around AHIMA (American Health Information Management Association) curriculum competencies and knowledge cluster requirements as well as comprised of the general education core requirements.

In order to promote student success in the HIT program, the following criteria is established for admission: a) high school GPA of at least 2.0 or a passing GED score and b) a minimum cumulative GPA of 2.0 for previous college hours. All courses must be completed with a grade of C or better in order to progress to the next course and an overall GPA of 2.5 to successfully complete the program.

Prior to enrolling in the HIT 290 course, students will be required to have a physical examination and verify annual tuberculosis status. A Criminal Background Check along with a drug screen may be required, and students are responsible for any costs incurred. If a negative result is returned, the student may not be able to complete the Clinical Application Experience.

**Students must earn 67 hours for this degree**

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
ENGL	101	English Composition (3)
ENGL	102*	Advance English Composition (3)
<b>Oral Communications (3 hours)</b>		
SPCH	101	Fundamentals of Speech (3)
<b>Mathematics 3 hours</b>		
MATH	111*	College Algebra (3)
<b>Missouri Constitution 3 hours</b>		
PLSC	103	National, State, Local Government (3)
HIST	106	U.S. History I (3)
<b>Health Information Technology Core 48 hours</b>		
BMGT	175	Management (3)
BSAD	125	Business Computer Applications (3)
HIT	110*	Introduction to Health Information Technology (3)
HIT	115*	Health Information Management Systems (3)
HIT	200*	Alternative Healthcare Delivery Systems (3)
HIT	205*	Human Anatomy and Physiology I for HIT (3)
HIT	206*	Human Anatomy and Physiology II for HIT (3)
HIT	210*	Pathophysiology w/ Pharmacology for HIT (3)
HIT	220*	ICD Coding (3)
HIT	230*	CPT Coding (3)
HIT	240*	Applied Coding (3)
HIT	250*	Quality Management in Healthcare (3)
HIT	260*	Healthcare Law and Ethics (3)
HIT	280*	Healthcare Statistics and Research (3)
HIT	290*	Clinical Application Experience (3)
OA	215*	Medical Terminology (3)
<b>Social Science Electives 3 hours</b>		
PSYC	101	General Psychology (3)
SOC	101	General Sociology (3)

\*Prerequisite requirement



# ASSOCIATE OF APPLIED SCIENCE DEGREE

## Management

To earn the AAS in Management, a student must meet the requirements of the General Education Core and the Management Core. All courses completed in either the Business Management Certificate I or II count toward this degree.

\*All students pursuing this degree must take and pass the approved Technical Skills Assessment (TSA) prior to graduating.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications (6 hours)</b>		
ENGL	101*	
ENGL	102*	
ENGL	203*	
<b>Oral Communications (3 hours)</b>		
SPCH	101*	
<b>Mathematics 3 hours</b>		
BSAD	121*	
<b>Missouri Constitution 3 hours</b>		
PLSC	103, 104*	
<b>Business Core 13 hours</b>		
BSAD	125	Business Computer Apps (3)
BSAD	130	Bus Communications* (3)
BMGT	223	Business Ethics (3)
BSAD	103	Professional Dev (2)
BMGT	290	Internship (2)
<b>Management Core 32 hours</b>		
ACCT	201	Prin of Accounting I (3)
ACCT	216	Financial Analysis (3)
BMGT	175	Management (3)
BMGT	200	Marketing (3)
BMGT	285	Human Resource Management (3)
BMGT	295	Business Management Capstone (3)
BSAD	108	Personal Finance (3)
BSAD	150	Intro to Business (3)
BSAD	215	Spreadsheets (2)
BSAD	230	Business Law (3)
ECON	201	Principles of Economics (3)
<b>ELECTIVES 3 hours</b>		
Electives can be taken from ACCT, BSAD, BMGT, OA, or ECON 202		

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Office Administration Specialist**

To earn the AAS in Office Administration, a student must meet the requirements of the General Education Core, Office Administration Core, and the requirements of the Clerical Office Specialist Core. All students pursuing this degree must take and pass the approved Technical Skills Assessment (TSA) prior to graduating.

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications 6 hours from the following</b>		
ENGL	100	
ENGL	101*	
ENGL	102	
ENGL	203*	
<b>Oral Communications 3 hours</b>		
SPCH	101*	
<b>Mathematics 3 hours</b>		
BSAD	121*	
<b>Missouri Constitution 3 hours from the following</b>		
PLSC	103, 104*	
HIST	106	
<b>Business Core 13 hours</b>		
BSAD	125 Computer Apps (3)	
BSAD	130 Business Communications* (3)	
BMGT	223 Business Ethics (3)	
BSAD	103 Professional Development (2)	
OA	231 Internship (2)	
<b>Office Administration Core 31 hours</b>		
OA	102 Filing (3)	
OA	107 College Keyboarding (3)	
OA	200 Word processing (3)	
OA	108 Intro to Transcription (3)	
OA	210 Office Administration Transcription* (3)	
OA	211 Sec Off Procedures (3)	
ACCT	101 Practical Accounting (3) <b>OR</b> ACCT 201 Prin of Accounting I	
BSAD	108 Personal Finance (3)	
OA	113 Desktop Publishing (3)	
BSAD	215 Spreadsheets (2)	
BSAD	216 Database Management (2)	
<b>Electives 3 hours</b>		
Electives can be taken from ACCT, BSAD, BMGT or OA		

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Health Care Specialist**

This AAS degree provides students with the broad range of health, science, and office skills helpful for initial placement and career advancement in front and back office positions in a wide range of medical facilities such as in hospitals, doctor offices, veterinary clinics, pharmacies, and long-term and in-home care facilities

<b>Orientation 1 hour</b>		
COLL	101	
<b>Communications 9 hours</b>		
<b>Written Communications 6 hours from the following</b>		
ENGL	100 Mechanics of Comp (3)	
ENGL	101 English Composition (3)	
ENGL	102 English Composition II* (3)	
ENGL	203 Technical Report Writing* (3)	
<b>Oral Communications 3 hours</b>		
SPCH	101* Fundamentals of Speech (3)	
<b>Mathematics 3 hours</b>		
BSAD	121* Business Mathematics (3)	
<b>Missouri Constitution 3 hours from the following</b>		
PLSC	103, 104* National, State, Local Gov (3)	
HIST	106 U.S. History (3)	
<b>Health Sciences 17 hours</b>		
Health Care related courses from programs such as Surgical Tech, Pharmacy Tech, Certified Nurses Assistant, EMT, Paramedic, Nursing, Vet Tech, Biological Sciences, etc. (e.g. PE 115 First Aid, BIOL 185 Medical Laboratory Techniques)		
<b>Biological Sciences 5 hours</b>		
BIOL	101 General Biology (5)	
BIOL	152 A & P I	
<b>Business Core 13 hours</b>		
BSAD	103 Professional Development (2)	
BSAD	125 Computer Applications* (3)	
BSAD	130 Business Communications* (3)	
BMGT	223 Business Ethics (3)	
OA	233 Medical Office Internship (2)	
<b>Medical Office Specialist 9 hours</b>		
OA	212 Med Office Procedures (3)	
OA	215 Medical Terminology (3)	
OA	220 Medical Coding (3)	
<b>Electives 3 hours</b>		
BMGT	175 Management (3)	
BIOL	101 Gen Biology (5)	
OA	100 Practical Accounting (3)	
ACCT	201 Principles of Accounting I(3)	
		<b>OR:</b>
		OA 108 Intro to Transcription (3)
		OA 208 Medical Transcription (3)

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Medical Office Specialist**

To earn the AAS in Office Administration, a student must meet the requirements of the General Education Core, Office Administration Core, and the requirements of the Medical Office Specialist Core. All students pursuing this degree must take and pass the approved Technical Skills Assessment (TSA) prior to graduating.

<b>Orientation 1 hour</b>	
COLL 101	
<b>Communications</b>	<b>9 hours</b>
<b>Written Communications (6 hours from the following)</b>	
ENGL	100 (3)
ENGL	101* (3)
ENGL	102 (3)
ENGL	203* (3)
<b>Oral Communications (3 hours)</b>	
SPCH	101*
<b>Mathematics</b>	<b>3 hours</b>
BSAD	121*
<b>Missouri Constitution</b>	<b>3 hours</b>
PLSC	103, 104* (3)
HIST	106 (3)
<b>Business Core</b>	<b>13 hours</b>
BSAD	125 Computer Apps (3)
BSAD	130 Bus Communications* (3)
BMGT	223 Business Ethics (3)
BSAD	103 Professional Dev (2)
OA	233 Medical Office Internship (2)
<b>Medical Office Core</b>	<b>32 hours</b>
OA	102 Filing Systems (3)
OA	107 College Keyboarding (3)
OA	200 Word Processing (3)
OA	108 Intro to Transcription (3)
OA	208 Medical Transcription (3)
OA	212 Med Office Procedures (3)
ACCT	101 Practical Accounting (3) <b>OR</b> ACCT 201 Principles of Accounting I
OA	215 Medical Terminology (3)
BSAD	216 Database Management (2)
HIT	220* ICD Coding (3)
HIT	230* CPT Coding (3)
<b>Electives</b>	<b>2 hours</b>
Electives can be taken from ACCT, BSAD, BMGT, OA, HIT, SPAN 111	

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Paramedical Science**

The Paramedical Science degree is designed for the professional paramedic positions in Emergency Medical Services. The accompanying certificate is designed to be offered in a 27 week sequence. This program prepares graduates to sit for the Paramedic certification exam. EMT licensure, EMTP 299, and admission to the program are prerequisites for this degree.

Candidate must earn 66 credit hours in order to successfully complete the requirements of this degree.

<b>Orientation 1 hour</b>			
COLL 101			
<b>Communications</b>		<b>9 hours</b>	
<b>Written Communications (6 hours)</b>			
ENGL	101*		
ENGL	102*, 203*		
<b>Oral Communications (3 hours)</b>			
SPCH	101*		
<b>Mathematics</b>		<b>3 hours</b>	
MATH	100		
<b>Science</b>		<b>14 hours</b>	
BIOL	101, 152		
CHEM	101		
EMPT	299		
<b>Missouri Constitution</b>		<b>3 hours</b>	<b>Or</b>
HIST	106	PLSC	103, 104*
<b>Paramedic Courses</b>		<b>36 hours</b>	
EMTP	201 Paramedic I* (12)		
EMTP	202 Paramedic II* (12)		
EMTP	203 Paramedic III* (12)		

\*Prerequisite requirement

## ASSOCIATE OF APPLIED SCIENCE DEGREE

**Veterinary Technology**

The Crowder College Veterinary Technology Program is a 78 credit hour program which is fully accredited by the American Veterinary Medical Association (AVMA) and prepares students for careers as veterinary technicians. This is a selective admission program. Applications are accepted in April for the class which begins the following August. An ACT test result must accompany the application. Students must complete a minimum of BIOL 101 or BIOL 110, MATH 50 (or appropriate placement), ENGL 100 (or appropriate placement), and LOC 50 (or appropriate placement), and have worked with or observed a licensed veterinarian in practice for a minimum of 20 clock hours to be eligible for the program. To be licensed as a Registered Veterinary Technician in Missouri, a student must be at least 19 years of age, graduate from an AVMA accredited program, pass the Veterinary Technician National Examination, and pass the Missouri State Veterinary Medical Board Examination. An applicant must be approved by the Missouri State Veterinary Medical Board, or the State Veterinary Medical Board of any other state in which the student wishes to be licensed, before being allowed to sit for these examinations.

<b>Orientation</b>			<b>1 hour</b>		
AGRI	111	Ag Career Orientation (1)	or	COLL	101 College Orientation (1)
<b>Communications</b>			<b>6 hours</b>		
<b>Written Communications (3 hours)</b>					
ENGL	101*	English Composition (3)			
ENGL	102	Advanced English Composition (3)			
ENGL	103	English Honors Composition (6)			
ENGL	203	Technical Report Writing (3)			
<b>Oral Communications (3 hours)</b>					
SPCH	101	Fundamentals of Speech (3)			
<b>Mathematics</b>			<b>3 hours</b>		
MATH	100*	Intermediate Algebra (3)	or	MATH	111* College Algebra (3)
MATH	107	Introduction to Mathematics (3)			
MATH	150 & 160	Calculus I (5)			
<b>Missouri Constitution</b>			<b>3 hours</b>		
PLSC	103	National, State, Local Government (3)	or	HIST	106 U.S. History I (3)
<b>Science</b>			<b>15 hours</b>		
BIOL	101	General Biology (5)	or	BIOL	110* General Zoology (5)
CHEM	101	Survey of Chemistry (5)	or	CHEM	111* General Chemistry (5)
BIOL	220*	General Microbiology (5)			
<b>General Agriculture</b>			<b>15 hours</b>		
AGEC	223	Ag Computer Applications (3)			
ANSC	114	Animal Science (4)			
ANSC	223*	Farm Animal Health (3)			
ANSC	233	Horse Science (3)			
VETC	101	Intro to Veterinary Technology (2)			
<b>Program Core</b>			<b>35 hours</b>		
VETC	110*	Sanitation and Animal Care (2)	VETC	250*	Clinical Pathology II (3)
VETC	120*	Veterinary Hospital Technology I (3)	VETC	263*	Lg Animal Medicine and Surgery (3)
VETC	130*	Clinical Pathology I (3)	VETC	270*	Board Review (1)
VETC	140*	Companion Animal Technology (3)	VETC	280*	Radiology & Electronic Techniques (2)
VETC	180*	Veterinary Anatomy and Physiology (4)	VETC	284*	Vet Tech Internship (4)
VETC	220*	Veterinary Hospital Technology II (3)	VETC	285*	Vet Tech Clinical Experience I (1)
VETC	230*	Laboratory Animal and Avian Technology (2)	VETC	286*	Vet Tech Clinical Experience II (1)
<b>Total Hourly Requirement</b>			<b>78 hours</b>		

\*Prerequisite Requirement

## CERTIFICATES OF STUDY

### CERTIFICATE

#### Applied Behavior Analysis Certificate

This certificate in Applied Behavior Analysis (ABA) will build a specific set of evidence-based practices, methodologies and interventions for professionals who work or plan to work one-on-one in an educational or health care setting with individuals diagnosed with autism. For students who currently hold or are working towards a bachelor's degree, the Applied Behavior Analysis Certificate training program has been designed to meet the educational requirements needed to become a Board Certified Assistant Behavior Analyst. Students are required to successfully complete a portfolio in PSYC 290 to complete this certificate program.

<b>Orientation</b>		<b>1 hour</b>
COLL	101 College Orientation	
<b>Major Courses</b>		<b>18 hours</b>
PSYC	205 Intro to Autism and Applied Behavior Analysis (3)	
PSYC	206 Ethics, Assessment & Intervention in ABA* (3)	
PSYC	207 Evaluation, Measurement & Interpretation (3)	
PSYC	208 Behavior Change and Systems Support* (3)	
PSYC	290 Clinical I-Supervised Field Experience* (3)	
PSYC	292 Clinical II-Supervised Field Experience* (3)	
<b>Total Hourly Requirement</b>		<b>19 hours</b>

\*Prerequisite/Corequisite requirement

### CERTIFICATE

#### Autism Assistant Certificate

This certificate program prepares students to work one-on-one in an educational or health care setting with individuals diagnosed with Autism. Emphasis will be placed on Applied Behavior Analysis (ABA) theories and techniques. Students must complete the required 19 credit hours of courses. Upon completion of the certificate, students may continue and pursue an AA in Child Development, AA in Psychology, AA in General Studies or an AA in Teaching Degree. Students are required to successfully complete a portfolio in PSYC 290 to complete this certificate program.

<b>Orientation</b>		<b>1 hour</b>
COLL	101 College Orientation	
<b>Major Courses</b>		<b>18 hours</b>
EDUC	230 Educational Psychology* (3)	
PSYC	101 General Psychology* (3)	
PSYC	200 Developing Person Through Lifespan (3)	
PSYC	203 Autism Spectrum Disorders (3)	
PSYC	204 Classroom Management and ABA (3)	
PSYC	290 Clinical I-Supervised Field Experience* (3)	
<b>Total Hourly Requirement</b>		<b>19 hours</b>

\*Prerequisite/Corequisite requirement

## CERTIFICATE

### Auto Technology

The Automotive Technology Professional Certificate is aimed at the student who has no requirement for a college degree. The program is designed to give the student a working knowledge and the entry-level skills required to earn a living in this competitive field. Students must complete a total of 46 hours for the certificate. The additional certificates are in addition to the academic certificate.

<b>Orientation</b> <b>1 hour</b>			
	COLL	101	
	AUTO	114	Auto Fuel Systems (4)
	AUTO	115	Engine Repair (5)
	AUTO	124	Auto Brake Systems (4)
	AUTO	125	Auto Electrical Systems (5)
	AUTO	214	Auto Air Conditioning (4)
	AUTO	215	Auto Emission Cont Sys (5)
	AUTO	223	Auto Power Train Sys (3)
	AUTO	224	Computer Engine Cont (4)
	AUTO	225	Auto Suspension and Steering (5)
	BSAD	150	Intro to Business (3)
	BSAD	125	Computer Apps (3)

\*Prerequisite requirement

## CERTIFICATE

### Automation/Robotics Technician

The Automation/Robotics Technician certificate prepares students for employment in industries with automated robotic processes. Successful graduates will possess the ability to perform entry level maintenance and repairs to industrial automated equipment and robots.

<b>Orientation</b> <b>1 hour</b>			
	COLL	101	College Orientation (1)
<b>Communications</b> <b>2 hours</b>			
	COLL	103	Practical Communications (2)
<b>Mathematics</b> <b>3 hours</b>			
	MATH	111*	College Algebra (3)
<b>or</b>	MATH	104*	Technical Mathematics (3)
<b>Major Courses</b> <b>25 hours</b>			
	AMT	102	Introduction to Industrial Electricity (3)
	AMT	104*	Electrical Motor Controls (3)
	CNS	101	Introduction to Electronics (3)
	AMT	204*	Programmable Controllers I (3)
	AMT	182	Introduction to Automated Robotics (3)
	AMT	284*	Automated Robotic Programming (3)
	AMT	206*	Programmable Controllers II (3)
	DIES	134	Hydraulics (4)
<b>Total Hourly Requirement</b> <b>31 hours</b>			

\* - Prerequisite course(s) or minimum test scores required. See catalog course descriptions for details.

#### Catalog Disclaimer for Selected Programs:

Final state and financial aid approval is pending on this program. Please check with a Technology (CCCI) Division advisor for status before enrolling.



## CERTIFICATE

### Biodiesel Technician

The Biodiesel Technician certificate provides students with a unique applied foundation in biodiesel production technology. The curriculum is designed to prepare students for entry level employment or further study in the area. Students are required to complete a portfolio process which includes an interview as part of this certificate program.

Students must earn 17 hours for this certificate.

<b>Orientation</b>		<b>1 hour</b>
COLL	101 College Orientation	
<b>Major Courses</b>		<b>16 hours</b>
BIOL	101 General Biology (5)	
CHEM	101 Survey of Chemistry (5)	
ENER	140 Introduction to Biofuels (3)	
ENER	242 Biodiesel Production (3)	

## CERTIFICATE

### Bioethanol Fuel Technician

The Bioethanol Fuel Technician certificate provides students with a unique applied foundation in bioethanol fuel production technology. The curriculum is designed to prepare students for entry level employment or further study in the area. Students are required to complete a portfolio process which includes an interview as part of this certificate program.

Students must earn 20 hours for this certificate.

<b>Orientation</b>		<b>1 hour</b>		
COLL	101 College Orientation		<b>OR</b>	AGRI 111
<b>Major Courses</b>		<b>19 hours</b>		
BIOL	101 General Biology (5)			
CHEM	101 Survey of Chemistry (5)			
ENER	140 Introduction to Biofuels (3)			
ENER	244 Bioethanol Fuel Production (3)			
ANSC	230 Agri-Waste Management (3)			

\*Prerequisite requirement

## CERTIFICATE

### Biofuels Technician

The Biofuels Technician certificate provides students with a unique applied foundation in biofuels production technology, incorporating all three of the major production areas: biodiesel, bioethanol fuel, and biogas. The curriculum is designed to prepare students for entry level employment or further study in the area. Students are required to complete a portfolio process which includes an interview as part of this certificate program.

Students must earn 26 hours for this certificate.

<b>Orientation</b>		<b>1 hour</b>		
COLL	101 College Orientation		<b>OR</b>	AGRI 111
<b>Major Courses</b>		<b>25 hours</b>		
BIOL	101 General Biology (5)			
CHEM	101 Survey of Chemistry (5)			
ENER	140 Introduction to Biofuels (3)			
ENER	242 Biodiesel Production (3)			
ENER	244 Bioethanol Fuel Production (3)			
ENER	246 Biogas Production (3)			
ANSC	230 Agri-Waste Management (3)			

## CERTIFICATE

### Biogas Technician

The Biogas Technician certificate provides students with a unique applied foundation in biogas production technology. The curriculum is designed to prepare students for entry level employment or further study in the area. Students are required to complete a portfolio process which includes an interview as part of this certificate program.

Students must earn 20 hours for this certificate.

<b>Orientation</b>		<b>1 hour</b>		
COLL	101	College Orientation	<b>OR</b>	AGRI 111
<b>Major Courses</b>		<b>19 hours</b>		
BIOL	101	General Biology (5)		
CHEM	101	Survey of Chemistry (5)		
ENER	140	Introduction to Biofuels (3)		
ENER	246	Biogas Production (3)		
ANSC	230	Agri-Waste Management (3)		

## CERTIFICATE

### Certified Nurse Assistant Specialist Certificate

This certificate program prepares students for employment as a Certified Nurse Assistant with medical skills helpful for initial placement in health care settings such as a hospital, clinic, long term care facility or home health; and students have a career path into the Health Care Specialist AAS.

Students must earn 17 hours for this certificate.

<b>Orientation</b>			<b>1 hour</b>
COLL	101	College Orientation	
<b>Major Courses</b>			<b>7 hours</b>
CNA	101	CNA Techniques (5)	
CNA	102	CNA Clinical Experience (2)	
<b>Approved Electives</b>			<b>9 hours</b>
CNA	106	Phlebotomy (3)	
CNA	107	EKG (3)	
CNA	110	Restorative Nurse Assistant and CNA 111 Restorative Nurse Assistant Clinical (3)	
OA	215	Medical Terminology (3)	
<b>Certification Component</b>			
Passing the Missouri certification exam is NOT a requirement for obtaining this certificate from Crowder College; however, the exam must be taken as part of the program. Most medical facilities require Missouri certification for employment so the intent of the program and the student is to pass the certification exam.			

## CERTIFICATE

### Cisco Networking Certificate

This certificate provides an opportunity for students not wishing to complete a full two-year program in computer and network support to acquire the basic computer networking infrastructure skills required for entry-level employment in the information technology/services area. Successful graduates will be able to utilize industry terminology, setup/maintain infrastructure components of both local and wide-area computer networks, and recognize/mitigate common network security threats. The program is built around four basic internetworking courses provided online by Cisco Services and taught in Crowder's classroom by a Cisco-certified instructor. Students successfully completing the program will be qualified to complete and pass Cisco's CCNA (Certified Cisco Network Administrator) exam, although neither taking nor passing the CCNA exam is a formal requirement for obtaining the certificate.

Students must earn a minimum\* of 19 hours for this certificate.

<b>Orientation 1 hour</b>			
	COLL	101	
<b>Required 18 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) **</b>	
CNS	101	Introduction to Electronics (3)	CR: CNS 111, CNS 115, MATH 40/60, COMM 80
CNS	111*	PC Basics (3)	CR: CNS 101, CNS 115, MATH 40/60, COMM 80
CNS	115*	Cisco I (3)	CR: CNS 101, CNS 111, MATH 40/60, COMM 80
CNS	116*	Cisco II (3)	PR: CNS 115
CNS	217*	Cisco III (3)	PR: CNS 116
CNS	218*	Cisco IV (3)	PR: CNS 217
<b>Total Hourly Requirement: 19 hours</b>			

\* Prerequisite courses or equivalent placement exam scores required.

\*\* Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

## CERTIFICATE

### Collision Repair I Technician Certificate

This certificate program trains graduates for entry-level employment in basic collision repair. Applicants must complete Crowder's standard entrance examination to determine placement in all courses having prerequisite requirements.

Students must earn a minimum\* of 19 hours for this certificate.

<b>Orientation: 1 hour</b>			
	COLL	101	College Orientation (1)
<b>Collision Repair Core Courses: 18 hours</b>		<b>Course Co-requisites</b>	
CLRP	102*	Collision Repair I (3)	MATH 40, LOC 40, COMM 80 or equivalent placement scores
CLRP	104*	Collision Repair II (3)	CLRP 102
CLRP	202*	Collision Repair III (3)	CLRP 104, MATH 50, LOC 50 or equivalent placement scores
CLRP	204*	Collision Repair IV (3)	CLRP 202
WELD	113*	Introduction to Welding (3)	MATH 40, LOC 40, COMM 80 or equivalent placement scores
WELD	145*	Gas Metal Arc Welding (3)	WELD 113, MATH 50, LOC 50 or equivalent placement scores
<b>Total Hourly Requirement: 19 hours</b>			

\* - Prerequisite courses or equivalent placement exam scores required. See catalog course descriptions.

#### Catalog Disclaimer for Selected Programs:

Final state and financial aid approval is pending on this program. Please check with a Technology (CCCI) Division advisor for status before enrolling.

## CERTIFICATE

### Collision Repair II Technician Certificate

This certificate program trains graduates for entry-level employment in automotive collision repair. Applicants must complete Crowder's standard entrance examination to determine placement in all courses having prerequisite requirements.

**Students must earn a minimum\* of 28 hours for this certificate.**

<b>Orientation: 1 hour</b>			
COLL	101	College Orientation (1)	
<b>Collision Repair Core Courses: 27 hours</b>		<b>Course Co-requisites</b>	
CLRP	102*	Collision Repair I (3)	MATH 40, LOC 40, COMM 80 or equivalent placement scores
CLRP	104*	Collision Repair II (3)	CLRP 102
CLRP	202*	Collision Repair III (3)	CLRP 104, MATH 50, LOC 50 or equivalent placement scores
CLRP	204*	Collision Repair IV (3)	CLRP 202
WELD	113*	Introduction to Welding (3)	MATH 40, LOC 40, COMM 80 or equivalent placement scores
WELD	145*	Gas Metal Arc Welding (3)	WELD 113, MATH 50, LOC 50 or equivalent placement scores
AUTO	214*	Automotive Air Conditioning (4)	MATH 40, LOC 40, COMM 80 or equivalent placement scores
AUTO	225*	Automotive Steering/Suspension (5)	MATH 40, LOC 40, COMM 80 or equivalent placement scores
<b>Total Hourly Requirement: 28 hours</b>			

\* - Prerequisite courses or equivalent placement exam scores required. See catalog course descriptions.

#### Catalog Disclaimer for Selected Programs:

Final state and financial aid approval is pending on this program. Please check with a Technology (CCCI) Division advisor for status before enrolling.

## CERTIFICATE

### Construction Technology

This certificate prepares students for entry-level employment in the construction industry with a skill set that will include construction safety, common hand/power tools, and basic carpentry, with additional specialty courses in framing/finishing, plumbing, residential wiring, or masonry. All courses are approved by NCCER (National Council for Construction Education and Research) and students will receive NCCER registration in each program module successfully completed.

**Students must earn a minimum\* of 16 hours for this certificate.**

<b>Orientation: 1 hour</b>			
COLL	101	College Orientation (1)	
<b>Construction Technology Core Courses: 9 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>	
CONS	105*	Introduction to Construction Technology (3)	CR: MATH 40/60, COMM 80
CONS	111*	Carpentry Fundamentals I (3)	PR: CONS 105
CONS	114*	Carpentry Fundamentals II (3)	PR: CONS 111, CR: MATH 50/70, ENGL 100
<b>Approved Specialty Electives: 6 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>	
CONS	115*	Carpentry Framing and Finishing I (3)	PR: CONS 105
CONS	117*	Carpentry Framing and Finishing II (3)	PR: CONS 115, CR: MATH 50/70, ENGL 100
CONS	132*	Plumbing I (3)	PR: CONS 105
CONS	134*	Plumbing II (3)	PR: CONS 132, CR: MATH 50/70, ENGL 100
CONS	142*	Electrical Wiring I (3)	PR: CONS 105
CONS	144*	Electrical Wiring II (3)	PR: CONS 142, CR: MATH 50/70, ENGL 100
CONS	122*	Masonry I (3)	PR: CONS 105
CONS	124*	Masonry II (3)	PR: CONS 122, CR: MATH 50/70, ENGL 100
<b>Total Hourly Requirement: 16 hours</b>			

\* - Prerequisite courses or equivalent placement exam scores required.

\*\* - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

# CERTIFICATE

## Diesel Technology

Students must complete 48 hours for the Diesel Technology certificate

<b>Orientation</b>		<b>1 hour</b>	
COLL	101	College Orientation	
<b>Major Courses</b>		<b>44 hours</b>	
DIES	124	Prevent Maintenance (4)	
DIES	134	Diesel Hydraulics (4)	
DIES	144	Diesel Engines I (4)	
DIES	164	Diesel Brake Systems (4)	
DIES	184	Electricity/Electronics (4)	
DIES	204	Diesel Powertrains (4)	
DIES	224	Diesel Steering & Suspension (4)	
DIES	234	Air Conditioning (4)	
DIES	244	Internship (4)	
DIES	284	Diesel Electrical/Electronics* (4)	
DIES	294	Diesel Engines II* (4)	
<b>Elective</b>		<b>3 hours</b>	
BSAD	125	Business Computer Apps	

# CERTIFICATE

## Emergency Medical Technician

The Emergency Medical Technician (EMT) certificate prepares the student as emergency care providers either in the pre-hospital setting or the hospital setting. It further prepares the student for a career path as a paramedic, the highest trained pre-hospital provider. This program consists of both classroom and field/hospital participation. This program prepares graduates to sit for the NREMT exams, National Registry of Emergency Medical Technicians (NREMT) exams, both written and practical. Students wanting financial aid are recommended to follow these guidelines.

AHA Healthcare Provider Level CPR, 18 years of age or older, successful completion of high school or GED and ability to pass a background check are prerequisites for this program.

An individual convicted of a felony or any other crime directly related to public health or the provision of emergency medical service, including DUI, will be reviewed for eligibility for program participation based on the hiring policies of the NREMT.

<b>Orientation</b>			
<b>1 hour</b>			
COLL	101	College Orientation	
<b>Major Courses</b>		<b>12 hours</b>	
MATH	100	Intermediate Algebra (3)	
EMT	101	Emergency Medical Technician (9)	
<b>Electives</b>		<b>3 or 4 hours</b>	
SPCH	101	Fundamentals of Speech (3)	
EMTP	299	Fundamentals of Human Anatomy and Physiology (4)	
<b>Certification Component</b>			
If a student is pursuing EMT licensing through the NREMT, then the student must take the NREMT exams both written and practical. If a student does not wish to pursue EMT licensure, the student must take an online assessment exam prior to course completion. All costs associated with taking the exams, whether through the NREMT or the online assessment tool, are incurred by the student.			

## CERTIFICATE

### English Language Acquisition

This certificate program is designed to meet the English language acquisition needs of English language learners. The primary audience for the certificate is international students. Students complete coursework which focuses on the understanding and use of English. Students successfully completing this certificate program will be fluent in the speaking, listening, grammar, and writing of English. Students are required to complete the English Language Institute (ELI) coursework and additional communication hours for a total of 24 credit hours which facilitates compliance with VISA regulations and provides a foundation for further academic studies should the student choose to pursue additional degrees or certificates. This is a non-credit certificate of completion. This certificate is not approved by the Missouri Department of Higher Education as a degree program.

**Students must earn 24 hours for this certificate.**

<b>Orientation</b>			<b>1 hour</b>
COLL	101	College Orientation	
<b>English Language Institute Courses</b>			<b>3 – 21 hours</b>
<i>(ELI level determined by placement assessment)</i>			
ELI	31	English for Non-Native Speakers Beginning (12)	
ELI	33	English for Non-Native Speakers Intermediate(6))	
ELI	35	English for Non-Native Speakers Advanced (3)	
<b>Elective Communication Courses</b>			<b>3 - 21 hours</b>
COM	80	Introduction to Communication (2)	
ENGL	100	Mechanics of Communication (3)	
LOC	40	Reading Enhancement I (2)	
LOC	50	Reading Enhancement II (3)	
LOC	90	Reading Across the Curriculum (3)	
SPCH	101	Speech (3)	
ELI	37	English Language Institute: Special Topics (3)*	
<b>Special Topics*</b>			
Students wishing to complete English Language instruction beyond that provided in the sequence of English Language Institute courses may enroll in special topics courses to complete the required credit hours.			

\*Prerequisite requirement

## CERTIFICATE

### Industrial Electrical Technician

This certificate prepares students for employment in an industrial, manufacturing, or commercial electrical setting. Successful graduates will possess the ability to setup, troubleshoot, repair and maintain electrical control systems, up to and including programmable logic controllers (PLCs). Students must earn a minimum\* of 17 hours for this certificate.

<b>Orientation: 1 hour</b>		
COLL	101	College Orientation (1)
<b>Advanced Manufacturing Core Courses: 13 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
AMT	111	Introduction to Industrial Safety (1) None
AMT	102*	Introduction to Industrial Electricity (3) CR: AMT 111, MATH 60, COMM 80
AMT	104*	Electrical Motor Control (3) PR: AMT 102, CR: MATH 50/70
AMT	204*	Programmable Controllers I (3) PR: AMT 104, CR: MATH 104
AMT	206*	Programmable Controllers II (3) PR: AMT 204
<b>Support Courses: 3 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
BSAD	125*	Computer Applications (3) OA 105 or passing keyboarding placement test
<b>Total Hourly Requirement: 17 hours</b>		

\* - Prerequisite courses or equivalent placement exam scores required.

\*\* - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

#### Catalog Disclaimer for Selected Programs:

Final state and financial aid approval is pending on this program. Please check with a Technology (CCCI) Division advisor for status before enrolling.

# CERTIFICATE

## Industrial Maintenance Technician

This certificate prepares students to enter a career in industrial maintenance with a skill set that will provide entry level knowledge of basic construction, welding, print reading, and industrial electricity. The electrical courses will include the use of electrical testing devices, troubleshooting techniques, and programmable logic controllers.

Students must earn a minimum\* of 26 hours for this certificate.

<b>Orientation: 1 hour</b>		
COLL	101	College Orientation (1)
<b>Advanced Manufacturing Core Courses: 10 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
AMT	111	Introduction to Industrial Safety (1) None
AMT	102*	Introduction to Industrial Electricity (3) CR: AMT 111, MATH 60, COMM 80
AMT	104*	Electrical Motor Control (3) PR: AMT 102, CR: MATH 50/70
AMT	204*	Programmable Controllers I (3) PR: AMT 104, CR: MATH 104
<b>Support Courses: 9 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
BSAD	125*	Computer Applications (3) PR: OA105 or passing keyboarding placement test
WELD	113	Introduction to Welding (3) CR: MATH 40/60, COMM 80
DRFT	101	Introduction to Engineering Drawing (3) None
<b>Approved Electives: 6 hours</b>		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
WELD	145*	Gas Metal Arc Welding (GMAW/MIG) (3) PR: WELD 113, CR: MATH 50/70
WELD	150*	Gas Tungsten Arc Welding (GTAW/TIG) (3) PR: WELD 113, CR: MATH 50/70
WELD	155*	Shielded Metal Arc Welding (SMAW) (3) PR: WELD 113, CR: MATH 50/70
AMT	122*	Basic Machining (3) CR: AMT 111, MATH 60, COMM 80
AMT	132*	Industrial Hydraulics (3) PR: AMT 111, CR: AMT 102, MATH 50/70
AMT	142*	Mechanical Power Transmission (3) PR: AMT 111, CR: MATH 50/70
AMT	206*	Programmable Controllers II (3) PR: AMT 204,
CONS	155*	Basic HVAC (3) PR: AMT 111, CR: AMT 102, MATH 50/70
CONS	132*	Plumbing I (3) PR: AMT 111
CONS	134*	Plumbing II (3) PR: CONS 132
<b>Total Hourly Requirement 26 hours</b>		

\* - Prerequisite courses or equivalent placement exam scores required.

\*\* - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

### Catalog Disclaimer for Selected Programs:

Final state and financial aid approval is pending on this program. Please check with a Technology (CCCI) Division advisor for status before enrolling.

## CERTIFICATE

### Medical Coding Specialist Certificate

This certificate program prepares students for employment as entry-level coders using the International Classification of Diseases (ICD) and Current Procedural Terminology (CPT) coding systems for assigning accurate codes in compliance with federal regulations and insurance requirements. Graduates receive the Certificate in Medical Coding Specialist from the college and are eligible to write the AHIMA national qualifying examination to become a Certified Coding Associate (CCA).

In order to promote student success in the Medical Coding Specialist certificate program, the following criteria is established for admission: a) high school GPA of at least 2.0 or a passing GED score and b) a minimum cumulative GPA of 2.0 for previous college hours. All courses must be completed with a grade of C or better in order to progress to the next course and an overall GPA of 2.5 to successfully complete the program.

Prior to enrolling in the HIT 285 course, students will be required to have a physical examination and verify annual tuberculosis status. A Criminal Background Check along with a drug screen may be required, and students are responsible for any costs incurred. If a negative result is returned, the student may not be able to complete the Clinical Application Experience.

**Students must earn 31 hours for this certificate.**

<b>Orientation</b>		<b>1 hour</b>	
	COLL	101	College Orientation
<b>Major Courses</b>		<b>30 hours</b>	
	BSAD	125	Business Computer Applications (3)
	HIT	110*	Introduction to Health Information Technology (3)
	HIT	205*	Human Anatomy and Physiology I for HIT (3)
	HIT	206*	Human Anatomy and Physiology II for HIT (3)
	HIT	210*	Pathophysiology w/ Pharmacology for HIT (3)
	HIT	220*	ICD Coding (3)
	HIT	230*	CPT Coding (3)
	HIT	240*	Applied Coding (3)
	HIT	285*	Clinical Coding Application Experience (3)
	OA	215*	Medical Terminology (3)

\*Prerequisites for these courses must be met.

## CERTIFICATE

### Paramedic

The Paramedic certificate is designed for the professional paramedic positions in Emergency Medical Services. The certificate is designed to be offered in a 27 week sequence. This program prepares graduates to sit for the Paramedic certification exam.

EMT licensure, EMPT 299, and admission to the program are prerequisites for this program.

<b>Paramedic Courses</b>		<b>36 hours</b>	
	EMPT	201	Paramedic I* (12)
	EMPT	202	Paramedic II* (12)
	EMPT	203	Paramedic III* (12)

\*Prerequisite requirement



## CERTIFICATE

### Pharmacy Technician Certificate

This certificate program prepares students for employment as Pharmacy Technicians with medical and office skills helpful for initial placement in pharmacy settings and other related occupations; and students have a career path into the Health Care Specialist AAS. Basic communication, computer/Internet skills, ethics and core courses in pharmacy will be completed.

**Students must earn 16 hours for this certificate.**

<b>Orientation</b>		<b>1 hour</b>
COLL	101 College Orientation	
<b>Major Courses</b>		<b>15 hours</b>
PHAR	101 Pharmacy Techniques I (3)	
PHAR	102 Pharmacy Techniques II (3)	
PHAR	150 Pharmacy Tech Internship (3)	
BSAD	125 Bus Computer Applications (3)	
PHAR	110 Pharmacology Concepts (3)	
<b>Certification Component</b>		
Passing a national certification exam is <b>not</b> a requirement for obtaining this certificate or for job placement. However, a national certification exam must be taken as part of the program.		

## CERTIFICATE

### PC Repair Certificate

This certificate provides an opportunity for students not wishing to complete a full two-year program in computer and network support to acquire the basic computer assembly/maintenance/setup skills required for entry-level employment in the information technology/services area. Successful graduates will be able to utilize industry terminology, assemble, setup, and maintain Intel-based ("IBM compatible") personal computers, and perform basic computer networking tasks. The program is based around two PC basics courses taught in a strong "hands-on" environment in the classroom. Students successfully completing the program will be qualified to complete and pass CompTIA's A+ PC repair exams; although neither taking nor passing the exam is a formal requirement for obtaining the certificate.

Students must earn a minimum\* of 16 hours for this certificate.

<b>Orientation</b>		<b>1 hour</b>
COLL	101	
<b>Required</b>		<b>15 hours</b>
CNS	101 Introduction to Electronics (3)	<b>Prerequisites (PR) or Corequisites (CR) **</b>
CNS	111* PC Basics I (3)	CR: CNS 111, CNS 115, MATH 40/60, COMM 80
CNS	112* PC Basics II (3)	CR: CNS 101, CNS 115, MATH 40/60, COMM 80
CNS	115* Cisco Networking (3)	CR: MATH 50/70; PR: CNS 111
CNS	125* Programming for CNS Technicians (3)	CR: CNS 101, CNS 111, MATH 40/60, COMM 80
		CR: MATH 104
<b>Total Hourly Requirement: 16 hours</b>		

\* - Prerequisite courses or equivalent placement exam scores required.

\*\* - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

## CERTIFICATE

### Active Solar Technician

This certificate provides students with a unique applied foundation in solar technologies and applications. The program emphasizes learning through coursework and applied research projects. The certificate allows students to move directly into the alternative energy workforce installing solar hardware and systems. Students are required to take the entry level NABCEP Solar PV exam given as part of the ENER 260 course. Students must also report their score to the College for completion of this degree program.

Students must earn 23 hours for this certificate.

<b>Orientation</b>		<b>1 hour</b>
COLL	101	College Orientation (1)
<b>Major courses</b>		<b>22 hours</b>
AMT	112	Occupational Safety (3)
CONS	133	Basic Plumbing* (3)
CONS	143	Basic Electrical* (3)
ENER	105	Intro to Energy (3)
ENER	250	Solar Thermal Systems* (3)
ENER	260	Solar Electric Energy* (3)
ENER	251	Solar Thermal Systems Lab* (2)
ENER	261	Solar Electric Energy Lab* (2)
ENER	156	Projects (1-3)

\*Prerequisite requirement

## CERTIFICATE

### Electric Arc Welding Certificate

This certificate program prepares students for employment as entry-level welders using any one or all of the three basic types of Electric Arc Welding Technology: Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW) and/or Shielded Metal Arc Welding (SMAW). Students successfully completing this certificate program will be able to perform basic GMAW, GTAW, and SMAW tasks, read/interpret blueprints, complete basic math calculations, demonstrate basic computer/Internet skills, and communicate effectively.

Students must earn a minimum\* of 19 hours for this certificate.

<b>Orientation</b>		<b>1 hour</b>
COLL	101	College Orientation (1)
<b>Welding Core Courses</b>		<b>12 hours</b>
		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
WELD	113*	Introduction to Welding (3) CR: MATH 40/60, COMM 80
WELD	145*	Gas Metal Arc Welding (GMAW/MIG) (3) PR: WELD 113, CR: MATH 50/70
WELD	150*	Gas Tungsten Arc Welding (GTAW/TIG) (3) PR: WELD 113, CR: MATH 50/70
WELD	155*	Shielded Metal Arc Welding (SMAW) (3) PR: WELD 113, CR: MATH 50/70
<b>Support Courses</b>		<b>6 hours</b>
		<b>Prerequisites (PR) or Corequisites (CR) (**)</b>
BSAD	125*	Computer Applications (3) PR: OA 105 or passing keyboarding placement test
DRFT	101	Introduction to Engineering Drawing (3) None
<b>Total Hourly Requirement</b>		<b>19 hours</b>
<b>Optional Component:</b>		
Certification by an American Welding Society (AWS) certified instructor is available for interested students on a fee basis, but AWS certification is a not a requirement for obtaining this certificate.		

\* - Prerequisite courses or equivalent placement exam scores required.

\*\* - Formal pre- and co-requisites are listed in the college catalog. They are presented here to assist students/advisors in planning individual programs of study. When developmental courses are listed, testing to a higher level on the ACT or COMPASS placement exam will meet the requirement.

# CERTIFICATE

## Environmental Health Technology Utility Management Option

Enrollment in the one-semester certificate program in Utility Management increases an applicant's chance for employment and promotion in the field of municipal water and wastewater systems. In most states, operators must pass an examination to certify that they are capable of overseeing water treatment, water distribution, and wastewater system operations. This certificate program is designed to help students manage municipal water and wastewater system, and prepare for higher levels of state certification. Students must complete 17 hours for this certificate.

<b>Orientation</b>	<b>1 hour</b>	
COLL		101
ERC	222	Utility Management (2)
ERC	260	Computer Use Water/Wastewater (2)
ERC	272	Advanced Water Treatment (3)*
ERC	271	Advanced Wastewater Treatment (3)*
ERC	280	Water Source Planning, Design, & Mgmt (3)
ERC	281	Stormwater Management (3)
<b>Total Hourly Requirement</b>		<b>17 hours</b>

\*Prerequisite requirement

# CERTIFICATE

## Environmental Health Technology Wastewater Treatment Technology Option

Enrollment in the one-semester certificate program in Wastewater Technology increases an applicant's chance for employment and promotion in the field. In most states, operators must pass an examination to certify that they are capable of overseeing wastewater plant operations. This certificate program is designed to help students prepare for state certification. Students must complete 17 hours for this certificate. Potential enrollees must complete Crowder's standard entrance exam and test into the appropriate college-level courses in Mathematics. An additional requirement includes taking the DNR certification exam and reporting the score to Crowder College.

<b>Orientation</b>	<b>1 hour</b>	
COLL		101
ERC	132	Wastewater Lab (2)
ERC	142	Basic Wastewater Treatment (3)*
ERC	225	Pumps & Motors (2)
ERC	231	Land Application of Waste (2)
ERC	234	Wastewater Internship (2)
ERC	253	Hydraulics (3)
ERC	298	Wastewater Collection Systems (2)
<b>Total Hourly Requirement</b>		<b>17 hours</b>

\*Prerequisite requirement

## CERTIFICATE

### Environmental Health Technology Water Treatment Technology Option

Enrollment in the one-semester certificate program in Water Treatment Technology increases an applicant's chance for employment and promotion in the field. In most states, operators must pass an examination to certify that they are capable of overseeing water plant operations. This certificate program is designed to help students prepare for state certification. Students must complete 17 hours for this certificate. Potential enrollees must complete Crowder's standard entrance exam and test into the appropriate college-level courses in Mathematics. An additional requirement includes taking the DNR certification exam and reporting the score to Crowder College.

<b>Orientation 1 hour</b>		
COLL	101	
ERC	124	Water Lab (2)
ERC	140	Basic Water Treatment (3)*
ERC	141	Water Distribution (2)
ERC	221	Chlorine & Disinfection (2)
ERC	224	Water Internship (2)
ERC	225	Pumps & Motors (2)
ERC	253	Hydraulics (3)
<b>Total Hourly Requirement</b>		<b>17 hours</b>

\*Prerequisite requirement

## CERTIFICATE

### Wind Energy Technician

The Wind Energy Technician certificate provides students with a unique applied foundation in wind energy technology. The curriculum is designed to prepare students for entry level employment or further study in the area. Students are required to take a certification exam given as part of the ENER 232 course and report their score to the College for completion of this degree program. Students are strongly encouraged to contact the Wind Instructor for advisement before beginning this program.

Students must earn 23 hours for this certificate.

<b>Orientation 1 hour</b>		
COLL	101	College Orientation
<b>Communications 2 hours</b>		
COLL	103	Practical Communications
<b>Mathematics 3 hours</b>		
MATH	104	Technical Mathematics*
<b>Major Courses 17 hours</b>		
AMT	102	Introduction to Industrial Electricity (3)
AMT	112	Occupational Safety (2)
CNS	101	Introduction to Electronics (3)
ENER	132	Introduction to Wind (3)
ENER	134	Wind Turbine Troubleshooting* (3)
ENER	232	Wind Turbine Internship * (3)

Notes: NCCER Registration is available with the addition of CONS 105

\*Prerequisite requirement

# PROGRAMS OF STUDY INDEX

ASSOCIATE OF ARTS DEGREE.....	63
Addictions Counseling .....	64
Agriculture.....	65
Alternative Energy - Biofuels.....	66
Alternative Energy – Solar .....	67
Alternative Energy - Wind .....	68
Art and Design .....	69
Biology.....	70
Business Administration.....	71
Chemistry.....	72
Child Development .....	73
Computer Science .....	74
Environmental Health Technology .....	75
Environmental Science .....	76
Fire Science.....	77
General Studies .....	78
Graphic Design .....	79
History.....	80
Information Science .....	81
Journalism and Public Relations.....	82
Law Enforcement.....	83
Mathematics .....	84
Music .....	85
Photography .....	86
Physical Education .....	87
Physical Sciences.....	88
Physics .....	89
Pre-Medicine.....	90
Pre-Veterinary Medicine .....	91
Psychology .....	92
Social Work.....	93
Spanish.....	94
Teaching (AAT).....	95
Theatre .....	96
ASSOCIATE OF SCIENCE DEGREES.....	97
Nursing .....	97
Pre-Engineering.....	98
Pre-Engineering – Alternative Energy Option .....	99

ASSOCIATE OF APPLIED SCIENCE DEGREES .....	100
Accounting .....	100
Agri-Business Technology: Agronomy Option .....	101
Agri-Business Technology: Horticulture Option .....	102
Agri-Business Technology: Livestock Production Option.....	103
Agri-Business Technology: Marketing and Management Option .....	104
Alternative Energy – Biofuels .....	105
Alternative Energy - Solar .....	106
Alternative Energy - Wind .....	107
Advanced Manufacturing Technology: Automation/Robotics Option.....	108
Advanced Manufacturing Technology: Manufacturing Maintenance Option .....	109
Auto Technology .....	110
Auto Technology – Parts Management Option .....	111
Collision Repair Technology .....	112
Computer and Network Support Technology .....	113
Diesel Technology .....	114
Drafting & Design Technology .....	115
Energy Efficient Building Technology: Alternative Technologies Option .....	116
Energy Efficient Building Technology: Construction Management Option .....	117
Energy Efficient Building Technology: General Construction Option .....	118
Fire Science .....	119
ASSOCIATE OF APPLIED SCIENCE DEGREE .....	120
Health Information Technology .....	120
Management.....	121
Office Administration Specialist .....	122
Health Care Specialist .....	123
Medical Office Specialist.....	124
Paramedical Science .....	125
Veterinary Technology.....	126
CERTIFICATES OF STUDY .....	127
Applied Behavior Analysis Certificate .....	127
Autism Assistant Certificate .....	127
Auto Technology .....	128
Automation/Robotics Technician .....	128
Biodiesel Technician .....	129
Bioethanol Fuel Technician.....	129
Biofuels Technician.....	129
Biogas Technician .....	130
Certified Nurse Assistant Specialist Certificate .....	130
Cisco Networking Certificate.....	131

Collision Repair I Technician Certificate .....	131
Collision Repair II Technician Certificate .....	132
Construction Technology .....	132
Diesel Technology .....	133
Emergency Medical Technician .....	133
English Language Acquisition .....	134
Industrial Electrical Technician .....	134
Industrial Maintenance Technician .....	135
Medical Coding Specialist Certificate .....	136
Paramedic.....	136
Pharmacy Technician Certificate .....	137
PC Repair Certificate .....	137
Active Solar Technician .....	138
Electric Arc Welding Certificate.....	138
Environmental Health Technology .....	139
Utility Management Option.....	139
Environmental Health Technology .....	139
Wastewater Treatment Technology Option.....	139
Environmental Health Technology .....	140
Water Treatment Technology Option .....	140
Wind Energy Technician .....	140
PROGRAMS OF STUDY INDEX.....	141

**NOTES:**