Career & Technical Education

"Colorado's First iPad College"

CAREER AND TECHNICAL EDUCATION (CTE)

A changing emphasis in education has so heightened the interest in career and technical education that more and more students are seeking college programs which lead directly to gainful employment.

Work in industry has become so highly specialized that general education no longer meets the number and variety of job demands; the student needs more skilled and specialized training today than ever before.

To help meet these demands Northeastern Junior College offers a range of immediate employment programs developed in cooperation with business and industry. Programs may be a two-year Associate of Applied Science Degree or a Northeastern Junior College Certificate of one year or less.

Outstanding features of the career and technical education programs include modern equipment and facilities common to business or industry and a strong faculty with many years of workplace experience.

The objectives of the career and technical programs are:

- To learn the essential skills and operational theory needed to ensure occupational competency
- To develop correct habits of work safety
- To cultivate desirable civic attitudes such as integrity, dependability, resourcefulness and cooperation
- To recognize the importance of technology in the workplace

Career and Technical Education programs may carry special admission requirements in addition to those included in this catalog under general admission procedures. All information regarding admission is available from the Office of Admission.

The college reserves the right to substitute courses for those no longer offered, to modify course content at any time, to approve the substitution of one course for another in any program or degree, or waive any course prerequisite or co-requisite.

ASSOCIATE OF APPLIED SCIENCE DEGREE (A.A.S.)

The Associate of Applied Science (A.A.S.) degree is awarded to a student who successfully completes a program designed to prepare the student for immediate employment in a full-time skilled and/or paraprofessional occupation. Each of the college's A.A.S. degree programs is in a specified occupational field. The program guides are located in the Career and Technical Education section of the catalog.

Although some college credits within these programs are accepted for transfer by particular four-year colleges and universities, career and technical education courses are not specifically designed to facilitate transfer. The student who anticipates transferring is encouraged to check carefully the requirements of the respective institution.

GRADUATION REQUIREMENTS AND POLICIES

1. Complete between 60 - 75 semester credits of approved coursework as outlined in the college catalog. Exceptions to the AAS degree maximum of 75 semester credit hours may be granted in those fields in which there is a demonstrated need that requires additional coursework. Since each A.A.S. program is designed for a specified career or technical field the minimum requirements will vary with the particular program. A minimum of 15 semester credits of the total must be in general education courses with at least one course in each of the following categories: **Communication or Reading; **Mathematics; **Science or Computer Science; **Social/Behavioral Science or Humanities**. The remaining credits must be earned as technical skills development coursework drawn from the specific career and technical program requirements.
2. Earn a minimum cumulative grade point average of 2.0 (a "C" average).
3. Earn 15 semester credits of coursework prior to graduation on the Sterling campus (or approved outreach center) of Northeastern Junior College.
4. File an Application for Graduation in the Records Office.
5. Resolve all financial obligations to the college and return all library and college materials.

General Education Requirements

The requirements of each A.A.S. degree program and the specific general education courses that must be completed for each program are described in the following pages of the Career and Technical Education section. Courses that meet the general education requirements for each A.A.S. degree program are chosen from the following areas in Communications or Reading, Mathematics, Science or Computer Science, Social Sciences or Humanities.

Any course designated as a Guarantee Transfer Course (see list on pages 46-48) will also fulfill a general education requirement for the AGS degree in the appropriate category. Additional courses are listed under the respective categories below.

Students must have at least one course in each of the following categories:

I. Communication or Reading

ENG 115 Technical English & Communication 3
ENG 121 English Composition I 3
ENG 122 English Composition II 3
ENG 131 Technical Writing 3
REA 130 Technical & Applied Reading 2
COM 115 Public Speaking 3
COM 125 Interpersonal Communications 3
COM 230 Argumentation and Debate 3

II. Mathematics

See Guarantee Transfer courses on pages 46-48 OR
BUS 226 Business Statistics OR 3
MAT 135 Intro to Statistics 3
MAT 102 Skilled Trades & Industrial Math 2
MAT 103 Math for Clinical Calculations 3
MAT 107 Career Math 3
MAT 112 Financial Mathematics 3

III. Science or Computer Science

See Guarantee Transfer courses on pages 46-48 OR
AGB 218 Computerized Farm Records 3
AGB 102 Agribusiness Foundations 3
AGY 100 General Crops 4
ASC 100 Animal Sciences 3
ASC 102 Introduction to Equine Science 4
CHE 205 Introductory Organic Chemistry 5
CIS 117 Intro to Technical Applications 2
CIS 118 Intro to PC Applications 3
CWB 110 Complete Web Authoring 3
CWB 130 Complete Web editing 3
EDU 265 Technology in Education 3
HPR 217 Kinesiology 4
MGD 101 Introduction to Computer Graphics 3
MGD 141 Web Design I 3

IV. Social and Behavioral Science - Humanities

See Guarantee Transfer courses on pages 46-48 OR
BUS 115 Introduction to Business 3
BUS 116 Personal Finance 3
BUS 203 Intro to International Business 3
MAN 128 Human Relations in Organization 3
PSY 237 Child and Adolescent Psychology 3
SPA 111 Spanish Language I 5
SPA 112 Spanish Language II 5

Total Semester Credits ..... 15 Credits

At least one course in each of the following categories: Communications or Reading, Mathematics, Science or Computer Science, and Social/Behavioral Science or Humanities.

Summary of Degree Requirements

I. General Education (chosen from the four basic areas in Communications or Reading, Mathematics, Science or Computer Science, and Social Sciences or Humanities) 15

II. Specific A.A.S. program courses and electives . 45-60

Total Semester Credits 60-75

CERTIFICATE IN CAREER AND TECHNICAL EDUCATION PROGRAMS

A Certificate is awarded to a student who successfully completes a career and technical education program not leading to an Associate of Applied Science degree (A.A.S.). Normally these programs are two years, one year, or less in duration. These programs are designed primarily to prepare students for immediate employment. Depending on the program, some general education or related coursework may be required. Students are encouraged to supplement their career and technical training with at least two additional approved general education courses. Course requirements for various certificate programs are outlined in this catalog in the Career and Technical Education section.

GRADUATION REQUIREMENTS AND POLICIES

1. Complete the minimum semester credits required for the program as outlined in the college catalog. Complete general education requirements (if any).
2. Earn a minimum cumulative grade point average of 2.0 (a "C" average).
3. Earn 25% of the semester credits of the program's coursework through Northeastern Junior College.
4. File an Application for Graduation in the Records Office.
5. Resolve all financial obligations to the college and return all library and college materials.

AGRI-BUSINESS

ASSOCIATE OF APPLIED SCIENCE DEGREE

Agri-Business is a field that encompasses the technologies of agriculture and business, combining the management aspects of business with the production factors of agriculture. This education provides a much needed skilled technician for that part of the industry that serves the producer. It also prepares the student to take advantage of the off-farm agriculture opportunities.

The Agri-Business program at Northeastern Junior College is designed for a student who plans on going directly into industry. This program is not intended to transfer to a four year institution. It consists of classroom work (60 credits) and eight (8) credits of Internship for a total of 68 credits. Students will work for an agri-business firm for 320 hours for eight (8) Internship credits.

General Education Requirements

Communication ..... 6 Credits
- COM 115 Public Speaking OR 3
- COM 219 Group Dynamics 3
- ENG 121 English Composition OR 3
- ENG 131 Technical Writing I 3

Mathematics/Science ..... 6 Credits
- MAT 107 Career Mathematics OR higher math..... 3
- ASC 100 Animal Science 3

Social Science/Humanities ..... 3 Credits
- AGE 102 Agricultural Economics 3

Program Requirements ..... Credits
- ACC 101 Fundamentals of Accounting OR 3
- AGB 218 Computerized Farm Records 3
- AGB 120 Agricultural Salesmanship 3
- AGB 180 Agri-Business Internship 8
- AGB 228 Agri-Business Management 3
- AGB 289 Agri-Business Capstone 1
- AGE 210 Agricultural Marketing 3
- AGY 100 General Crops OR 4
- AGP 100 Practical Crop Production 4
- BUS 217 Business Comm & Report Writing 3
- CIS 118 Introduction to PC Applications. 3

Suggested Electives . ..... Credits
- ACC 121 Principles of Accounting I 4
- ACC 122 Principles of Accounting II 4
- AGB 218 Computerized Farm Records 3
- AGE 208 Agricultural Finance 3
- AGE 205 Farm and Ranch Management 3
- AGP 110 Integrated Pest Management 3
- AGP 145 Calving Management 2
- AGP 146 Artificial Insemination 2
- AGP 147 Practical Cattle Reproduction 2
- AGP 148 Cattle Reproduction Lab 1
- AGP 204 Soil Fertility and Fertilizers 4
- AGP 215 Animal Health 3
- AGP 247 Production Cattle Feeding 3
- AGR 260 World Interdependence- Population & Food 3
- AME 105 Basic Ag Mechanic Skills 2
- AME 107 General Power Mechanics 2
- AME 118 Farm Carpentry 3
- AME 125 Agricultural Machinery 3
- ASC 102 Introduction to Equine Science 4
- ASC 225 Feeds/Feeding 4
- ASC 250 Livestock & Carcass Evaluation 3
- AGY 240 Introduction to Soil Science 4
- BUS 115 Introduction to Business 3
- BUS 216 Legal Environment of Business 3
- BUS 221 Business Law I 3
- MAN 226 Principles of Management 3
- MAR 216 Principles of Marketing 3
- MAR 220 Principles of Advertising 3
- RAM 205 Principles of Range Management 3

AGRI-BUSINESS

CERTIFICATE

A Certificate will be granted upon completion of 30 semester credits of classroom work and 8 credits of Internship. Appropriate courses are selected in consultation with a faculty advisor. Internship is normally completed during the summer following the nine months of classroom course work.

AGRICULTURE BUSINESS MANAGEMENT

SIX ONE-YEAR CERTIFICATES

The agriculturist of today depends as much on his or her management skills as on production skills. This program provides individuals in the agriculture community systematic instruction to give them the tools to make sound business decisions based on enterprise and farm records. As technology changes, it is necessary to enhance skills to communicate with accountants, lenders, and other professionals. With difficult profit margins in agriculture, guidance in being resilient to risk is valuable.

Instruction is made up of on-site visits, lectures of hybrid/online instruction, and cooperative education.

RECORDS & BUSINESS PLANNING CERTIFICATE

Program Requirements	Credits
ABM 103 Records & Business Planning I	3
ABM 104 Records & Business Planning II	3
ABM 105 Records & Business Planning III	3
ABM 106 Records & Business Planning IV	3
ABM 107 Records & Business Planning V	3
ABM 108 Records & Business Planning VI	3

The focus of this certificate is to assist students in computerized record keeping and developing a Business plan.

FINANCIAL ANALYSIS CERTIFICATE

Program Requirements	Credits
ABM 113 Financial Analysis I	3
ABM 114 Financial Analysis II	3
ABM 115 Financial Analysis III	3
ABM 116 Financial Analysis IV	3
ABM 117 Financial Analysis V	3
ABM 118 Financial Analysis VI	3

The focus of this certificate is to develop financial statements and understand financial ratios as they relate to the agricultural business.

COMMODITY MARKETING CERTIFICATE

ABM 123 Commodity Marketing I	3
ABM 124 Commodity Marketing II	3
ABM 125 Commodity Marketing III	3
ABM 126 Commodity Marketing IV	3
ABM 127 Commodity Marketing V	3
ABM 128 Commodity Marketing VI	3

The focus of this certificate is to introduce commodity marketing to the student and utilize a defined, written marketing plan.

MARKET PLAN DEVELOPMENT CERTIFICATE

ABM 163 Marketing Plan Dev I	3
ABM 164 Marketing Plan Dev II	3
ABM 165 Marketing Plan Dev III	3
ABM 166 Marketing Plan Dev IV	3
ABM 167 Marketing Plan Dev V	3
ABM 168 Marketing Plan Dev VI	3

The focus of this certificate is expanding on commodity marketing with an emphasis in risk management, e-commerce, niche marketing and value added marketing.

ADVANCED AGRICULTURE BUSINESS MANAGEMENT CERTIFICATE

Program Requirements	Credits
ABM 213 Advanced Business Management I	3
ABM 214 Advanced Business Management II	3
ABM 215 Advanced Business Management III	3
ABM 216 Advanced Business Management IV	3
ABM 217 Advanced Business Management V	3
ABM 218 Advanced Business Management VI	3

This certificate is designed to enhance management skills by looking at the existing business plan, identifying risk reducing alternatives, and continuing in-depth financial analysis.

INTEGRATED MANAGEMENT CERTIFICATE

Program Requirements	Credits
ABM 223	
ABM 224	
ABM 225	
ABM 226	
ABM 227	
ABM 228	

This certificate emphasizes...

PROFIT MAXIMIZATION CERTIFICATE

Program Requirements	Credits
ABM 233 Profit Maximization I	3
ABM 234 Profit Maximization II	3
ABM 235 Profit Maximization III	3
ABM 236 Profit Maximization IV	3
ABM 237 Profit Maximization V	3
ABM 238 Profit Maximization VI	3

This certificate emphasizes integration of data and software technology for a business. Research and identification of data will assist in development of a management plan.

Certificates may be taken out of order with permission of instructor.

AGRICULTURE
PRODUCTION AGRICULTURE

ASSOCIATE OF APPLIED SCIENCE DEGREE.

This program is designed to provide students with the necessary management and production skills required in the field of production agriculture today. Students seeking an occupation in farming or ranching will be able to pursue a variety of skills and competencies necessary to meet their individual occupational objective. This program requires 60 credits of course work and at least 8 credits of required internship(s) for a total of at least 68 credits.

General Education Requirements	**Credits**
ASC 100 Animal Science	3
AGE 102 Agricultural Economics	3

An additional 9 credits must be taken from the AAS Degree General Education Requirements in the Communications or Reading, Mathematics, and the Science or Computer Science categories.

Program Requirements	**Credits**
ACC 101 Fundamentals of Accounting OR	3
AGB 218 Computerized Farm Records	3
AGE 205 Farm and Ranch Management	3
AGP 100 Practical Crops OR	4
AGY 100 General Crops	4
AGP 180 Production Ag Internship	8
AGP 289 Production Ag Capstone	1
AME Any Agriculture Mechanics Course	2 or 3
ASC 225 Feeds and Feeding	4

Suggested Electives	**Credits**
ACC 121 Principles of Accounting I	4
AGE 208 Agricultural Finance	3
AGE 210 Agricultural Marketing	3
AGP 110 Integrated Pest Management	3
AGP 145 Beef Cattle Calving Management	2
AGP 146 Artificial Insemination	2
AGP 147 Practical Cattle Reproduction	2
AGP 148 Cattle Reproduction Lab	1
AGP 160 Ranch Horsemanship Skills	2
AGP 204 Soil Fertility and Fertilizers	4
AGP 215 Animal Health	3
AGP 241 Beef Cattle Management I	3
AGP 247 Production Cattle Feeding	3
AGY 240 Introductory Soil Science	4
AME 105 Basic Agricultural Mechanic Skills	2
AME 107 General Power Mechanics	2
AME 118 Farm Carpentry	3
AME 125 Agricultural Machinery	3
AME 151 Fundamentals of Welding	3
ASC 102 Introduction to Equine Science	4
ASC 215 Livestock Judging	2
ASC 250 Livestock and Carcass Evaluation	3
BUS 115 Introduction to Business	3
BUS 216 Legal Environment of Business	3
BUS 221 Business Law	3
EQM 158 Equine Reproduction	2
EQM 210 Equine Health	2
RAM 205 Principles of Range Management	3

AGRICULTURE
PRODUCTION AGRICULTURE

CERTIFICATE

Students completing 30 semester credits plus 8 credits of Internship (38 total credits) will be eligible to receive an NJC Certificate. A minimum of 15 credits must be taken from agricultural courses. The additional 15 credits taken will be with the approval of the advisor. (Refer to the AAS Degree in Production Agriculture as a guide in selecting courses for study.)

APPLIED MANAGEMENT

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Associate of Applied Science Degree in Applied Management (AAS) is designed to meet the needs of individuals who have acquired post high school occupationally-related training at any community college, technical institute, military service school, proprietary school, or industry-related school in the business, health, or technical fields.

This program builds on the student's previous one or more years of training in technical skills-related programs, but also includes courses that will provide entrepreneurial training necessary to obtain management level employment appropriate to the Associate of Applied Science Degree and former technical training. Finally, the program requires a variety of general education courses that enable the individual to understand and appreciate his/her societal responsibilities.

The following types of occupations are examples of how this program would work.

Prior Technical Training **(30 Credits)**
+ Applied Management Courses
= Job Possibilities

Practical Nursing (PN)	Nursing Home Administrator
Carpentry	Millwork Sales
Diesel Repair	Dealership Operations
Auto Repair	Wind Technology
Cosmetology	Early Childhood Education
Owner/Operator - Business	Day Care Center
Paint/Equipment Sales Representative	

This core includes one or more years of prior technical training (30 semester credit hours minimum) from any recognized CTE program. A student is required to produce transcripted credit hours or the equivalent in a technical field.

General Education Requirements	**15 Credits**
Communication or Reading	6
Mathematics	2-3
Science or Computer Science	2-5
Social Sciences or Humanities	3

Program Requirements ..... 15 Credits

*ACC 101 Fundamentals of Accounting OR 3
*ACC 121 Principles of Accounting I 4
ACC 122 Principles of Accounting II 4
*BUS 115 Introduction to Business 3
*BUS 216 Legal Environment of Business 3
*BUS 217 Business Communications and Report Writing 3
MAR 216 Principles of Marketing 3
MAN 226 Principles of Management 3
OR other approved BUS, MAN, MAR, MGD, and ACC classes.

*Required classes

APPLIED TECHNOLOGY

ASSOCIATE OF APPLIED SCIENCE DEGREE

To complete the AAS Degree in Applied Technology a student will complete the technical course work for a state approved Career and Technical Education certificate at one of the four area vocational technical schools (AVTS). The four AVTS's are: Delta-Montrose Area Vocational Technical Center, Emily Griffith Opportunity School, San Juan Basin Area Vocational School, and T.H. Pickens Technical Center.

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

The approved Career and Technical Education certificate programs at the AVTS prepare students with technical, applied academic, and employability skills. Credit, in varying amounts from these certificate programs, will be applicable to the community college's AAS Degree in Applied Technology.

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

Minimum requirements for the Associate of Applied Science (AAS) Applied Technology Degree include:

1. Minimum of 60 semester hours of course work
2. Cumulative GPA of 2.0 or higher
3. General education course of 15 semester hours
4. Additional requirements of at least 42 semester hours:
   - from an individual state approved program at one of the four AVTS's
   - If the program certificate is less than 42 semester hours, then the program certificate hours plus elective credit hours from the community college will be used for the total of at least 42 semester hours
5. Minimum of 15 semester hours earned at the community college
6. Students must achieve a cumulative 2.0 GPA after completion of their 1st and 2nd semesters to continue to the 3rd semester

General Education Requirements ..... Credits

Communications or Reading 3
Mathematics 3
Science or Computer Science 3
Social Science or Humanities 3
General Education Elective 3
15 minimum

AUTOMOTIVE & DIESEL MASTER TECHNICIAN

CERTIFICATE

Upon successful completion of all required courses in the Automotive Technology OR in the Diesel Technology AAS degree a student may pursue an Automotive & Diesel Master Technician certificate.

The Automotive and Diesel Master Technician (ADMT) Certificate will provide Auto Tech and Diesel Tech students with the opportunity to supplement and enhance their technical skills with courses specific to the auto or diesel tech program in which they did not earn their degree/certificate. To earn an ADMT certificate an Auto Tech graduate will take certain diesel tech courses and a Diesel Tech graduate will take certain auto tech courses. Students completing this additional coursework will have a wide array of employment opportunities. Currently there are many employment opportunities in both the automotive and diesel areas that are going unfilled due to a lack of qualified personnel.

The Automotive and Diesel Master Technician Certificate will also provide graduates who wish to become entrepreneurs a much broader foundation on which to build an automotive and/or diesel repair business.

Certificate Requirements for an Auto Tech graduate

Minimum of 20 credits of Diesel Power Mechanics (DPM) course work and six (6) general education credits from ACC, BUS, CWB, MAN, or MAR.

Certificate Requirements for a Diesel Tech graduate

Minimum of 20 credits of Automotive Service Technology (ASE) course work and six (6) general education credits from ACC, BUS, CWB, MAN, or MAR.

AUTOMOTIVE TECHNOLOGY

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Automotive Technology program is designed to prepare students for jobs in the areas of parts, service management, or service and repair. The program is meeting the needs for training in this field by offering a variety of courses supported by ASE and N.A.T.E.F. standards.

Basic skills in math, science, reading, along with skills and knowledge obtained in the program are essential to successfully securing and holding down jobs in the automotive industry.

Effective communication skills to deal with customers, co-workers and to write work orders and reports are also in demand. Only students with a cumulative 2.0 GPA or better at the end of their 2nd semester will be allowed to continue to their 3rd semester.

Graduates of the Automotive Technology Program will receive either a Northeastern Junior College Certificate or an Associate of Applied Science Degree.

Detailed information regarding this program and admission requirements may be obtained from the Office of Admission, Northeastern Junior College.

General Education Requirements ..... 15 Credits

- BUS 115 Introduction to Business 3
- CIS 117 Introduction to Technical Applications 2
- ENG 115 Technical English & Communication OR
- ENG 121 English Composition I OR
- ENG 131 Technical Writing I 3
- MAT 102 Skilled Trades & Industrial Math 2
- REA 130 Applied & Technical Reading 2
- *Social Science Course, selected from courses for the AAS Degree 3*

Program Requirements ..... 60 Credits

- ASE 101 Auto Shop Orientation 2
- ASE 110 Brakes I 2
- ASE 111 Brakes II 2
- ASE 120 Basic Automotive Electricity 2
- ASE 122 Auto Electrical Safety Systems 1
- ASE 123 Battery, Starting & Charging Systems..... 2
- ASE 130 General Engine Diagnosis 2
- ASE 134 Automotive Emissions 2
- ASE 140 Steering & Suspension I 2
- ASE 141 Steering & Suspension II 2
- ASE 150 Manual Drive Train & Axle Maintenance..... 2
- ASE 151 Manual Trans/Transaxle I 2
- ASE 152 Manual Trans/Transaxle II 2
- ASE 153 Automotive Drive Axle O/H 1
- ASE 160 Engine Repair 2
- ASE 161 Engine Repair & O/H 3
- ASE 162 Auto Engine Service 2
- ASE 210 Power & ABS Brakes..... 2
- ASE 221 Auto/Diesel Body Electrical 4
- ASE 231 Automotive Computers & Ignition Systems..... 2
- ASE 233 Automotive Fuel Injection & Emissions 4
- ASE 235 Driveability & Diagnosis 2
- ASE 240 Steering & Suspension III 2
- ASE 250 Auto Trans /Transaxle Service 1
- ASE 251 Auto Trans/Transaxle Diagnosis..... 3
- ASE 252 Advanced Auto Trans O/H 2
- ASE 264 Intro to HVAC Systems 1
- ASE 265 Auto Heating/AC Systems..... 4

Total Credits Required ..... 75 Credits

Suggested Electives ..... Credits

- ACC 101 Fundamentals of Accounting 3
- ASE 154 Man Trans/Transaxle O/H 1
- ASE 165 Automotive Machining 2
- ASE 201 Automotive Parts Managements 1
- ASE 202 Automotive Service Management 2
- ASE 220 Special Electronics Training 2
- COM 115 Public Speaking 3
- HWE 124 Fitness & Wellness 2
- PED 112 Conditioning Lab 1
- WEL 140 Welding Practices & Procedures 1.5

AUTOMOTIVE TECHNOLOGY

NINE CERTIFICATES

Automotive Brakes Certificate (8 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 110 Brakes I 2
- ASE 111 Brakes II 2
- ASE 210 Power & ABS Brakes 2

Manual Powertrains Certificate (10 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 150 Manual Drive Train & Axle Maintenance..... 2
- ASE 151 Manual Trans/Transaxle I..... 2
- ASE 152 Manual Trans/Transaxle II 2
- ASE 153 Automotive Drive Axle O/H 1
- ASE 154 Man Trans/Transaxle O/H 1

Automotive HVAC Certificate (7 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 264 Intro to Auto Heatin/AC 1
- ASE 265 Heating & A/C 4

Automotive Engines Certificate (11 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 130 General Engine Diagnosis 2
- ASE 160 Engine Remove & Replace 2
- ASE 161 Engine Repair & Rebuild 3
- ASE 162 Automotive Engine Service 2

Automatic Transmissions Certificate (8 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 250 Auto Trans Service 1
- ASE 251 Auto Trans/Transaxle Diagnosis 3
- ASE 252 Advanced Auto Trans O/H 2

Automotive Electrical Certificate (7 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 120 Basic Auto Electricity 2
- ASE 122 Auto Electrical Safety Systems 1
- ASE 123 Battery, Starting & Charging Systems 2

Advanced Electrical Certificate (10 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 220 Special Electronics Training 2
- ASE 221 Auto/Diesel Body Electrical 4
- ASE 231 Auto/Diesel Computers 2

Steering & Suspension Certificate (8 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 140 Steering & Suspension I 2
- ASE 141 Steering & Suspension II 2
- ASE 240 Steering & Suspension III 2

Fuels & Emissions Certificate (12 credits)

- ASE 101 Auto Shop Orientation 2
- ASE 134 Automotive Emissions 2
- ASE 231 Auto/Diesel Computers 2
- ASE 233 Fuel Injection & Exhaust Systems II..... 4
- ASE 235 Driveability & Diagnosis 2

Note: ASE 101 is required as a pre-requisite for all courses in the automotive program.

BUSINESS

ASSOCIATE OF APPLIED SCIENCE DEGREE IN BUSINESS with Emphasis in:

- Accounting
- Business Administration
- Entrepreneurship
- Management
- Marketing
- Web Design

The Associate of Applied Science (A.A.S.) degree in Business is awarded to a student who successfully completes a program with a business emphasis. The business programs are designed to aid students in the development of skills, knowledge, and attitudes related to immediate employment in a full-time skilled and/or a paraprofessional business occupation.

General Education Requirements ..... 15 Credits
for all AAS Options

Communications ..... 6 credits
- ENG 121 English Composition I OR
- ENG 131 Technical Writing I 3
- COM 115 Public Speaking OR
- COM 125 Interpersonal Communications 3

Mathematics 3
Science and Computer Science 3
Social Sciences and Humanities 3

Choose a course or courses within each of the appropriate required areas listed above as listed in the General Education Requirements for the Associate of Applied Science Degree section on page 76 (unless the course is a program requirement).

Business Core Requirements .....All Options 23 Credits
- ACC 121 Principles of Accounting I 4
- ACC 122 Principles of Accounting II 4
- BUS 115 Introduction to Business 3
- BUS 216 Legal Environment of Business 3
- BUS 217 Business Communications and Report Writing 3
- CIS 118 Introduction PC Applications 3
- ECONOMICS Course 3

ACCOUNTING EMPHASIS
Program Requirements - AAS

In addition to the Business Core, the following business courses are required:
- ACC 115 Payroll Accounting 3
- ACC 235 Computer Accounting Small Business 3
- ACC 131 Income Tax OR 1
- ACC 132 Tax Help Colorado AND 2
- ACC 133 Tax Help Colorado Practicum 1
- CIS 259 MOS Cert Expert Excel 1
- MAN 128 Human Relations in Organizations 3
- Electives 9

Approved Electives to meet 60 total credits for the AAS degree.
NOTE: *ACC 101 Fundamentals of Accounting* **AND** *BUS 116 Personal Finance may be substituted for ACC 121 and ACC 122 in the following AAS Business Options: Web Design and Marketing emphasis.*

Business Electives
Any MAN, MAR, BUS, ECO, FIN, ACC, CIS, MGD, CWB courses, PHI 205 Business Ethics, or other approved courses.

BUSINESS ADMINISTRATION EMPHASIS
Program Requirements – AAS

In addition to the Business Core, the following business courses are required:
- ECO 201 Principles of Macroeconomics OR
- ECO 202 Principles of Microeconomics 3
- MAN 226 Principles of Management 3
- MAN 128 Human Relations in Organizations 3
- MAR 216 Principles of Marketing 3
- Electives 10

Approved Electives to meet 60 total credits for the AAS degree.
NOTE: *ACC 101 Fundamentals of Accounting* **AND** *BUS 116 Personal Finance may be substituted for ACC 121 and ACC 122 in the following AAS Business Options: Web Design and Marketing emphasis.*

Business Electives
Any MAN, MAR, BUS, ECO, FIN, ACC, CIS, MGD, CWB courses, PHI 205 Business Ethics, or other approved courses.

ENTREPRENEURSHIP EMPHASIS
Program Requirements – AAS

In addition to the Business Core, the following business courses are required:
- BUS 102 Entrepreneurial Operations 3
- BUS 116 Personal Finance 3
- MAN 226 Principles of Management 3
- MAN 128 Human Relations in Organizations..... 3
- MAR 216 Principles of Marketing 3
- Electives 7

Approved Electives to meet 60 total credits for the AAS degree.
NOTE: *ACC 101 Fundamentals of Accounting* **AND** *BUS 116 Personal Finance may be substituted for ACC 121 and ACC 122 in the following AAS Business Options: Web Design and Marketing emphasis.*

Business Electives
Any MAN, MAR, BUS, ECO, FIN, ACC, CIS, MGD, CWB courses, PHI 205 Business Ethics, or other approved courses.

MARKETING EMPHASIS
Program Requirements – AAS

In addition to the Business Core, the following business courses are required:
- CWB 130 Complete Web Editing 3
- MAN 128 Human Relations in Organizations 3
- MAR 216 Principles of Marketing 3
- MAR 220 Principles of Advertising 3
- MGD 111 Photoshop or Graphic Design Class 3
- Electives 7

Approved Electives to meet 60 total credits for the AAS degree.
NOTE: *ACC 101 Fundamentals of Accounting* **AND** *BUS 116 Personal Finance may be substituted for ACC 121 and ACC 122 in the following AAS Business Options: Web Design and Marketing emphasis.*

Business Electives

Any MAN, MAR, BUS, ECO, FIN, ACC, CIS, MGD, CWB courses, PHI 205 Business Ethics, or other approved courses.

WEB DESIGN EMPHASIS

Program Requirements – AAS

In addition to the Business Core, the following business courses are required:

- BUS 120 Intro to E-Commerce 3
- CWB 110 Complete Web Authoring 3
- CWB 130 Complete Web Editing 3
- MGD 111 Adobe Photoshop I 3
- Electives 10

Approved Electives to meet 60 total credits for the AAS degree.
NOTE: *ACC 101 Fundamentals of Accounting* **AND** *BUS 116 Personal Finance may be substituted for ACC 121 and ACC 122 in the following AAS Business Options: Web Design and Marketing emphasis.*

Business Electives

Any MAN, MAR, BUS, ECO, FIN, ACC, CIS, MGD, CWB courses, PHI 205 Business Ethics, or other approved courses.

MANAGEMENT EMPHASIS

Program Requirements – AAS

In addition to the Business Core, the following business courses are required:

- MAN 226 Principles of Management 3
- MAN 128 Human Relations in Organizations 3
- MAN 215 Organizational Behavior 3
- MAN 200 Human Resource Management 3
- Additional ECO course: ECO 101 MUST be one of the course taken.
- Electives 7

Approved Electives to meet 60 total credits for the AAS degree.
NOTE: *ACC 101 Fundamentals of Accounting* **AND** *BUS 116 Personal Finance may be substituted for ACC 121 and ACC 122 in the following AAS Business Options: Web Design and Marketing emphasis.*

Business Electives

Any MAN, MAR, BUS, ECO, FIN, ACC, CIS, MGD, CWB courses, PHI 205 Business Ethics, or other approved courses.

ACCOUNTING CERTIFICATE

Required Core Courses:

- ACC 121 Principles of Accounting I 4
- ACC 122 Principles of Accounting II 4
- ACC 115 Payroll Accounting 3
- ACC 235 Computer Accounting - Small Business 3
- CIS 259 Advanced Excel (Prerequisite - CIS 118 or Instructor Approval) 1

Total Credits Required ..... 15 Credits

Electives (6 credits)

- ACC 132 Income Tax Preparation AND 2
- ACC 133 Tax Help Colorado Practicum 1
- AGB 218 Computerized Farm Records 3
- BUS 115 Intro to Business 3
- BUS 216 Legal Environment of Business 3
- CIS 118 Intro to Microcomputer Applications 3
- MAT 112 Financial Math 3

Total Credits Required ..... 21 Credits

Business Electives

Any MAN, MAR, BUS, ECO, FIN, ACC, CIS, MGD, CWB courses, PHI 205 Business Ethics, or other approved courses.

FOUNDATIONS OF BUSINESS I CERTIFICATE

Required Core Courses:

- ACC 121 Principles of Accounting I 4
- BUS 115 Intro to Business 3
- ENG 121 English Composition I OR 3
- COM 115 Public Speaking OR 3
- COM 125 Interpersonal Communications 3
- MAT 112 Financial Math OR 3
- MAT 121 College Algebra OR 4
- BUS 226/MAT 135 Introduction to Statistics 3
- CIS 118 Intro to PC Applications OR 3
- Approved Business Elective or Internship.

Total Credits Required ..... 16-17 Credits

FOUNDATIONS OF BUSINESS II CERTIFICATE

Required Core Courses:

- ACC 121 Principles of AccountIng I 4
- ACC 122 Principles of Accounting II 4
- BUS 115 Intro to Business 3
- ECO 101 Economics of Social Issues OR
- ECO 201 Macroeconomics OR
- ECO 202 Microeconomics 3
- ENG 121 English Composition I OR 3
- COM 115 Public Speaking OR 3
- COM 125 Interpersonal Communications 3
- MAT 112 Financial Math OR 3
- MAT 121 College Algebra OR 4
- BUS 226/MAT 135 Introduction to Statistics 3
- CIS 118 Intro to PC Applications OR 3
- Approved Business Elective or Internship.

Total Credits Required .....23-24 Credits

BASIC TAX PREPARATION CERTIFICATE

Required Core Courses:

- ACC 132 Tax Help Colorado 2
- ACC 133 Tax Help Colorado Practicum 1

Total Credits Required ..... 3 Credits

COSMETOLOGY

CERTIFICATE

Cosmetology is one of the most demanding, rewarding, diversified, and fastest growing specialties in the world today. This program is designed to provide high quality theory and practical training necessary to meet the requirements for today's cosmetologists. This one-year program begins fall semester of each year and meets the training required by Colorado's Department of Regulatory Agency/Cosmetology-Barber Board for state licensing. A NJC Certificate in Cosmetology will be granted upon successful completion of all required courses with a cumulative grade of 2.0 ("C or better"). Graduates are eligible to take the state board exam to obtain a cosmetology license in the state of Colorado.

The Cosmetology department is housed in a 5,082 square foot facility and offers a wide range of salon services to the community.

Program Requirements	**Credits**
COS 103 Shampoos, Rinses, and Conditioners I	1
COS 110 Introduction to Hair Coloring	2
COS 111 Intermediate I Hair Coloring	2
COS 120 Introduction to Haircutting	2
COS 121 Intermediate I Haircutting	2
COS 130 Introduction to Hairstyling	2
COS 131 Intermediate I Hair Styling	2
COS 140 Introduction to Chemical Texture	1
COS 141 Intermediate I Chemical Texture	1
COS 150 Laws, Rules & Regulations	1
COS 160 Intro to Disinfection, Sanitation & Safety	2
COS 161 Intermediate I: Disinfection, Sanitation & Safety	1
COS 203 Shampoos, Rinses, and Conditioners II	1
COS 210 Intermediate II Hair Coloring	2
COS 211 Advanced Hair Coloring	2
COS 220 Intermediate II Haircutting	2
COS 221 Avanced Hair Cutting	2
COS 230 Intermediate II Hair Styling	2
COS 231 Advanced Hair Styling	1
COS 240 Intermediate II Chemical Texture	1
COS 241 Advanced Chemical Texture	1
COS 250 Management, Ethics, Interpersonal Skills & Salesmanship	1
COS 260 Intermediate II Disinfection, Sanitation & Safety	2
COS 261 Advanced Disinfection, Sanitation & Safety	1
EST 110 Introduction to Facials & Skin Care	3
EST 111 Intermediate Facial & Skin Care	2
EST 210 Advanced Massage & Skin Care	2
EST 211 Facial Makeup	1
EST 212 Hair Removal	3
MAN 128 Human Relations in Organizations	3
NAT 110 Introduction to Manicures & Pedicures	3
NAT 111 Intermediate Manicures & Pedicures	2
NAT 210 Advanced Manicures & Pedicures	2
NAT 211 Application of Artificial Nails	5
NAT 290 Advanced Nail Technician Studies	1
Total required for Cosmetology Certificate	64 Credits

DIESEL TECHNOLOGY

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Diesel Technology program is a training program which will focus on the service, repair, and maintenance of medium/heavy duty trucks as well as agricultural and industrial equipment. All courses will follow ASE and N.A.T.E.F. standards and students will be working on live-units with real-world problems to diagnose and repair to gain the hands-on experience they need to become successful technicians. Only students with a cumulative 2.0 GPA or better at the end of their 2nd semester will be allowed to continue to their 3rd semester.

Graduates of the Diesel Technology program will receive either a Northeastern Junior College Certificate or an Associate of Applied Science degree.

Detailed information regrading this program and admission requirements may be obtained from the Office of Admission, Northeastern Junior College.

General Education Requirements	**15 Credits**
BUS 115 Introduction to Business	3
CIS 117 Introduction to Technical Applications	2
ENG 115 Technical English & Communication OR	
ENG 121 English Composition I OR	
ENG 131 Technical Writing	3
MAT 102 Skilled Trades & Industrial Math	2
REA 130 Applied and Technical Reading	2
MAN 128 Human Relations in Organizations	3

Required Courses	**59 Credits**
DPM 101 Diesel Shop Orientation	2
DPM 103 Diesel Engines I	4
DPM 105 Heavy Duty Powertrains I	3
DPM 106 Diesel Fuel Systems	3
DPM 111 Cab & Electrical PMI	1.5
DPM 112 Engine Systems PMI	1.5
DPM 120 Basic Heavy Duty Electricity	2
DPM 121 Hydraulics I	3
DPM 126 Heavy Duty Starting & Charging	3
DPM 140 Heavy Duty Steering & Suspension I	3
DPM 203 Diesel Engines II	4
DPM 205 Heavy Duty Powertrains II	3
DPM 206 Heavy Duty Brakes I	3
DPM 207 Heavy Duty Brakes II	3
DPM 208 H/D Automatic Trans. Diagnosis	1
DPM 210 Diesel Air Induction & Exhaust	2
DPM 211 Drivetrain and Steering PMI	1.5
DPM 212 Brakes Systems PMI	1.5
DPM 222 Heavy Duty Lighting & Instrumentation	3
DPM 223 H/D Body Electrical Systems	3
DPM 240 Heavy Duty Steering & Suspension II	3
DPM 264 H/D Heating & Ventilation	2
DPM 265 H/D A/C Systems Service	3
Total Credits Required	**74 Credits**

Suggested Elective

The following is a suggested elective course that a student may take.

DPM 122 Hydraulics II	3
ASE 165 Engine Machining	2

DIESEL TECHNOLOGY

EIGHT CERTIFICATES

H/D Brakes Certificate (9.5 credits)

DPM 101 Diesel Shop Orientation	2
DPM 206 Heavy Duty Brakes I	3
DPM 207 Heavy Duty Brakes II	3
DPM 212 Brakes Systems PMI	1.5

Diesel Electrical Certificate (14.5 credits)
- DPM 101 Diesel Shop Orientation 2
- DPM 111 Cab & Electrical PMI 1.5
- DPM 120 Basic Heavy Duty Electricity 2
- DPM 126 Heavy Duty Starting & Charging 3
- DPM 222 Heavy Duty Lighting and Instrumentation 3
- DPM 223 Heavy Duty Body Electrical Systems 3

H/D Steering & Suspension Certificate (8 credits)
- DPM 101 Diesel Shop Orientation 2
- DPM 140 Heavy Duty Steering & Suspension I..... 3
- DPM 240 Heavy Duty Steering & Suspension II..... 3

Diesel HVAC Certificate (7 credits)
- DPM 101 Diesel Shop Orientation 2
- DPM 264 Heavy Duty Heating & Ventilation 2
- DPM 265 Heavy Duty A/C Systems Service 3

Diesel Engines Certificate (16.5 credits)
- DPM 101 Diesel Shop Orientation 2
- DPM 103 Diesel Engines I 4
- DPM 106 Diesel Fuel Systems 3
- DPM 112 Engine Systems PMI 1.5
- DPM 203 Diesel Engines II 4
- DPM 210 Diesel Air Induction & Exhaust 2

Hydraulics Certificate (8 credits)
- DPM 101 Diesel Shop Orientation 2
- DPM 121 Hydraulics I 3
- DPM 122 Hydraulics II 3

H/D Powertrains Certificate (10.5 credits)
- DPM 101 Diesel Shop Orientation 2
- DPM 105 Heavy Duty Powertrains I 3
- DPM 205 Heavy Duty Powertrains II 3
- DPM 208 H/D Automatic Trans. Diagnosis 1
- DPM 211 Drivetrain and Steering PMI 1.5

EARLY CHILDHOOD

For those who want the opportunity to provide a positive influence on the lives of children and their families, early childhood is a fascinating field in which to work. The demand for early childhood educators is great. Because of the large numbers of families in which all adults are employed, trends in the national economy, government priorities for children and their families, and public demand for services this field continues to grow.

See Page 55 for AA degree requirements in Early Childhood.

EARLY CHILDHOOD EDUCATION

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Early Childhood Associate Teacher Program is designed to prepare persons to meet the requirements for a variety of positions within early childhood programs. Upon completion of this degree, individuals will be group leader qualified. They will be able to independently implement program activities and will be responsible for the care and education of a group of children. Individuals will also have the necessary coursework to establish director qualifications and infant toddler nusery supervisor qualification in the State of Colorado after completing the work experience requirement.

Early childhood teachers and directors work in a variety of settings: private and public preschool and child care settings supported and operated by the employer, hospitals, recreation centers, before/after-school programs, Head Start, and other programs serving children birth to age eight. A Northeastern Junior College Associate of Applied Science Degree is granted upon completion.

General Education Requirements ..... 18 Credits

Communication ..... 6 Credits
- ENG 121 English Composition I 3
- COM 115 Public Speaking OR
- COM 125 Interpersonal Communication 3
  (*ECE - A.A. can only take COM 115*)

Mathematics ..... 3 Credits
- MAT 107 Career Mathematics 3
- MAT 112 Financial Mathematics 3
- MAT 121 College Algebra 4
- MAT 135 Introduction to Statistics 3

Science or Computer Science .....3 Credits
- AST 101 Astronomy I 4
- BIO 111 General College Biology I 5
- CIS 118 Introduction to PC Applications 3
- EDU 261 Teaching, Learning, Technology 3
- or another approved Science or Computer Science course

Social & Behavioral Sciences .....6 Credits
- PSY 101 General Psychology I OR
- PSY 102 General Psychology II 3
- SOC 101 Introduction to Sociology I 3

Program Requirements ..... 51 Credits
- ECE 101 Intro to Early Childhood Profession 3
- ECE 102 Intro to Early Childhood Lab Techniques 3
- ECE 103 Guidance Strategies for Children 3
- ECE 108 Assessment Process in ECE 1
- ECE 111 Infant/Toddler Theory and Practice 3
- ECE 112 Intro to Infant/Toddler Lab Techniques 3
- ECE 205 Nutrition, Health, & Safety 3
- ECE 209 Observing/Utilizing Assessment 1
- ECE 220 Curriculum Development: Methods & Tech..... 3
- ECE 226 Creativity and the Young Child 3
- ECE 228 Language & Literacy 3
- ECE 238 Child Growth & Development 3
- ECE 240 Admin. of Early Childhood Care & Edu. Programs..... 3
- ECE 241 Admin: Human Relations 3
- ECE 256 Working w/ Parents, Families 3
- ECE 260 Exceptional Child OR 3
- ECE 265 Working w/Parents & Families w/Disabilities 3
- ECE 288 Practicum: Early Childhood Ed 6
- HWE 103 Community First Aid & CPR 1

EARLY CHILDHOOD: DIRECTOR

CERTIFICATE

The Director Certificate is designed for persons who have 24 months or more of verified work experience with young children and wish to establish director qualifications in the State of Colorado. The work experience must be full days working directly with childen in a child development program.

Program Requirements ..... 36 Credits

- ECE 101 Intro to Early Childhood Profession 3
- ECE 102 Intro to Early Childhood Lab Techniques 3
- ECE 103 Guidance Strategies for Children 3
- ECE 111 Infant/Toddler Theory 3
- ECE 205 Nutrition, Health, & Safety 3
- ECE 220 Curriculum Development: Methods & Tech..... 3
- ECE 238 Child Growth & Development 3
- ECE 240 Admin. of Early Childhood Care & Edu. Programs..... 3
- ECE 241 Admin: Human Relations 3
- ECE 260 Exceptional Child 3
- PSY 101 General Psychology I 3
- SOC 101 Introduction to Sociology I 3

EARLY CHILDHOOD: GROUP LEADER

CERTIFICATE

The Group Leader Certificate is designed for persons who have nine months or more of verified work experience with young children and wish to establish group leader qualifications within the State of Colorado. The work experience must be in the care and supervision of four or more children under 6 years of age who are not related to the individual.

Program Requirements ..... 16 Credits

- ECE 101 Intro to Early Childhood Profession 3
- ECE 102 Intro to Early Childhood Lab Techniques 3
- ECE 103 Guidance Strategies for Children 3
- ECE 209 Observing/Utilizing Assmt. Instruments 1
- ECE 220 Curriculum Development 3
- ECE 238 Child Growth & Development 3

EARLY CHILDHOOD: NANNY

CERTIFICATE

The Early Childhood Nanny program is designed to professionally prepare and enable students to be in-home child care professionals. They work as a member of the family team to provide for children's physical, emotional, social, and intellectual needs.

Program Requirements ..... 35 Credits

- ECE 101 Intro to Early Childhood Profession 3
- ECE 102 Intro to Early Childhood Lab Techniques 3
- ECE 103 Guidance Strategies for Children 3
- ECE 111 Infant/Toddler Theory and Practice 3
- ECE 112 Intro to Infant/Toddler Lab Techniques 3
- ECE 130 The Professional Nanny 3
- ECE 131 Nanny Methods & Techniques 3
- ECE 205 Nutrition, Health, & Safety 3
- ECE 209 Observing Young Children 1
- ECE 238 Child Growth & Development 3
- ECE 256 Working w/ Parents, Families 3
- ECE 260 The Exceptional Child 3
- HWE 103 Community First Aid & CPR..... 1

Suggested Electives ..... 3 Credits

- ENG 121 English Composition I 3

EMERGENCY MEDICAL SERVICES

Essential Functions: The ability to communicate verbally, the ability to lift, care, and balance up to 125 pounds (250 with assistance), the ability to interpret written, oral and diagnostic form instructions, the ability to use good judgment and remain calm in high-stress situations, the ability to work effectively in an environment with loud noises and flashing lights, the ability to calculate weight and volumes ratios and read small print, both under threatening time constraints, the ability to read and understand English language manuals and road maps, to accurately discern street signs and address numbers, the ability to document, in writing, all relevant information in prescribed format in light of legal ramifications of such, the ability to converse in English with coworkers and hospital staff as to status of patient. Good manual dexterity. The ability to bend, stoop, and crawl on uneven terrain, and the ability to withstand varied environmental conditions such as extreme heat, cold, and moisture. The ability to work in low light, confined spaces, and other dangerous environments.

ASSOCIATE OF APPLIED SCIENCE DEGREE

General Education Requirements ..... Credits

Communication ..... 6 Credits

- ENG 121 English Composition I 3
- ENG 122 English Composition II OR 3
- COM 115 Public Speaking 3

Mathematics ..... 3 Credits
MAT 107 Career Math 3

Science/Computer Science ..... 5 Credits
BIO 111 General College Biology with Lab 5

Social Sciences/Humanities ..... 3 Credits
PSY 102 General Psychology II 3

Program Requirements ..... 30.5 Credits
BIO 201 Human Anatomy and Physiology I 4
BIO 202 Human Anatomy and Physiology II 4
CIS 118 Introduction to PC Applications 3
EMS 121 EMT Fundamentals 3
EMS 122 EMT Medical Emergencies 4
EMS 123 EMT Trauma Emergencies 3
EMS 170 EMT - Clinical 1
HPR 178 Medical Terminology 2
HPR 102 CPR for Professionals 5
PSY 235 Human Growth & Development 3
PSY 238 Child Development 3

Suggested Electives..... (Select a minimum of 13 credits)
ACC 101 Fundamentals of Accounting 3
BUS 216 Legal Environment of Business 3
BUS 217 Business Communication & Report Writing 3
FST 107 Hazmat Operations 3
HWE 100 Human Nutrition 3
HWE 117 Mental Health First Aid 1
MAN 128 Human Relations in Organizations 3
SOC 101 Sociology 3

EMERGENCY MEDICAL TECHNICIAN: BASIC

CERTIFICATE

Upon completion of the Emergency Medical Technical Program the student will meet the prerequisite for taking the National Registry Examination for Emergency Medical Technicians. The program will teach skills in emergency treatment procedures as used with an ambulance service.

Required Courses ..... Credits
EMS 121 EMT Fundamentals 3
EMS 122 EMT Medical Emergencies 4
EMS 123 EMT Trauma Emergencies 2
EMS 170 Emergency Medical Technician -Clinical 1

EMERGENCY MEDICAL TECHNICIAN: CONTINUING EDUCATION

NJC is approved by the Colorado EMS Department as a Continuing Education Provider Group at the Basic and Intermediate level. Contact the EMS Coordinator for information about courses available.

EMERGENCY MEDICAL TECHNICIAN: INTERMEDIATE

CERTIFICATE

This course is designed to introduce the student to the theories and practices of advanced level assessment and management of the emergency patient as outlined by the State of Colorado, specifically: establish an intravenous line, provide advanced airway management, perform cardiac monitoring and defibrillation, and medication administration.

Required Courses ..... Credits
EMS 203 Emergency Medical Technician - Intermediate I 6
EMS 205 Emergency Medical Technician - Intermediate II 6
EMS 270 Clinical EMS Intermediate 3

HEALTH AND SAFETY

CPR and First Aid

Health and Safety offers cardio pulmonary resuscitation (CPR) classes to lay responders and professional rescuers. Training is available for community members, professional health care providers, law enforcement agencies, fire departments, and businesses.

Universal certificates of completion are available for participants who meet all course requirements for that particular Health and Safety course.

EQUINE BUSINESS MANAGEMENT

ASSOCIATE OF APPLIED SCIENCE DEGREE

General Education Requirements ..... 15 Credits
AGE 102 Agriculture Economics 3
ASC 100 Animal Science 3
COM 115 Public Speaking 3
ENG 115 Technical English & Communication OR
ENG 121 English Composition I OR
ENG 131 Technical Writing I 3
MAT 107 Career Math 3

Program Requirements ..... 31 Credits
AGB 120 Agriculture Sales 3
AGB 218 Computerized Farm Records 3
AGB 228 Agri-Business Management 3
AGE 208 Agriculture Finance 3
ASC 102 Intro to Equine Science 4
ASC 225 Feeds and Feeding 4
CIS 118 Intro to PC Applications 3
EQM 158 Equine Reproduction 2
EQM 210 Equine Health 2
EQM 211 Equine Health Lab 1
MAN 205 Event Planning: Equine 3

Suggested Electives ..... 14 Credits

Elective courses must be approved by a NJC Advisor or Program Coordinator. Preference for AGB, AGE, AGP, AGR, AME, AGY, RAM, ASC, EQM, BUS, MAN, MAR, MGD, or other related course work. The student must demonstrate a minimum skill level in handling or riding horses. There are two methods to complete the requirement: Prior equine skill experience submitted by documentation involving handling, training, care, or training of horses or course work involving skills in horse handling, riding, or training or courses designed for preparation in competitive equine events such as Rodeo or Versatility Ranch Horse.

EQUINE BUSINESS MANAGEMENT

CERTIFICATE ..... 30 Credits

Required Courses ..... 9 Credits

- CIS 118 Intro to PC Applications 3
- ENG 115 Technical English & Communication OR
- ENG 131 Technical Writing I OR
- Higher English 3
- MAT 107 Career Math 3

Program Electives ..... 21 Credits

All elective courses must be approved by a NJC Advisor or Program Coordinator. Minimum of six (6) credits in Equine related courses. Minimum of nine (9) additional credits in Agriculture or Business related courses. No more than one of the following courses may be used to fulfill requirements: EQT 101, EQT 102, EQT 201, or EQT 202. A maximum of two (2) credits may be used from EQM 101, EQM 102, EQM 201, or EQM 202. The student must demonstrate a minimum skill level in handling or riding horses. There are two methods to complete the requirement: Prior equine skill experience submitted by documentation involving handling, training, care, or training of horses or course work involving skills in horse handling, riding, or training or courses designed for preparation in competitive equine events such as Rodeo or Versatility Ranch Horse.

EQUINE MANAGEMENT

ASSOCIATE OF APPLIED SCIENCE DEGREE

The horse industry in the United States is a growing, dynamic sector of agriculture with a broad spectrum of jobs expanding in the industry. The Equine Management Program is designed to provide the students with basic, general skills and background knowledge in all areas of the equine industry such as reproduction, health, selection, and general management, however the primary emphasis is placed on training of the Western Horse. Should students aspire to prepare for management opportunities in breeding operations, shed rows, or training facilities, the two year program provides access to the business, economic, technical, and general education classes necessary to become a competent manager. Students desiring a four year Equine Science degree should enroll in our transfer *Equine Sciences major.*

Enrollment is limited in the Equine Management program to enhance the individual instruction. This allows students to meet individual career objectives. Practical experience is provided in many of the classes as well as the Internship section of the program which is completed in the summer following their sophomore year.

All students desiring admission to the Equine Management program must make application and go through an oral interview and a practical riding exam before admission is granted.

General Education Requirements ..... 16 Credits

- ASC 100 Animal Sciences 3
- ASC 102 Introduction to Equine Science 4
- AGE 102 Agricultural Economics 3
- ENG 115 Technical English & Communication OR
- ENG 121 English Composition I OR
- ENG 131 Technical Writing I 3
- MAT 107 Career Math OR higher math 3

Program Requirements ..... 55.5 Credits

- AGB 218 Computerized Farm Records 3
- AGB 228 Agri-Business Management OR
- AGE 205 Farm and Ranch Management 3
- AME 105 Basic Agricultural Mechanic Skills 2
- ASC 225 Feeds and Feeding 4
- EQM 101 Stable Operations I 1
- EQM 102 Stable Operations II 1
- EQM 158 Equine Reproduction 2
- EQM 201 Stable Operations III 1
- EQM 202 Stable Operations IV 1
- EQM 210 Equine Health 2
- EQM 211 Equine Health Lab 1
- EQM 280 Equine Internship 8
- EQM 289 Equine Capstone 0.5
- EQT 101 Intro to Horse Training 5
- EQT 102 Beginning Colt Training 6
- EQT 201 Intermediate Colt Training 6
- EQT 202 Advanced Colt Training 6
- MAN 205 Event Planning 3

Suggested Electives ..... 9 Credits

- AGP 160 Ranch Horsemanship Skills 2
- EQT 140 Ranch Horse Versatility 3
- EQT 240 Ranch Horse Versatility II 3

EQUINE MANAGEMENT - TRAINING

CERTIFICATE ..... 30 Credits

Required Courses ..... 13 Credits

- EQM 101 Stable Operations I 1
- EQM 102 Stable Operations II 1
- EQT 101 Intro to Horse Training 5
- EQT 102 Beginning Horse Training 6

Program Electives ..... 17 Credits

All elective courses must be approved by a NJC Advisor or Program Coordinator. Preference for Equine, Agriculture, or Business courses.

FIRE SCIENCE TECHNOLOGIES

Fire Science Technology is the study of:

- The physical properties of fire
- Strategy and tactics of fire suppression and prevention
- Life Safety Engineering
- Fire Administration
- Fire and Public Education
- Hazardous Materials Handling, Response, and Transportation
- Arson investigation
- Emergency Medical Response & Transportation
- Disaster Management, Preplanning, and Recovery

The specialized knowledge gained through an education in fire science equips first responders with the skills and mental tools to effectively save lives and protect property and the environment. Careers in emergency services require courage, endurance, integrity, and the ability to make good and quick decisions in emergencies. Teamwork is necessary to safely solve an emergency situation. The qualities of hard work and self discipline must be quickly mastered through both online and traditional residential learning opportunities. You will take these characteristics from the classroom to the fire station and throughout your life.

The Fire Science Technology program at NJC offers an Associate of Applied Science degree designed to meet the needs of personnel seeking entry into the fire career fields. Courses are accessible through traditional classroom, online, and hybrid formats. The NJC program meets all of the criteria as adopted in the Fire and Emergency Services Higher Education (FESHE) curriculum model. You may also apply prior knowledge and skills earned through other classroom experiences via our Credit for Prior Learning assessment.

You may find through your training experience that you have a desire to follow other career paths within the emergency services profession. Some of the exciting careers include:

- Firefighter
- Fire Investigator
- Special Rescue and Tactics Technician
- Fire Adminstration Manager/Chief
- Environmental Crimes Investigator
- Public Education Specialist
- Hazardous Materials Technician/Coordinator
- Industrial Safety Officer
- FEMA Response Agent
- Emergency Manager
- Paramedic

In order to provide the best services and marketability, it is our desire to graduate students with the following state certifications:

- Fire Fighter I
- Hazardous Materials Operations Level
- Wildland Fire Fighter (Red Card)
- Emergency Medical Technician Basic

Essential Functions:

- Able to communicate effectively in English, both verbally and in writing
- Lift and carry 50 to 100 pounds
- Stand, walk on rough ground or uneven surfaces, run, balance, twist or turn, reach, pull, climb stairs and ladders, work at heights, balance, bend/stoop, crouch/squat, crawl/kneel, etc.
- Able to see near and far

General Education Requirements ..... 16 Credits

BIO 104 Biology: A Human Approach	4
CIS 118 Intro to PC Applications	3
ENG 115 Technical English & Communication OR	
ENG 121 English Composition I OR	
ENG 131 Technical Writing	3
MAT 107 Career Math	3
PSY 102 General Psychology II	3

Program Requirements ..... 34.5 Credits

FST 100 Firefighter I	9
FST 102 Principles/Emergency Services	3
FST 103 Fire Behavior and Combustion	3
FST 105 Building Construction for Fire Professionals	3
FST 107 HazMat Operations (Level 1)	3
FST 128 Vehicle Extrication Technician	3
FST 202 Strategy and Tactics	3
FST 209 Fire Protection Systems	3
FSW 100 S-190 Intro to Wildland Fire	1
FSW 101 S-130 Firefighting Training	2
HPR 102 CPR for Professionals	0.5
PED 101 Conditioning Lab Fire Academy	1

Other Electives - (Select a minimum of 13 elective credits)

FST 101 Firefighter II	3
FST 106 Fire Prevention	3
FST 150 Fire Prevention Education	3
FST 170 Clinical I	1
FST 175 Special Topics	3
FST 201 Instructional Methodology	3
FST 203 Fire Hydraulics and Water Supply	3
FST 204 Principles of Code Enforcement	3
FST 205 Fire Investigation I	3
FST 253 NIMS	3
FST 254 HazMat Technician Level	3
FST 259 Wildland Firefighting Tactics	3
FST 280 Internship	1-12
EMS 115 First Responder	3
EMS 121 EMT Fundamentals	3
EMS 122 EMT Medical Emergencies	4
EMS 123 EMT Trauma Emergencies	2
EMS 130 EMT Intravenous Therapy	2
EMS 170 EMT Clinical	1
EDU 250 CTE in Colorado	1
EDU 260 Adult Learning & Teaching	3
Any GT Pathways Course or AAS Elective on Page 48	

TOTAL HOURS FOR GRADUATION: 63.5

NOTE: Students interested in a fire career that incorporates Emergency Medical Technician-Paramedic level work must successfully complete both Anatomy and Physiology I and II (BIO 201/202) courses.

FIREFIGHTER I

This program is designed to prepare individuals who have little or no experience with the firefighting profession for entry-level positions in the fire service industry. The course addresses the requirements necessary to perform at the first level of progression as identified in National Fire Protection Association (NFPA) 1001, Firefighter Professional Qualifications. This is a lecture and lab course for meeting the NFPA 1001, level I, standard using IFSTA Essentials.

Upon successful completion the student will receive a NJC certificate and is eligible to register for the Colorado State Firefighter I Exam which is an IFSAC accredited certificate.

BASIC LEVEL CERTIFICATE

Program Requirements	**13 Credits**
FST 100 Firefighter I	9
FST 107 HazMat Operations (Level 1)	3
PED 101 Conditioning Lab	1

ADVANCED LEVEL CERTIFICATE

Program Requirements	**16.5 Credits**
FST 100 Firefighter I	9
FST 107 HazMat Operations (Level 1)	3
FSW 100 Intro to Wildland Fire Behavior	1
FSW 101 Firefighting Training	2
HPR 102 CPR for Professionals	.5
PED 101 Conditioning Lab	1

FIREFIGHTER INSTRUCTOR

CERTIFICATE

For those who have experience and training and would like to teach others in firefighting.

Program Requirements	**7 Credits**
FST 201 Instructional Methodology	3
EDU 250 CTE in Colorado	1
EDU 260 Adult Learning & Teaching	3

FIRST RESPONDER

CERTIFICATE

This 58-hour course is designed to train individuals who are likely to be the first people who arrive on the scene of an emergency to properly assess victims, provide immediate emergency care, and stabilize victims until ambulance personnel arrive.

Required Courses	**Credits**
EMS 115 First Responder	3

INDUSTRIAL MAINTENANCE

CERTIFICATE

This certificate is designed to give the student the skills to work in an industrial or commercial facility. The student would have the ability to work safely while performing maintenance and repair of mechanical equipment.

Program Requirements	**18.5 Credits**
EIC 101 Job Training and Safety	3
ELT 106 Fundamentals of AC/DC	4
MIL 101 Lifting Devices	1
IMA 100 Intro to Industrial Maintenance	3
IMA 120 Industrial Rotating Equipment	3
MAT 107 Career Math	3
Minimum of 1.5 credits in welding courses	1.5

*Open to any student. Must pass EIC 101 with a 90%.

INDUSTRIAL MOTOR CONTROL

CERTIFICATE

This certificate is designed to give the student the skills to work in an industrial or commercial facility. The student would have the ability to work safely while performing maintenance and repair of electrical systems.

Program Requirements	**27 Credits**
CIS 118 Intro to PC Applications	3
EIC 101 Job Training and Safety	3
ELT 106 Fundamentals of AC/DC	4
ELT 107 Fundamentals of Industrial Electronics	3
ELT 252 Motors and Controls	3
ELT 258 Programmable Logic Controllers	3
IMA 150 Industrial Problem Solving	2
MAT 107 Career Math	3
WTG 110 Power Distribution & Control Systems	3

*Open to any student. Must pass EIC 101 with a 90%.

NURSE AIDE

CERTIFICATE OF ACHIEVEMENT

This short program prepares students to work as a Certified Nurse Aide in a hospital, nursing home, or other health related agency. After successful completion the student is eligible to take the Colorado Board of Nursing examination to become certified.

Required Courses	Credits
NUA 101 Nurse Aide Health Care Skills	4
NUA 170 Nurse Aide Clinical Experience	1

PRACTICAL NURSING (PN)

CERTIFICATE (Exit Option)

Practical Nursing has earned a respected place on the health care team. This program provides qualified individuals the theory and practical skills necessary to meet the occupational entry-level requirements. Practical nurses are trained to give basic bedside nursing care under supervision of a registered nurse, licensed physician, or dentist.

The nursing student will have theory, lab, and clinical experiences to assist the student to gain the knowledge, skills, and attitudes of a successful nurse. The practical nursing certificate can be awarded to a student who completes the first year of the two year associate degree program and takes an additional course in the summer, NUR 169 Transition into Practical Nursing. This certificate in practical nursing will be awarded with a grade of a "C" or better in all required course work. After receiving the certificate of Practical Nursing the student is eligible to take the NCLEX-PN exam (state board exam) to become a Licensed Practical Nurse (LPN).

Required Pre-Admission Courses: (Prerequisite courses):	**15 Credits**
ENG 121 English Composition I	3
HPR 108 Dietary Nutrition	1
OR	
HWE 100 Human Nutrition	3
BIO 201 Human Anatomy & Physiology I	4
BIO 202 Human Anatomy & Physiology II	4
PSY 235 Human Growth & Development	3

Required General Education Courses:	**14 Credits**
BIO 204 Microbiology	4
BIO 216 Pathophysiology	4
MAT 103 Math for Clinical Calculations or higher level math course	3
3 credit elective in Social Science	3

Program Requirements	**25 Credits**
NUR 106 Medical Surgical Nursing Concepts	7
NUR 109 Fundamentals of Nursing	6
NUR 112 Basic Concepts of Pharmacology	2
NUR 150 Maternal Child Nursing	6
NUR 169 Transition into Practical Nursing	4

Total Required Credits ..... 54 Credits

ASSOCIATE DEGREE NURSING

ASSOCIATE OF APPLIED SCIENCE DEGREE

Associate Degree Nursing (ADN) Program: is a 4 semester program after completing a set of prerequisite courses. Students graduate with an Associate of Applied Science in Nursing and are then eligible to take the NCLEX-RN (nursing state board exam) to become a Registered Nurse (RN). RNs are in high demand and are the largest group of health care providers in the United States. RNs have both independent and dependent functions in providing patient care to include patient assessment, implementing doctors' orders, and providing patient education. RNs work in a variety of settings including hospitals, home care agencies, long term care facilities, clinics, public health care agencies, and schools.

The nursing program includes both instructional and clinical experience to provide the student with the knowledge and hands on experience to provide safe and compassionate nursing care. The nursing faculty also strive to teach the values and professionalism nurses will need to have a rewarding career in nursing. Clinical experiences vary and may occur on weekends or nights and will include eight or twelve hour shifts in facilities from surrounding areas including Nebraska. Travel may be required up to a 200 mile radius of campus.

Applicants who desire to enter the ADN program must satisfy the following requirements for admission:

1. Applicants must meet general admission requirements.
2. Applicants must submit all material required under admission information of this catalog.
3. Applicants must demonstrate readiness for college level course work in reading, math, and English.
4. Completion of the preadmission nursing entrance exam available at the counseling office.
5. Completion of the following prerequisite courses which require a GPA of 2.5 or better. All courses need to be at least a "C".

Program Prerequisites: ..... 15 or 17 Credits	
BIO 201 Anatomy and Physiology I with lab	4
BIO 202 Anatomy and Physiology II with lab	4
ENG 121 English Composition I	3
HPR 108 Dietary Nutrition OR	1
HWE 100 Human Nutrition	3
PSY 235 Human Growth and Development	3

All Biology (BIO) prerequisites must be completed within 7 years of entry into NJC's nursing programs.

Once all prerequisites are completed the student must apply to the ADN program. This is a separate application than general admission to the college. The student needs to apply to the college first and be assigned an S number. Please contact the nursing department for specific directions on how to apply to the nursing program. Acceptance into the ADN program is a competitive process. Points will be assigned based on the following: grade point average on prerequisites, prior degree, certification as a nurse aide, successful completion of Jump Start to Nursing course, nursing pre-admission test results, and proof of residency for one year from NJC's service area. Applicants will be selected on total points earned. Once accepted into the program the following must be completed.

- Satisfactorily pass a criminal background check (not to be done earlier than 90 days of start date of program)
- Health statement/proof of immunization for medical clearance
- Professional CPR Certificate that must not expire until after graduation.
- Negative drug screen

It is highly recommended that you meet with a nursing advisor to ensure all requirements have been met.

General Education

Program Requirements: ..... 14 Credits

BIO 204 Microbiology 4
BIO 216 Pathophysiology 4
MAT 103 Math for Clinical Calculations..... 3
OR Higher Level Math Course
Social Science Elective 3

All Biology (BIO) prefixes and/or science courses are valid for 7 years from the time of the completion to the start of the Nursing Program.

Nursing Education

Program Requirements: ..... 42.5 Credits

1st year
NUR 106 Medical Surgical Nursing Concepts 7
NUR 109 Fundamentals of Nursing 6
NUR 112 Basic of Pharmacology 2
NUR 150 Maternal Child Nursing 6

*Optional NUR 169 Transition into Practical Nursing ..... (4)

2nd year
NUR 206 Advanced Concepts of Medical-Surgical Nursing I 6.5
NUR 211 Psychiatric Mental Health Nursing 4
NUR 212 Pharmacology II 2
NUR 216 Advanced Concepts of Medical-Surgical Nursing II 5
NUR 230 Transition to Professional Nursing 4

Total Required Credits ..... 71.5 Credits

LPN to Associate Advanced Placement Option (LPN to ADN)

LPNs who desire to further their education can enter the second year of the ADN program after completing NUR 189 Transition from LPN to ADN (3 credits) course. After successful completion of the 2nd year these students are eligible to take the NCLEX-RN (nursing state board exam) to become a Registered Nurse (RN). A student who wishes to enter the second year of the associate degree program must be a LPN and have all the prerequisites and general education requirements satisfactorily completed. Students who graduated from a practical nursing program three or more years ago have additional requirements for entry as part of the Colorado Articulation Agreement. Contact the nursing department for more information 970-521-6701.

Required Pre-Admission Courses: .....29 Credits
(Pre-requisite courses):

ENG 121 English Composition I 3
HPR 108 Dietary Nutrition 1
OR
HWE 100 Human Nutrition 3
BIO 201 Human Anatomy & Physiology I 4
BIO 202 Human Anatomy & Physiology II 4
PSY 235 Human Growth & Development 3
BIO 204 Microbiology 4
BIO 216 Pathophysiology 4
MAT 103 Math for Clinical Calculations 3
or higher level math course
3 credit elective in Social Science 3

Program Requirements ..... 24.5 Credits

NUR 189 Transition from LPN to ADN 3
NUR 206 Advanced Concepts of Medical Surgical Nursing I 6.5
NUR 211 Psychiatric Mental Health Nursing 4
NUR 212 Pharmacology II 2
NUR 216 Advanced Concepts of Medical surgical Nursing II 5
NUR 230 Transition to Professional Nursing 4

Transfer block credits from first year..... 21 Credits

Total Required Credits ..... 74.5 Credits

The ADN program is accredited by the Accreditation Commission for Education in Nursing (ACEN). Contact information: 3343 Peachtree Road NE, Suite 850, Atlanta, Georgia 30326, 404-975-5000.

WELDING TECHNOLOGY

ASSOCIATE OF APPLIED SCIENCE DEGREE

Welding is a common process used in the manufacturing and construction industries as well as in repair work. Many welders are certified in one or more welding techniques such as stick welding, MIG welding, and TIG welding. Welders are frequently employed in the shipbuilding, automobile, and aerospace industries. Welders also join beams and girders and the like in commercial and residential construction. They may work on pipelines or help construct and maintain power plants and refineries. Some welders prefer to start their own business or go on the road with a welding truck and work on pipelines and other large construction projects. Some welders operate welding machines instead of welding by hand. Welding machine operators are in great demand as they have knowledge of various welding techniques and how to operate industrial welding equipment.

General Education Requirements .....Minimum 15 Credits

CIS 118 Intro to PC Applications 3
COM 115 Public Speaking OR
COM 125 Interpersonal Communications 3
ENG 121 English Composition I OR
ENG 131 Technical Writing 3
MAN 128 Human Relations 3
MAT 107 or higher 3

Program Requirements ..... 40 Credits

WEL 100 Safety for Welders	1
WEL 106 Blueprint Read-Welders/Fitters	4
WEL 110 Advanced Shielded Metal Arc I	4
WEL 113 Oxyfuel and Plasma Cutting	2
WEL 124 Intro-Gas Tungsten Arc Welding	4
WEL 201 Gas Metal Arc Welding I	4
WEL 203 Flux Cored Arc Welding I	4
WEL 230 Pipe Welding I	4
WEL 231 Pipe Welding II	4
WEL 251 Design, Layout & Fabrication	4
WEL 263 Applied Metal Properties	4
HWE 103 CPR First Aid	1

Suggested Electives ..... 5 Credits

Any course with prefix: ABM, ACC, AGB, AGE, AGP, AGY, AME, ART (ART 132 only), ASC, ASE, BUS, CAD, DPM, EGG, EIC, ELT, IMA, MAN, MAR, MGD, MIL, PHY, SPA, WEL & WTG.

Total Credits Required ..... 60 Credits

WELDING TECHNOLOGY

SIX CERTIFICATES

Oxy-fuel Certificate (7 credits)

WEL 100 Safety for Welders	1
WEL 106 Blueprint Read-Welders/Fitters	4
WEL 113 Oxyfuel and Plasma Cutting	2

SMAW Certificate (9 credits)

WEL 100 Safety for Welders	1
WEL 106 Blueprint Read-Welders/Fitters	4
WEL 110 Advanced Shielded Metal Arc I	4

GMAW Certificate (9 credits)

WEL 100 Safety for Welders	1
WEL 106 Blueprint Read-Welders/Fitters	4
WEL 201 Gas Metal Arc Welding I	4

FCAW Certificate (9 credits)

WEL 100 Safety for Welders	1
WEL 106 Blueprint Read-Welders/Fitters	4
WEL 203 Flux Cored Arc Welding I	4

GTAW Certificate (9 credits)

WEL 100 Safety for Welders	1
WEL 106 Blueprint Read-Welders/Fitters	4
WEL 124 Intro-Gas Tungsten Arc Welding	4

Welding Fabricator Certificate (21 credits)

WEL 100 Safety for Welders	1
WEL 106 Blueprint Read-Welders/Fitters	4
WEL 230 Pipe Welding I	4
WEL 231 Pipe Welding II	4
WEL 251 Design, Layout, & Fabrication	4
WEL 263 Applied Metal Properties	4

WIND ENERGY TECHNICIAN PROGRAM

ASSOCIATE OF APPLIED SCIENCE DEGREE

The renewable energy field is a fast growing and sustainable industry. Eastern Colorado is host to the fastest growing renewable power generation technology – wind turbines. The Wind Energy Technician program is designed to prepare students for entry level positions in the power generation and related industries. Students will complete their OSHA 10 Hour, Climbing and Rescue, Rigging/Signal Person, and CPR certifications in their first year in the program. Students will become proficient with electrical, hydraulic, and mechanical systems. Students will have the opportunity to build, troubleshoot, and repair combined electrical/mechanical/hydraulic systems that are found in wind turbines, but these same systems are also found in most industrial facilities that have automated equipment such as advanced manufacturing, building controls, and food processing.

There is a strong emphasis on safety throughout the program. The student will learn how to identify hazards in the work environment and take steps to eliminate or reduce the risk that exists. Wind Technicians typically work with heavy motors and gear drives in confined spaces, electrical systems up to 690 VAC, and automated electrical control systems in the heat of the summer or cold of the winter while working at heights approaching 300 feet.

Most technicians are required to work with limited supervision so a strong work ethic and technical competence are highly sought qualities of entry level employees in the wind industry.

Essential Functions:

- Must be able to work outdoors in inclement weather, climb ladders without assistance, and work at heights greater than 80 meters (250 feet).
- While performing the duties of this job the employee is regularly required to stand, use hands, reach with hands and arms, and hear. The employee is frequently required to stoop, kneel, crouch, or crawl. The employee is occasionally required to walk, sit, talk, smell, and lift and/or move up to 50 to 100 pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception, and the ability to adjust focus. The employee must be able to distinguish colors.
- Employee must meet specific weight requirements dictated by required safety equipment and weigh less than 260 to 310 pounds when fully equipped with tools and safety gear.
- Employees must possess a valid driver's license, a clean driving record, and proof of insurance coverage.
- Employees must be able to follow written and spoken work instructions and procedures in English.

Graduates of the Wind Energy Technician program are prepared for employment with wind farm developers, owners, wind turbine manufacturers, warranty service companies, and other specialty support companies. Graduates from the program have also found employment in industries that range from automated bakeries to CO2 manufacturing with jobs that range from Quality Control Technician to Industrial Electrician. The graduates from the Wind Energy Technician program have a diverse set of skills that cross over to many different industries and are able to adapt to the technological advances in their careers.

General Education Requirements .....Minimum 15 Credits

CIS 118 Intro to PC Applications	3
COM 115 Public Speaking OR	
COM 125 Interpersonal Communications	3
ENG 121 English Composition I OR	
ENG 131 Technical Writing	3
MAN 128 Human Relations	3
MAT 107 or higher	3

Program Requirements ..... 49 Credits

EIC 101 Job Training and Safety	3
EIC 220 Industrial Electrical Control	4
ELT 106 Fundamentals of AC/DC	4
ELT 107 Fundamentals of Industrial Electronics	3
ELT 252 Motors and Controls	3

ELT 258 Programmable Logic Controllers 3
HWE 103 First Aid & CPR 1
IMA 100 Intro to Industrial Maintenance 3
IMA 120 Industrial Rotating Equipment..... 3
IMA 150 Industrial Problem Solving 2
IMA 160 Basic Fluid Power 3
MIL 101 Lifting Devices 1
PED 101 Conditioning Lab 1
WTG 100 Intro to Wind Industry 3
WTG 110 Power Distribution & Control Systems 3
WTG 220 WTG Troubleshooting and Repair 4
WTG 230 Wind Turbine Systems 3
WTG 289 Wind Tech Capstone 2

Suggested Electives

BUS 115 Intro to Business 3
ELT 259 Adv. Programmable Logic Control 3
MAT 135 Intro to Statistics 3
WEL 140 Welding Practices and Procedures 1.5
WTG 280 Wind Technician Internship 6
Any Foreign Language 3

Total Credits Required ..... 64 Credits

WIND TECHNICIAN CORE

CERTIFICATE

This certificate is designed to allow a student to take these common courses at any of the community colleges in the state of Colorado and transfer into the Wind Energy Technician program as a sophomore student. The student would be on track to graduate in one year from NJC.

Program Requirements ..... 31 Credits

CIS 118 Intro to PC Applications 3
COM 115 Public Speaking OR 3
COM 125 Interpersonal Communications 3
EIC 101 Job Training and Safety 3
ELT 106 Fundamentals of AC/DC 4
ELT 107 Fundamentals of Industrial Electronics 3
ELT 252 Motors and Controls 3
ENG 121 English Composition I OR 3
ENG 131 Technical Writing 3
MAN 128 Human Relations 3
MAT 107 Career Math 3
WTG 100 Intro to Wind Industry 3

*Open to any student. Need signed Background Release of Liability.

**Must pass EIC 101 with a 90%.