AGRICULTURAL SYSTEMS TECHNOLOGY

Agricultural Systems Technology Degree - A60410

Agricultural Systems Technology is designed to provide individuals with the knowledge and skills needed to repair agricultural equipment.

The course work includes diesel engines, power trains, hydraulics, electrical systems, and fuel systems. Other topics include time management, inventory, and parts control.

Graduates of the curriculum should qualify for entry-level employment opportunities in a dealership as technicians qualified to be contributing members of the work team.

Agricultural Systems Technology Diploma - D60410

Program Sequence

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRN 110</td>
<td>Intro to Transportation Tech</td>
<td>2</td>
</tr>
<tr>
<td>TRN 120</td>
<td>Basic Transportation Electricity</td>
<td>5</td>
</tr>
<tr>
<td>TRN 120A</td>
<td>Basic Transportation Electricity Lab</td>
<td>1</td>
</tr>
<tr>
<td>TRN 140</td>
<td>Transportation Climate Control</td>
<td>2</td>
</tr>
<tr>
<td>TRN 170</td>
<td>PC Skills for Transportation</td>
<td>2</td>
</tr>
<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3</td>
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<tr>
<td>HUM 121</td>
<td>The Nature of America</td>
<td>3</td>
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<tr>
<td>Elective List I</td>
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Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HET 110</td>
<td>Diesel Engines</td>
<td>6</td>
</tr>
<tr>
<td>HET 134</td>
<td>Mechanical Fuel Injection</td>
<td>3</td>
</tr>
<tr>
<td>PME 112</td>
<td>Consumer Products</td>
<td>2</td>
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<tr>
<td>MAT 110</td>
<td>Math Measurement &amp; Lit</td>
<td>3</td>
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Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Elective List III</td>
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Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>HET 114</td>
<td>Power Trains</td>
<td>5</td>
</tr>
<tr>
<td>HYD 134</td>
<td>Hydraulics/Hydrostatic Const</td>
<td>4</td>
</tr>
<tr>
<td>PME 121</td>
<td>Component Controls</td>
<td>2</td>
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<tr>
<td>COM 120</td>
<td>Intro Interpersonal Com</td>
<td>3</td>
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<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
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Fifth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ELN 112</td>
<td>DC/AC Electricity</td>
<td>4</td>
</tr>
<tr>
<td>PME 111</td>
<td>Planters and Sprayers</td>
<td>4</td>
</tr>
<tr>
<td>PME 122</td>
<td>Agricultural Telematics</td>
<td>3</td>
</tr>
<tr>
<td>Elective List I</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Complete Agricultural Systems Technology Diploma (D60410): ELN 112, ENG 110, HET 110, HET 114, HET 134, HYD 134, PME 111, PME 112, PME 121, PSY 118, TRN 110, TRN 120, TRN 120A, TRN 140, TRN 170

Elective List I (Select 6 hours from the following courses):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELN 110</td>
<td>Survey of Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ELN 113</td>
<td>Electronic Fuel Injection</td>
<td>2</td>
</tr>
<tr>
<td>HET 115</td>
<td>Electronic Engines</td>
<td>3</td>
</tr>
<tr>
<td>HET 128</td>
<td>Med/Heavy Duty Tune-up</td>
<td>2</td>
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</table>

PME 211 | Adv Equipment Repair | 4 |

Elective List II (Select 2 hours from the following courses):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYD 110</td>
<td>Hydraulics/Pneumatics I</td>
<td>3</td>
</tr>
<tr>
<td>HYD 112</td>
<td>Hydraulics/Med/Heavy Duty</td>
<td>2</td>
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</table>

Elective List III (Select 2 hours from the following courses):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBL 111</td>
<td>Work-Based Learning I</td>
<td>1</td>
</tr>
<tr>
<td>WBL 112</td>
<td>Work-Based Learning I</td>
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<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>2</td>
</tr>
</tbody>
</table>

Graduation Requirements .................................. 70 Credit Hours

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY

Air Conditioning, Heating, and Refrigeration Technology Degree - A35100

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety.

AAS degree graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems and, should be able to demonstrate an understanding of system selection and balance and advanced systems.

Air Conditioning, Heating, and Refrigeration Technology Diploma - D35100A

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. Diploma graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems.

Air Conditioning, Heating, and Refrigeration Technology Certificate - C35100B

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The certificate program covers air conditioning, furnaces, tools, and instruments. Certificate graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential systems.

Design Certificate - C35100D

The Air Conditioning, Heating, and Refrigeration Technology Design Certificate is designed for individuals interested in the basics of how to design residential and commercial AHR systems. Topics include building codes, principles and concepts of conventional residential heating and cooling system design, principles of designing heating and cooling systems for commercial buildings, and common business and customer relation practices. Certificate graduates should be able to assist in the design of residential and commercial AHR systems, and the mechanical codes that apply toward system installation.
### Building Automation Certificate – C35100E

**Commercial Refrigeration Certificate – C35100F**

#### Program Sequence

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>AHR 111</td>
<td>HVACR Electricity</td>
<td>3</td>
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<tr>
<td></td>
<td>AHR 113C</td>
<td>Comfort Cooling</td>
<td>2</td>
</tr>
<tr>
<td>Second</td>
<td>AHR 110</td>
<td>Introduction to Refrigeration</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>AHR 112</td>
<td>Heating Technology</td>
<td>4</td>
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<td></td>
<td>AHR 113L</td>
<td>Comfort Cooling</td>
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<td>PSY 118</td>
<td>Interpersonal Psychology</td>
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<td>Third</td>
<td>AHR 114</td>
<td>Heat Pump Technology</td>
<td>4</td>
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<td></td>
<td>AHR 125</td>
<td>HVACR Electronics</td>
<td>3</td>
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<td></td>
<td>AHR 133</td>
<td>HVAC Servicing</td>
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<td></td>
<td>ENG 110</td>
<td>Freshman Composition</td>
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</table>

Complete AHR Evening Certificate (C35100B): AHR 111, AHR 112, AHR 113, AHR 125, AHR 133

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Fourth</td>
<td>AHR 115</td>
<td>Refrigeration Systems</td>
<td>2</td>
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<tr>
<td></td>
<td>AHR 213</td>
<td>HVACR Building Code</td>
<td>2</td>
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<tr>
<td></td>
<td>AHR 151</td>
<td>HVAC Duct Systems I</td>
<td>2</td>
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<tr>
<td></td>
<td>AHR 211</td>
<td>Residential System Design</td>
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<tr>
<td></td>
<td>Elective I</td>
<td></td>
<td></td>
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</table>

Complete AHR Diploma (D35100A): AHR 110, AHR 111, AHR 112, AHR 113C, AHR 113L, AHR 114, AHR 115, AHR 125, AHR 133, AHR 151, AHR 213, ENG 110, PSY 118

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Fifth</td>
<td>AHR 180</td>
<td>HVACR Customer Relations</td>
<td>1</td>
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<tr>
<td></td>
<td>AHR 215</td>
<td>Commercial HVAC Controls</td>
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<td></td>
<td>BAT 111</td>
<td>Building Automation Systems</td>
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<tr>
<td></td>
<td>REF 116</td>
<td>Commercial Systems I</td>
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<tr>
<td></td>
<td>COM 120</td>
<td>Interpersonal Communication</td>
<td>3</td>
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</table>

Complete Commercial Refrigeration Certificate (C35100F): AHR 110, AHR 111, AHR 115, REF 116

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tr>
<td>Sixth</td>
<td>AHR 212</td>
<td>Advanced Comfort Systems</td>
<td>4</td>
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<tr>
<td></td>
<td>AHR 225</td>
<td>Commercial System Design</td>
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<tr>
<td></td>
<td>AHR 250</td>
<td>HVAC System Diagnostics</td>
<td>2</td>
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<tr>
<td></td>
<td>AHR 263</td>
<td>Energy Management</td>
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<tr>
<td></td>
<td>HUM 121</td>
<td>The Nature of America</td>
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<tr>
<td></td>
<td>MAT 110</td>
<td>Mathematical Measurement and Lit</td>
<td>3</td>
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</table>

Complete Design Certificate (C35100D): AHR 211, AHR 213, AHR 225, AHR 235, AHR 263

Complete Building Automation Certificate (C35100E): AHR 111, AHR 125, AHR 215, AHR 225, AHR 263, BAT 111

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
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<td>Elective I</td>
<td>(Select 1 hour from the following courses):</td>
<td></td>
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<tr>
<td></td>
<td>AHR 160</td>
<td>Refrigerant Certification</td>
<td>1</td>
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<tr>
<td></td>
<td>AHR 235</td>
<td>Refrigeration Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>WBL 111</td>
<td>Work-Based Learning I</td>
<td>1</td>
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</table>

Graduation Requirements..................................72 Credit Hours

### ARCHITECTURAL TECHNOLOGY

#### Architectural Technology Degree - A40100

The Architectural Technology curriculum provides individuals with knowledge and skills that can lead to employment in the field of architecture or one of the associated professions.

Students receive instruction in construction document preparation, materials and methods, environmental and structural systems, building codes and specifications, and computer applications as well as complete a design project. Optional courses may be provided to suit specific career needs.

Upon completion, graduates have career opportunities within the architectural, engineering, and construction professions as well as positions in industry and government.

#### Architectural CAD Certificate - C40100A

The evening Architectural CAD certificate is designed for students employed full-time in architectural engineering or construction positions that require microcomputer knowledge. Courses include basic hands-on architectural drafting in residential construction and computer courses in different types of computer-aided drafting software from basic to advanced levels.

Opportunities for employment exist as junior technicians within architectural practices and engineering and contracting companies.

Courses in this program can be transferred directly into the Architectural Technology associate degree program.

#### Building Information Modeling (BIM) Certificate – C40100B

#### Architectural and Landscape Illustration Certificate – C40100D

#### Landscape Design Certificate – C40100F

#### Plant Identification Certificate – C40100G

#### Program Sequence

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First</td>
<td>ARC 111</td>
<td>Introduction to Architectural Technology</td>
<td>3</td>
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<tr>
<td></td>
<td>ARC 112</td>
<td>Construction Materials and Methods</td>
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<td></td>
<td>ARC 114</td>
<td>Architectural CAD</td>
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<td></td>
<td>ARC 114A</td>
<td>Architectural CAD Lab</td>
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<td>ARC 250</td>
<td>Survey of Architecture</td>
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<td>Second</td>
<td>ARC 113</td>
<td>Residential Architectural Technology</td>
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<td>ARC 212</td>
<td>Commercial Construction Technology</td>
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<td>ARC 225</td>
<td>Architectural BIM I</td>
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<td>ARC 225A</td>
<td>Architectural BIM I Lab</td>
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<td>ARC 264</td>
<td>Digital Architecture</td>
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<td>MAT 121</td>
<td>Algebra and Trigonometry</td>
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<td>Third</td>
<td>ENG 111</td>
<td>Expository Writing</td>
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<td>HUM 115</td>
<td>Critical Thinking</td>
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<tr>
<td>Fourth</td>
<td>ARC 131</td>
<td>Building Codes</td>
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</table>
APPLIED ENGINEERING & TECHNOLOGIES

ARC 132 Specifications and Contracts ............................... 2
ARC 211 Light Construction Technology .............................. 3
ARC 220 Advanced Architectural CAD ............................... 2
ARC 230 Environmental Systems ...................................... 4
ARC 240 Site Planning ................................................. 3
Complete Architectural CAD Certificate (C40100A): ARC 111, ARC 112, ARC 113, ARC 114, ARC 114A, ARC 220

Fifth Semester
ARC 141 Elementary Structures for Architecture .............. 4
ARC 213 Design Project ............................................... 2
SST 140 Green Building and Design Concepts ................. 3
ENG 114 Professional Research and Reporting ............... 3
Elective List (choose from 1 of 4 tracks) ......................... 5

Elective 1 Track 1: Complete Building Information Modeling Certificate (C40100B): Choose CIV 125, ARC 226, ARC 226A + ARC 212, ARC 225, ARC 225A, ARC 264

Elective 2 Track 2: Complete Architectural Planning Design Certificate (C40100C): Choose LAR 211, LAR 241, LAR 242 + ARC 213, ARC 240, ARC 264

Elective 3 Track 3: Complete Architectural and Landscape Illustration Certificate (C40100D): Choose ARC 231, ARC 235, LAR 235 + ARC 264

Elective 2 Track 4: Complete Landscape Design Certificate (C40100F): Choose HOR 114, HOR 160, LAR 113, ARC 250 + ARC 111, ARC 114, ARC 114A

Elective 2 Track 5: Complete Plant Identification Certificate (C40100G): Choose HOR 160, HOR 161, HOR 162, LAR 231

Sixth Semester
PSY 150 General Psychology ....................................... 3

Elective List I (Select 5 hours from the following courses):
ARC 226 Architectural BIM II ..................................... 2
ARC 226A Architectural BIM II Lab .............................. 1
CIV 125 Civil/Surveying CAD .................................... 3
CIV 230 Construction Estimating ............................... 3
WBL 111 Work-Based Learning I .............................. 1
WBL 112 Work-Based Learning I .............................. 2
WBL 113 Work-Based Learning I .............................. 3

Elective List II (Select 5 hours from the following courses):
HOR 112 Landscape Design I .................................. 3
HOR 114 Landscape Construction ......................... 3
HOR 160 Plant Materials I ..................................... 3
HOR 161 Plant Materials II .................................... 3
HOR 162 Applied Plant Science ................................. 3
LAR 113 Residential Landscape Design ................. 3
LAR 120 Sustainable Development ........................... 3
LAR 211 Commercial Site Design ........................... 3
LAR 230 Principles of Exterior Planting .................. 4
LAR 231 Principles of Interior Planting ................. 3
LAR 241 Adv Site Planning .................................... 3
LAR 242 Planning and Environment ..................... 3
LAR 250 Survey of LAR ......................................... 3
WBL 111 Work-Based Learning I ......................... 1
WBL 112 Work-Based Learning I ......................... 2
WBL 113 Work-Based Learning I ......................... 3

Elective List III (Select 5 hours from the following courses):
ARC 231 Architectural Presentations ......................... 4
ARC 235 Architectural Portfolio ................................ 3
LAR 111 Introduction to Landscape Arch Tech ............ 3
LAR 235 Landscape Techniques ......................... 3
WBL 111 Work-Based Learning I ......................... 1

WBL 112 Work-Based Learning I ............................... 2
WBL 113 Work-Based Learning I ............................... 3
Elective List IV (Select 5 hours from the following courses):
ARC 261 Solar Technology ....................................... 2
LAR 120 Sustainable Development ...................... 3
WBL 111 Work-Based Learning I .............................. 1
WBL 112 Work-Based Learning I .............................. 2
WBL 113 Work-Based Learning I .............................. 3

Graduation Requirements ........................................ 72 Credit Hours

AUTOMOTIVE SYSTEMS TECHNOLOGY

Automotive Systems Technology Degree - A60160
The Automotive Systems Technology curriculum prepares individuals for employment as automotive service technicians. It provides an introduction to automotive careers and increases student awareness of the challenges associated with this fast and ever-changing field.

Classroom and lab experiences integrate technical and academic coursework. Emphasis is placed on theory, servicing and operation of brakes, electrical/electronic systems, engine performance, steering/suspension, automatic transmission/transaxles, engine repair, climate control, and manual drive trains.

Upon completion of this curriculum, students should be prepared to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

First Semester
AUT 116 Engine Repair ............................................. 3
AUT 116A Engine Repair Lab ................................... 1
TRN 110 Intro to Transportation Tech ..................... 2
TRN 120 Basic Transport Electricty .......................... 5
TRN 120A Basic Transport Electricty Lab .................. 1
TRN 170 PC Skills for Transp ................................... 2
MAT 110 Math Measurement & Lit ........................ 3

Second Semester
AUT 123 Powertain Diagn & Serv ............................ 2
AUT 181 Engine Performance 1 ................................ 3
AUT 181A Engine Performance 1 Lab ...................... 1
AUT 211 Automotive Servicing 2 ............................ 2
AUT 231 Man Trans/Axles/Dtrains ......................... 3
ENG 110 Freshman Composition .......................... 3
HUM 121 The Nature of America .......................... 3

Third Semester
TRN 140 Transport Climate Control ....................... 2
TRN 140A Transport Climate Control Lab ............... 2

Fourth Semester
AUT 141 Suspension & Steering Sys ....................... 3
AUT 141A Suspension & Steering Lab ..................... 1
AUT 151 Brake Systems ........................................... 3
AUT 151A Brake Systems Lab ................................. 1
AUT 281 Adv Engine Performance ....................... 3

Fifth Semester
AUT 114 Safety and Emissions ............................. 2
AUT 183 Engine Performance II ............................. 4
AUT 221 Auto Transm/Transaxles ......................... 3
AUT 221A Auto Transm/Transax Lab .................... 1
COM 120 Interpersonal Communication ............... 3

Graduation Requirements .................................... 65 Credit Hours
**BIOPHARMACEUTICAL TECHNOLOGY**

**Biopharmaceutical Technology Degree - A20180**
The Biopharmaceutical Technology curriculum is designed to prepare graduates for employment in pharmaceutical manufacturing and related industries, including chemical quality assurance, microbiological quality assurance, product inspection, documentation review, manufacturing, and product/process validation.

**Biopharmaceutical Regulations Certificate - C20180B**
This is an introduction to regulatory and applied science coursework. This certificate is the first of three "stackable" certificates embedded within the Biopharmaceutical Technology Program.

**Biopharmaceutical Manufacturing and Quality Certificate - C20180C**
The courses in this certificate emphasize manufacturing processes and quality control procedures applicable to the biopharmaceutical industry and is the second of the "stackable" certificates.

**Advanced Biopharmaceutical Practices Certificate - C20180D**
The courses in this certificate provide more detail and very specific applications within the industry. This certificate is the third of the three "stackable" certificates of the Biopharmaceutical Technology Program.

**Pharmaceutical Basics Certificate - C20180E**

**Program Sequence**

<table>
<thead>
<tr>
<th>First Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BPM 110 Bioprocess Practices</td>
<td>5</td>
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<tr>
<td>CHM 131 Introduction to Chemistry</td>
<td>3</td>
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<td>CHM 131A Introduction to Chemistry Lab</td>
<td>1</td>
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<td>PTC 110 Industrial Environment</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111 Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121 Algebra/Trigonometry</td>
<td>3</td>
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Complete Biopharmaceutical Regulations Certificate (C20180B): BPM 110, CHM 131, CHM 131A, PTC 110

<table>
<thead>
<tr>
<th>Second Semester</th>
<th></th>
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<tbody>
<tr>
<td>BIO 110 Principles of Biology</td>
<td>4</td>
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<tr>
<td>CHM 132 Organic and Biochemistry</td>
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<td>ISC 121 Envir Health &amp; Safety</td>
<td>3</td>
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<td>PTC 120 Pharmaceutical Quality Control</td>
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<tr>
<td>ENG 114 Professional Research and Reporting</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
<th></th>
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<tbody>
<tr>
<td>ENV 212 Instrumentation</td>
<td>4</td>
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<tr>
<td>PTC 210 Pharmaceutical Industrial Processes</td>
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<tr>
<td>PTC 222 Pharmaceutical Process Control</td>
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</tr>
<tr>
<td>HUM 110 Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118 Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Complete Biopharmaceutical Manufacturing & Quality Certificate (C20180C): CHM 132, PTC 120, PTC 210, PTC 222

<table>
<thead>
<tr>
<th>Fourth Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PTC 212 Applied Microbiology</td>
<td>4</td>
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<tr>
<td>PTC 214 Parenteral Processes</td>
<td>4</td>
</tr>
<tr>
<td>PTC 226 Validation</td>
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<tr>
<td>PTC 228 Pharmaceutical Issues</td>
<td>1</td>
</tr>
<tr>
<td>Elective List I</td>
<td>3</td>
</tr>
</tbody>
</table>

Complete Advanced Biopharmaceutical Practices Certificate (C20180D): PTC 212, PTC 214, PTC 226, PTC 228

Complete Pharmaceutical Basics Certificate (C20180E): BPM 110, ISC 121, PTC 110, PTC 120, PTC 228

<table>
<thead>
<tr>
<th>Elective List I (Select 3 hours from the following courses):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110 Intro to Computers</td>
<td>3</td>
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<tr>
<td>EGR 115 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>ISC 135 Principles of Industrial Management</td>
<td>4</td>
</tr>
<tr>
<td>ISC 237 Quality Management</td>
<td>3</td>
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<tr>
<td>WBL 111 Work-Based Learning</td>
<td>1</td>
</tr>
</tbody>
</table>

Graduation Requirements: 68 Credit Hours

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**CIVIL ENGINEERING TECHNOLOGY**

**Civil Engineering Technology Degree - A40140**
The Civil Engineering Technology curriculum provides the application of relevant theory of engineering needed by technicians to carry out planning and supervisory tasks in the construction of transportation systems, residential and commercial buildings, bridges, dams, and water and wastewater treatment systems.

Course work includes the communication and computational skills required to support the fields such as materials testing, structures, estimating, project management, hydraulics, environmental technology, and surveying. Additional course work will cover the operation of computers and application software including computer-aided drafting.

Graduates should qualify for technician-level jobs with both public and private engineering, construction, and surveying agencies and are also eligible to continue on at East Carolina University and UNC-Charlotte as a junior.

**Civil Engineering Technology: Office/CAD - C40140A**
The Civil Engineering Technology Certificate allows students to complete the certificate in two to three semesters. Students are then able to work in the civil field. This certificate is designed to address the all-time high demand for technicians, and to train for jobs in these fields with just a small amount of college. This certificate is for students that are not sure which path they would like to follow. The Civil Design certificate will allow you to work as an engineering technician in engineering offices throughout the country. One job function would be to place ideas down on the computer by working directly with an engineer.

**Civil Engineering Technology: Field Technician – C40140B**

**Civil Engineering Technology: Design – C40140C**
Collision Repair and Refinishing Technology

The Collision Repair and Refinishing Technology program prepares individuals to apply technical knowledge and skills to repair, reconstruct and finish automobile bodies, fenders, and external features. Includes instruction in structure analysis, damage repair, non-structural analysis, mechanical and electrical components, plastics and adhesives, painting and refinishing techniques, and damage analysis and estimating.

Fundamentals Certificate – C60130A

Fundamentals II Certificate – C60130B

Program Sequence

**First Semester**
- ACA 115 Success & Study Skills..........................1
- CEG 111 Introduction to GIS and Gnss..................4
- CEG 115 Intro to Tech and Sustainability..............3
- CEG 115A Tech and Sustainability Lab................1
- CEG 151 CAD for Engineering Technology.............3
- MAT 121 Algebra and Trigonometry....................3

**Second Semester**
- CIV 125 Civil/Surveying CAD..........................3
- EGR 251 Statics ...........................................3
- SRV 110 Surveying I......................................4
- COM 120 Intro to Interpersonal Communication.......3
- ENG 111 Expository Writing............................3

**Third Semester**
- SRV 111 Surveying II....................................4
- HUM 110 Technology and Society......................3

**Fourth Semester**
- CEG 211 Hydrology and Erosion Control...............3
- CEG 212 Intro to Environmental Technology...........3
- CIV 111 Soils and Foundations..........................4
- EGR 252 Strength of Materials..........................3
- SRV 260 Field and Office Practices....................2

**Fifth Semester**
- CEG 210 Construction Materials and Methods........3
- CEG 230 Subdivision Planning and Design................3
- CEG 235 Project Mgmt and Estimating..................3
- PSY 118 Interpersonal Psychology....................3
- Elective List I..........................................2

**Sixth Semester**
- Elective List II.........................................2

- Complete Office/CAD Certificate (C40140A): CEG 111, CEG 151, CEG 235, CIV 125.
- Complete Field Technician Certificate (C40140B): CEG 210, CEG 235, CIV 111, EGR 252
- Complete Design Certificate (C40140C): CEG 211, CEG 212, CEG 230, CEG 235, EGR 252

**Elective List I (Select 3 hours from the following courses):**
- GIS 121 Georeferencing & Mapping.....................3
- GIS 246 Principles of Property Mapping................3
- SRV 240 Topo/Site Surveying................................4

**Elective List II (Select 2 hours from the following courses):**
- CST 131 OSHA/Safety Certification........................3
- WBL 112 Work-Based Learning I..........................2

Graduation Requirements.............................70 Credit Hours

**APPLIED ENGINEERING & TECHNOLOGIES**

**COLLISION REPAIR AND REFINISHING TECHNOLOGY**

Collision Repair and Finishing Technology Degree – A60130

**Program Sequence**

**First Semester**
- ACA 115 Success & Study Skills..........................1
- CEG 111 Introduction to GIS and Gnss..................4
- CEG 115 Intro to Tech and Sustainability..............3
- CEG 115A Tech and Sustainability Lab................1
- CEG 151 CAD for Engineering Technology.............3
- MAT 121 Algebra and Trigonometry....................3

**Second Semester**
- CIV 125 Civil/Surveying CAD..........................3
- EGR 251 Statics ...........................................3
- SRV 110 Surveying I......................................4
- COM 120 Intro to Interpersonal Communication.......3
- ENG 111 Expository Writing............................3

**Third Semester**
- SRV 111 Surveying II....................................4
- HUM 110 Technology and Society......................3

**Fourth Semester**
- CEG 211 Hydrology and Erosion Control...............3
- CEG 212 Intro to Environmental Technology...........3
- CIV 111 Soils and Foundations..........................4
- EGR 252 Strength of Materials..........................3
- SRV 260 Field and Office Practices....................2

**Fifth Semester**
- CEG 210 Construction Materials and Methods........3
- CEG 230 Subdivision Planning and Design................3
- CEG 235 Project Mgmt and Estimating..................3
- PSY 118 Interpersonal Psychology....................3
- Elective List I..........................................2

**Sixth Semester**
- Elective List II.........................................2

- Complete Office/CAD Certificate (C40140A): CEG 111, CEG 151, CEG 235, CIV 125.
- Complete Field Technician Certificate (C40140B): CEG 210, CEG 235, CIV 111, EGR 252
- Complete Design Certificate (C40140C): CEG 211, CEG 212, CEG 230, CEG 235, EGR 252

**Elective List I (Select 3 hours from the following courses):**
- GIS 121 Georeferencing & Mapping.....................3
- GIS 246 Principles of Property Mapping................3
- SRV 240 Topo/Site Surveying................................4

**Elective List II (Select 2 hours from the following courses):**
- CST 131 OSHA/Safety Certification........................3
- WBL 112 Work-Based Learning I..........................2

Graduation Requirements.............................70 Credit Hours

**COLLISION REPAIR AND REFINISHING TECHNOLOGY**

Collision Repair and Finishing Technology Program Sequence

**First Semester**
- AUB 111 Structural Damage I............................2
- TRN 110 Intro to Transportation Tech..................2
- TRN 140 Transportation Climate Control..............2
- TRN 140A Transportation Climate Control Lab.........2
- ENG 110 Freshman Composition........................3

**Second Semester**
- AUB 121 Non Structural Damage I.......................3
- AUB 132 Structural Damage II...........................4
- TRN 120 Basic Transportation Electricity.............5
- MAT 110 Math Measurement & Lit........................3

**Third Semester**
- TRN 180 Basic Welding for Transportation............3
- TRN 180A Basic Welding for Transportation Lab.....1
- PSY 118 Interpersonal Psychology....................3

**Fourth Semester**
- AUB 111 Painting and Refinishing I........................4
- AUB 122 Non Structural Damage II.......................4
- AUB 136 Plastics & Adhesives..........................3
- COM 110 Intro to Communication........................3

- Complete Fundamentals Certificate (C60130A): AUB 111, AUB 131, TRN 110, TRN 120, TRN 140

**Fifth Semester**
- AUB 112 Painting and Refinishing I........................4
- AUB 114 Special Finishes.................................2
- AUB 162 Autobody Estimating............................2
- HUM 110 Technology & Society..........................3

- Complete Fundamentals II Certificate (C60130B): AUB 111, AUB 112, AUB 121, AUB 131

**Sixth Semester**
- AUB 150 Automotive Detailing................................2
- ACA 220 Professional Transitions........................1
- Elective List I..........................................2

- Elective List I (Select 2 hours from the following courses):
- TRN 130 Introduction to Sustainable Transport.........3
- TRN 170 PC Skills for Transportation....................2
- WBL 111 Work-Based Learning I..........................1
- WBL 112 Work-Based Learning I..........................2
- WBL 121 Work-Based Learning II........................1
- WLD 131 GTAW (TIG) Plate.............................4

Graduation Requirements.............................65 Credit Hours
CONSTRUCTION EQUIPMENT SYSTEMS TECHNOLOGY

Construction Equipment Systems Technology Degree - A60450

Construction Equipment Systems curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair construction equipment systems. Construction equipment includes dozers, scrapers, loaders, and forklifts.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines and electrical and hydraulics systems. The concentration courses will include transmissions, brakes, undercarriage, and equipment repair. Other related courses will be required.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses that repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

Construction Equipment Systems Technology Diploma - D60450

Hydraulics, Engines, and Transmissions Certificate- C60450BB

This certificate is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair hydraulics, engines, and transmissions in construction equipment.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines and hydraulics systems. The concentration courses will also include transmissions.

The curriculum should qualify for entry-level employment opportunities at businesses, which repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

Fuel Injection, Electrics, & Electronics Certificate – C60450BC

This certificate curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair fuel injection, electrical, and electronic systems in construction equipment. Construction equipment includes dozers, scrapers, loaders, and forklifts.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for electrical and electronic systems. The concentration courses will also include fuel injection systems.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses, which repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

Program Sequence

First Semester
TRN 110 Intro to Transportation Tech ........................................ 2

Second Semester
HET 110 Diesel Engines ......................................................... 6
PME 118 Undercarriage Components ........................................ 2
PME 221 Construction Equipment Servicing ............................. 2
MAT 110 Math Measurement & Lit ........................................... 3
Elective List I ........................................................................ 2

Third Semester
Elective List III ....................................................................... 2

Fourth Semester
HET 114 Power Trains ............................................................ 5
HYD 134 Hydraulic/Hydrostatic Construction ......................... 4
PME 117 Equipment Braking Systems ...................................... 3
COM 120 Interpersonal Communication .................................. 3
PSY 118 Interpersonal Psychology ........................................... 3

Complete Hydraulics, Engines, and Transmission Certificate
(C60450BB): Choose 2 hours from Elective List 2 + HET 110, HET 114

Fifth Semester
HET 125 Preventative Maintenance .......................................... 2
HET 134 Mechanical Fuel Injection ................................. 3
PME 211 Advanced Equipment Repair ................................... 4
HUM 121 The Nature of America ............................................ 3
Elective List I ........................................................................ 4

Complete Fuel Injection, Electrical, and Electronics Certificate
(C60450BC): Choose 4 hours from Elective List 1 + HET 134, TRN 120

Complete Construction Equipment Systems Technology Diploma
(D60450): Choose 4 hours from Elective List 1 + ENG 110, HET 110, HET 114, HET 134, HYD 134, PME 117, PME 118, PME 221, PSY 118, TRN 110, TRN 120, TRN 120A, TRN 140, TRN 170

Elective List I (Select 6 hours from the following courses):
ELN 110 Survey of Electronics .............................................. 3
ELN 112 Diesel Electronics System ........................................ 4
ELN 113 Electronic Fuel Injection ................................. 2
HET 115 Electronic Engines .................................................. 3
HET 128 Medium/Heavy Duty Tune-up .............................. 2
HET 192 Selected Topics ....................................................... 2

Elective List II (Select 2 hours from the following courses):
HYD 110 Hydraulics/Pneumatics I .......................................... 3
HYD 112 Hydraulics/Medium/Heavy Duty ........................... 2

Elective List III (Select 2 hours from the following courses):
WBL 111 Work-Based Learning I .......................................... 1
WBL 112 Work-Based Learning I .......................................... 2
WLD 112 Basic Welding Processes .......................................... 2

Graduation Requirements .................................................... 68 Credit Hours
CONSTRUCTION MANAGEMENT TECHNOLOGY

Construction Management Technology Degree - A35190
The Construction Management Technology curriculum is designed to provide training for persons interested in project management and other related positions in the construction industry.

Coursework focuses on such topics as construction materials, methods and techniques of modern construction, building codes, contractor licensing law, contractor business law, OSHA and safety on the construction site, project management, project scheduling, project costs and productivity, residential and commercial estimating, residential and commercial blueprint reading, and human relations issues in the construction industry.

Graduates should qualify for entry-level positions as project manager assistants, site superintendents, construction foremen, building inspectors, estimators, and other construction management-related jobs.

Construction Management Technology: Basic Certificate – C35190C
The Construction Management Technology Basic Certificate is designed for individuals already in the construction industry who want to study the basic principles of construction management. Topics include safety/OSHA regulations and compliance, residential and commercial blueprint reading, project planning and scheduling, human relations, issues, and professional construction supervision.

Individuals who complete this certificate will have taken an essential step in the process of qualifying as a construction project manager, superintendent, foreman, or estimator.

Construction Management Technology: Basic Construction Estimating – C35190D

Construction Management Technology: Construction Safety Management – C35190E

Program Sequence
First Semester
BPR 130 Blueprint Reading/Const ........................................ 3
CMT 112AB Construction Management I, Pt 1 ....................... 3
CMT 210 Construction Management Fund ............................. 3
CMT 212 Total Safety Performance ..................................... 3
MAT 121 Algebra and Trigonometry ................................... 3

Second Semester
BPR 230 Commercial Blueprints ....................................... 2
CMT 112BB Construction Management I, Pt 2 ....................... 3
CMT 218 Human Relations Issues ..................................... 3
CST 131 OSHA/Safety/Certification .................................. 3
ENG 111 Expository Writing ............................................ 3

Complete Safety Management Certificate (C35190E): BPR 130, BPR 230, CMT 210, CMT 212, CMT 218, CST 131

Third Semester
CMT 120 Codes and Inspections ...................................... 3
SST 140 Green Building and Design Concepts .................... 3
COM 120 Intro Interpersonal Com .................................... 3

Fourth Semester
CMT 193A Selected Topics ............................................. 3
CMT 214 Planning and Scheduling .................................... 3
CST 150 Building Science .............................................. 3
CST 241 Planning/Estimating I ....................................... 3
HUM 110 Technology and Society ................................ 3

Complete Basic Certificate (C35190C): BPR 130, BPR 230, CMT 210, CMT 212, CMT 214, CMT 218

Fifth Semester
ACC 120 Prin of Financial Acct ........................................ 4
BUS 139 Entrepreneurship I .......................................... 3
CMT 226 Applications Project* ....................................... 3
CST 242 Planning/Estimating II ..................................... 4


Graduation Requirements ............................................. 70 Credits Hours

DIESEL AND HEAVY EQUIPMENT TECHNOLOGY

Diesel and Heavy Equipment Technology Degree - A60460
The Diesel and Heavy Equipment Technology curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair medium- and heavy-duty vehicles.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines, electrical, and hydraulic systems. Other courses cover transmissions, brakes, and steering/suspension. Additional related courses will be required.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses that repair medium- and heavy-duty vehicles. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

Diesel and Heavy Equipment Technology Diploma - D60460

Hydraulics, Engines, and Transmission Forklift Certificate - C60460BB

Fuel Injection, Electrical, and Electronics Forklift Certificate - C60460BC

Program Sequence
First Semester
TRN 110 Intro to Transportation Tech ............................... 2
TRN 120 Basic Transportation Electricity ........................... 5
TRN 120A Basic Transportation Electricity Lab .................... 1
TRN 140 Transportation Climate Control ............................ 2
TRN 170 PC Skills for Transportation ............................... 2
ENG 110 Freshman Composition .................................... 3
Elective List I .............................................................. 2
Second Semester
HET 110 Diesel Engines ..............................................6
HET 233 Suspension and Steering ..................................4
MAT 110 Math Measurement & Lit ..............................3
Elective List II ...........................................................2

Third Semester
Elective List III ...........................................................2

Fourth Semester
HET 114 Power Trains ................................................5
HYD 134 Hyd/Hydrostatic Const ..................................4
HET 231 Medium/Heavy Duty Brake System ..............2
COM 120 Interpersonal Communication ....................3
PSY 118 Interpersonal Psychology .............................3

Elective List I (Select 6 hours from the following courses):
ELN 110 Survey of Electronics ..................................3
ELN 112 Diesel Electronics System ..........................4
ELN 113 Electronic Fuel Injection ............................2
HET 115 Electronic Engines .....................................3
HET 128 Medium/Heavy Duty Tune-up ....................2
HET 192 Selected Topics ...........................................2

Elective List II (Select 2 hours from the following courses):
HYD 110 Hydraulics/Pneumatics I ............................3
HYD 112 Hydraulics/Medium/Heavy Duty ................2

Elective List III (Select 2 hours from the following courses):
WBL 111 Work-Based Learning I ..............................1
WBL 112 Work-Based Learning I ..............................2
WLD 112 Basic Welding Processes ............................2

Graduation Requirements ...........................................68 Credit Hours

Training, most of which is hands-on, will include such topics as photovoltaic AC/DC theory, basic wiring practices, programmable logic controllers, industrial motor controls, the National Electrical Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical systems.

Electrical Systems Technology Diploma - D35130

The Electrical Systems Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical systems found in residential, commercial, and industrial facilities.

Training, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, programmable logic controllers, industrial motor controls, the National Electrical Code, and other subjects as local needs require.

Diploma graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical/electronic systems.

Residential Wiring Certificate – C35130A

Commercial Wiring Certificate – C35130B

Industrial Wiring Certificate – C35130C

Wiring Methods Certificate – C35130D

Program Sequence

First Semester
ELC 112 DC/AC Electricity .........................................5
ELC 113 Residential Wiring .......................................4
ELC 118 National Electrical Code ............................2
ELC 127 Software for Technicians ............................2

Second Semester
ELC 114 Commercial Wiring ....................................4
ELC 117 Motors and Controls ....................................4
ELC 119 NEC Calculations .......................................2

Third Semester
ELC 115 Industrial Wiring .........................................4
ELC 128 Introduction to PLC ....................................3
Elective List I or II ..................................................3

Fourth Semester
BPR 130 Print Reading-Construction ........................3
ISC 121 Envir Health and Safety ...............................3
MAT 110 Math Measurement and Literacy ...............3
Elective List I or II ..................................................3

Electrical Systems Technology Degree - A35130

The Electrical Systems Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical systems found in residential, commercial, and industrial facilities.
Electronics Engineering Technology

Electronics Engineering Technology Degree - A40200
The Electronics Engineering Technology curriculum prepares individuals to become technicians who design, build, install, test, troubleshoot, repair, and modify developmental and production electronic components, equipment, and systems such as industrial/ computer controls, manufacturing systems, communication systems, and power electronic systems.

A broad-based core of courses, including basic electricity, solid-state fundamentals, digital concepts, and microprocessors, ensures the student will develop the skills necessary to perform entry-level tasks. Emphasis is placed on developing the student’s ability to analyze and troubleshoot electronic systems.

Graduates should qualify for employment as engineering assistants or electronic technicians with job titles such as electronics engineering technician, field service technician, maintenance technician, electronic tester, electronic systems integrator, bench technician, and production control technician.

Basic Electronics Certificate - C40200A
The Basic Electronics certificate provides the student with a program of study necessary for developing basic electronic skills. The student will gain an understanding of AC/DC basic circuits, digital circuits, and basic electronic devices. Courses are an adjunct of the Electronics Engineering Technology program and may be transferred directly toward completion of the A.A.S. degree in Electronics Engineering Technology.

PLC Programming Certificate - C40200B
The PLC Programming Certificate provides the student with the basic technical skills and knowledge necessary to work with the Programmable Logic Controllers typically found in an industrial environment. The program investigates the operation and programming of PLCs and the interfacing of PLCs to electronic devices and sensors routinely found in industrial controls. Students entering the program are expected to have a basic knowledge of AC and DC electrical circuits.

SCADA Systems Certificate - C40200E

Instrumentation Certificate - C40200F

Embedded Systems Certificate – C40200G
Program Sequence

First Semester
- EGR 131 Intro to Electronics Technology .......................... 2
- ELC 121 Circuit Analysis I ............................................ 4
- ELN 133 Digital Electronics ........................................... 4
- ENG 111 Expository Writing .......................................... 3
- MAT 121 Algebra and Trigonometry* .............................. 3

Second Semester
- ELN 131 Analog Electronics I ........................................ 4
- ELN 260 Prog Logic Controllers .................................... 4
- ELN 275 Troubleshooting ............................................. 2
- HUM 110 Technology and Society ................................. 3
- PSY 118 Interpersonal Psychology ................................. 3

Complete Basic Electronics Certificate (C40200A): EGR 131, ELC 131, ELC 131, ELN 133, ELN 275

Third Semester
- ELN 132 Analog Electronics II ...................................... 4
- ELN 231 Industrial Controls .......................................... 3

Fourth Semester
- CSC 133 C Programming ............................................ 3
- ELN 232 Introduction to Microprocessors ......................... 4
- ELN 234 Communication Systems ................................. 4
- ELN 235 Data Communications Systems ....................... 4
- ENG 114 Professional Research and Reporting ................. 3
- Elective List I ............................................................. 3

Complete PLC Programming Certificate (C40200B): Choose ATR 214, ATR 215 + ELN 231, ELN 260

Complete SCADA Systems Certificate (C40200E): Choose ATR 214, PCI 170, PCI 172 + ELN 260

Complete Instrumentation Certificate (C40200F): Choose ATR 215, ELC 250, PCI 172 + ELN 260

Complete Embedded Systems Certificate (C40200G): CSC 133, ELN 133, ELN 152, ELN 233

Elective List I (Select 3 hours from the following courses):
- ATR 214 Advanced PLCs ............................................. 4
- ATR 215 Sensors and Transducers ................................ 4
- ELN 250 Critical Power Systems .................................. 4
- PCI 170 DAQ and Control ........................................... 4
Facility Maintenance Technology – A50190
The Facility Maintenance Technology curriculum prepares individuals to repair and maintain electrical and mechanical systems and physical structures of commercial and industrial institutions. Emphasis is on multi-disciplined systems maintenance, troubleshooting, and problem resolution. Course work includes carpentry, interior and exterior finishes, plumbing, electrical, masonry, air conditioning, heating, welding, machining, blueprint reading, building codes, and OSHA regulations, as well as computer applications.

Graduates should qualify for positions as general building mechanics or maintenance technician.

Facility Maintenance Technology: Electrical Systems Certificate – C50190A
Facility Maintenance Technology: HVACR Certificate – C50190B
Facility Maintenance Technology: Basic Plumbing Certificate – C50190C

Basic Facilities Technology I Certificate – C50190D
Basic Facilities Technology II Certificate – C50190E

Program Sequence
First Semester
AHR 113 Comfort Cooling .................................................. 4
ELC 113 Residential Wiring .................................................. 4
PLU 115 Basic Plumbing ...................................................... 4
PLU 140 Intro to Plumbing Codes ............................................. 2
WLD 112 Basic Welding Processes .......................................... 2

Second Semester
AHR 111 HVACR Electricity ................................................ 3
AHR 112 Heating Technology ................................................. 4
ELC 114 Commercial Wiring ................................................. 4
ELC 127 Software for Technicians ......................................... 2

Complete Facility Maintenance Technology: HVACR Certificate (C50190B): AHR 111, AHR 112, AHR 113, WLD 112
Complete Basic Facilities Technology I Certificate (C50190D): AHR 111, AHR 112, AHR 113, ELC 113
Complete Basic Facilities Technology II Certificate (C50190E): ELC 114, ELC 127, PLU 115, PLU 140, WLD 112

Third Semester
ENG 110 Freshman Composition ........................................... 3

Facility Maintenance Technology: Electrical Systems Certificate (C50190A): Choose ELC 112 + ELC 113, ELC 114, ELC 127, ISC 121

Complete Facility Maintenance Technology: Basic Plumbing Certificate (C50190C): Choose PLU 211 + ELC 127, PLU 115, PLU 140, WLD 112

GEOMATICS TECHNOLOGY
Geomatics Technology Degree - A40420
The Geomatics Technology curriculum provides training for technicians in the many areas of surveying. Surveyors are involved in land surveying, route surveying, construction surveying, photogrammetry, mapping, global positioning systems, geographical information systems, and other areas of property description and measurements.

Course work includes the communication and computational skills required for boundary, construction, route, and control surveying, photogrammetry, topography, drainage, surveying law, and subdivision design, with emphasis upon applications of electronic data collection and related software including CAD.

Graduates should qualify for jobs as survey party chief, instrument person, surveying technician, highway surveyor, mapper, GPS technician, and CAD operator. Graduates will be prepared to pursue the requirements necessary to become a Registered Land Surveyor in North Carolina.

Geomatics Technology: CAD Certificate – C40420A
Geomatics Technology: Field Technician Certificate – C40420B
HEAVY EQUIPMENT OPERATION, MANAGEMENT, AND SERVICE

Heavy Equipment Operation, Management, and Service: Repair and Welding Degree – A35340A

Program Sequence
First Semester
HEO 111 Heavy Equipment Operations I .................... 12
HEO 114 Erosion Control and Regulations ................... 2
ISC 121 Environmental Health and Safety ................... 3
PSY 118 Interpersonal Psychology ......................... 2
Elective List I ............................................. 2
Completes Basic Heavy Equipment Operator Certificate (C35340A): Choose 2 credit hours from Elective List I + HEO 111, ISC 121

Complete Basic Evening Operator Certificate (C35340EA): HEO 111

Second Semester
HEO 112 Heavy Equipment Operations II ................... 12
HEO 113 Grades and Drawings ................................ 3
HET 125 Preventive Maintenance ............................ 2
ENG 110 Freshman Composition ................................ 3
Completes Advanced Heavy Equipment Operator Certificate (C35340B): HEO 112, HEO 112, HET 125
Completes Advanced Evening Operator Certificate (C35340EB): HEO 112

Third Semester
Elective List II ............................................. 2
Completes Heavy Equipment Operation, Management, and Service Diploma (D35340): Choose 2 credits from Elective List I and 2 credits from Elective List II + ENG 110, HEO 111, HEO 112, HEO 113, HEO 114, HET 125, ISC 121, PSY 118

Fourth Semester
HYD 134 Hydraulic/Hydrostatic Construction ................ 4
TRN 120 Basic Transportation Electricity .................... 5
TRN 170 PC Skills for Transportation ......................... 2
WLD 110 Cutting Processes .................................. 2
HUM 121 The Nature of America ................................ 3

Fifth Semester
HET 134 Mechanical Fuel Injection ......................... 3
PME 221 Construction Equipment Servicing ................. 2
WLD 112 Basic Welding Processes .......................... 2
COM 120 Intro to Personal Communication .................. 3
MAT 110 Math Measurement and Lit ......................... 3
Elective List I (Select 2 hours from the following courses):
HEO 150 MSHA-Equip Tech and Operator .................. 2
ISC 115 Construction Safety .................................. 3

Elective List II (Select 2 hours from the following courses):
HEO 116 Soil Excavation & Groundwork .................... 2
TRN 140 Trans Climate Control ................................ 2
WBL 111 Work-based Learning I ............................. 1
WBL 112 Work-based Learning II ............................ 2
WBL 121 Work-based Learning II ............................ 2

Graduation Requirements ..................................... 73 Credit Hours
Heavy Equipment Operation, Management, and Service: Project Management Degree – A35340B

Program Sequence

First Semester
HEO 111 Heavy Equipment Operations I ........................................... 12
HEO 114 Erosion Control and Regulations ...................................... 2
ISC 121 Environmental Health and Safety ................................... 3
PSY 118 Interpersonal Psychology .............................................. 3
Elective List I ............................................................................ 2

Completes Basic Heavy Equipment Operator Certificate (C35340A):
Choose 2 credit hours from Elective List I + HEO 111, ISC 121

Complete Basic Evening Operator Certificate (C35340EA): HEO 111

Second Semester
HEO 112 Heavy Equipment Operations II ................................... 12
HET 125 Preventive Maintenance ................................................. 2
MAT 121 Algebra/Trigonometry I ................................................. 3
Elective List II ............................................................................ 3

Completes Advanced Evening Operator Certificate (C35340EB): HEO 112

Third Semester
Elective List III .......................................................................... 2

Fourth Semester
HEO 113 Grades and Drawings ..................................................... 3
ISC 222 Project Planning and Control ........................................... 2
SRV 110 Surveying I ................................................................. 4
TRN 170 PC Skills for Transportation ........................................ 2
COM 120 Intro to Personal Communication ................................ 3

Completes Advanced Heavy Equipment Operator Certificate (C35340B): HEO 112, HEO 112, HET 125

Fifth Semester
BUS 137 Principles of Management ............................................. 3
CEG 235 Project Management/Estimating .................................. 3
ENG 110 Freshman Composition ................................................ 3
HUM 121 The Nature of America ............................................... 3
Elective List IV (Select 2 hours from the following courses):
CEG 210 Construction Mtls & Methods ...................................... 3
HEO 116 Soil Excavation & Groundwork .................................. 2

Graduation Requirements ......................................................... 72 Credit Hours

Heavy Equipment Operation, Management, and Service: Entrepreneurship/Business Degree – A35340C

Program Sequence

First Semester
HEO 111 Heavy Equipment Operations I ...................................... 12
HEO 114 Erosion Control and Regulations .................................. 2
ISC 121 Environmental Health and Safety ................................ 3
PSY 118 Interpersonal Psychology ............................................ 3
Elective List I ............................................................................ 2

Completes Basic Heavy Equipment Operator Certificate (C35340A):
Choose 2 credit hours from Elective List I + HEO 111, ISC 121

Complete Basic Evening Operator Certificate (C35340EA): HEO 111

Second Semester
HEO 112 Heavy Equipment Operations II ................................... 12
HEO 113 Grades and Drawings ..................................................... 3
HET 125 Preventive Maintenance ................................................. 2
ENG 110 Freshman Composition ................................................ 3
MAT 110 Math Measurement and Lit ........................................... 3

Completes Advanced Heavy Equipment Operator Certificate (C35340B): HEO 112, HEO 112, HET 125

Third Semester
Elective List II .......................................................................... 2

Fourth Semester
BUS 110 Introduction to Business ............................................... 3
BUS 139 Entrepreneurship I ....................................................... 3
ISC 222 Project Planning and Control ........................................ 2
TRN 170 PC Skills for Transportation ........................................ 2
Elective List III ................................................................. 3

Fifth Semester
BUS 137 Principles of Management ............................................. 3
CEG 235 Project Management/Estimating .................................. 3
COM 120 Intro to Personal Communication ................................ 3
HUM 121 The Nature of America ............................................... 3

Elective List I (Select 2 hours from the following courses):
HEO 150 MSHA-Equip Tech and Operator ................................ 2
ISC 115 Construction Safety ..................................................... 2

Elective List II (Select 2 hours from the following courses):
CEG 115 Intro to Tech and Sustainability .................................. 3
HEO 116 Soil Excavation & Groundwork .................................. 2
TRN 140 Trans Climate Control ................................................ 2
WBL 111 Work-based Learning I .............................................. 1
WBL 112 Work-based Learning I .............................................. 2
WBL 121 Work-based Learning II .............................................. 1

Elective List III (Select 2 hours from the following courses):
CMT 212 Total Quality Management Fund................................. 3
CMT 212 Total Quality Management Fund................................. 3
TRN 140 Trans Climate Control ................................................ 2
WBL 111 Work-based Learning I .............................................. 1
WBL 112 Work-based Learning I .............................................. 2
WBL 121 Work-based Learning II .............................................. 1
APPLIED ENGINEERING & TECHNOLOGIES

WBL 121 Work-based Learning II..............................................1

Elective List III (Select 3 hours from the following courses):
CMT 210 Construction Management Fund............................3
CMT 212 Total Safety Performance......................................3
EGR 115 Intro to Technology...............................................3

Graduation Requirements ..............................................72 Credit Hours

Heavy Equipment Operation, Management, and Service Diploma – D35340

Program Sequence

First Semester
HEO 111 Heavy Equipment Operations I..........................12
HEO 114 Erosion Control and Regulations........................2
ISC 121 Environmental Health and Safety.........................3
PSY 118 Interpersonal Psychology....................................3
Elective List I .................................................................2

Second Semester
HEO 112 Heavy Equipment Operations II........................12
HEO 113 Grades and Drawings.........................................3
HET 125 Preventive Maintenance....................................2
ENG 110 Freshman Composition....................................3

Third Semester
Elective List II ....................................................................2

Elective List I (Select 2 hours from the following courses):
HEO 150 MSHA-Equip Tech and Operator.........................2
ISC 115 Construction Safety.............................................2

Elective List II (Select 2 hours from the following courses):
HEO 116 Soil Excavation & Groundwork........................2
MAT 110 Math Measurement and Lit..............................3
WBL 111 Work-based Learning I.....................................1
WBL 112 Work-based Learning II....................................2
WBL 121 Work-based Learning II....................................1

Graduation Requirements ..............................................44 Credit Hours

Basic Heavy Equipment Operator Certificate – C35340A

Program Sequence

First Semester
HEO 111 Heavy Equipment Operations I..........................12
ISC 121 Environmental Health and Safety.........................3
Elective List I .................................................................2

Elective List I (Select 2 hours from the following courses):
HEO 150 MSHA-Equip Tech and Operator.........................2
ISC 115 Construction Safety.............................................2

Graduation Requirements ..............................................17 Credit Hours

Advanced Heavy Equipment Operator Certificate – C35340B

Program Sequence

First Semester
HEO 112 Heavy Equipment Operations II........................12
HEO 113 Grades and Drawings.........................................3
HET 125 Preventive Maintenance....................................2

Graduation Requirements ..............................................17 Credit Hours

Basic Evening Operator Certificate – C35340EA

Program Sequence

First Semester
HEO 111 Heavy Equipment Operations I..........................12

Graduation Requirements ..............................................12 Credit Hours

Advanced Evening Operator Certificate – C35340EB

Program Sequence

First Semester
HEO 112 Heavy Equipment Operations II........................12

Graduation Requirements ..............................................12 Credit Hours

INTERIOR DESIGN

Interior Design Degree - A30220
The Interior Design curriculum is designed to prepare students for a variety of job opportunities in the field of both residential and non-residential interior design. The focus of the studies is technical knowledge, professional practices, and aesthetic principles.

Students receive instruction in basic design, graphic presentation, construction document preparation, materials and methods, environmental and structural systems, building codes and specifications, computer-aided design, history of interiors and furnishings, color theory, products, business practices, and general education courses.

Upon completion, graduates have career opportunities in residential or commercial interior design, architecture, set design, showroom design, furniture/textiles/accessories sales, and any business dealing with interiors.

Residential Interior Design Certificate – C30200A

Décor Focus Interior Design Certificate – C30200B

Commercial Interior Design Certificate – C30200C
Mechanical Engineering Technology

Mechanical Engineering Technology Degree - A40320
The Mechanical Engineering Technology curriculum provides a board and diverse educational experience. Course work includes computer-aided drafting and design, applied mechanics, materials engineering, quality control, manufacturing methods and processes, computer usage, mathematics, physics and oral and written communications. The courses will stress critical thinking, planning and problem solving.

The diversity of Mechanical Engineering Technology degree enables students to pursue exciting careers in following fields:
- Engineering/Architectural
- Mechanical Design
- Manufacturing
- Quality
- Service

If elected, students can pursue a 4 year Engineering Technology degree after graduation.

Mechanical Design Certificate - C40320B
Study of design elements for CAD users.

Thermal Mechanics Certificate - C40320C
The Thermal Mechanics Certificate provides a refresher or a concentration in thermal sciences.

Materials Engineering Certificate - C40320D
The Materials Engineering Certificate will provide students with an understanding of engineering materials and processes.

Additive Manufacturing Certificate - C40320G
The Additive Manufacturing Certificate will help students understand modeling and manufacturing processes used in additive manufacturing such as 3D printing.

Mechanical Drafting Certificate – C40320H

Mechatronics Certificate – C40320I

Program Sequence

First Semester
- ARC 111 Introduction to Architectural Technology: 3
- ARC 114 Architectural CAD: 2
- ARC 114A Architectural CAD Lab: 1
- DES 125 Graphic Presentation I: 2
- DES 135 Principles & Elements of Design: 4

Second Semester
- ARC 264 Digital Architecture: 2
- DES 193A Selected Topics: 3
- DES 220 Principles of Interior Design: 3
- DES 235 Products: 3
- DES 255 History of Interior & Furnishings I: 3
- Elective List I: 3

Third Semester
- ENG 111 Expository Writing: 3
- HUM 110 Technology and Society: 3

Fourth Semester
- ARC 225 Architectural BIM I: 2
- ARC 225A Architectural BIM I Lab: 1
- DES 230 Residential Design I: 3
- DES 240 Commercial and Contract Design: 3
- DES 256 History of Int Design II: 3
- DES 280 Codes and Standards/Int Design: 3

Complete Residential Interior Design Certificate (C30200A): ARC 111, ARC 114, ARC 114A, DES 112, DES 125, DES 220, DES 230

Fifth Semester
- DES 210 Business Practices for Interior Design: 2
- DES 265 Lighting and Interior Design: 2
- DES 285 Capstone: 4
- ENG 114 Professional Research and Reporting: 3
- PSY 150 General Psychology: 3

Complete Décor Focus Interior Design Certificate (C30200B): DES 135, DES 225, DES 235, DES 255, DES 256, DES 265

Complete Commercial Interior Design Certificate (C30220C): DES 210, DES 220, DES 240, DES 265, DES 280, DES 285

Sixth Semester
- MAT 110 Math Measurement and Literacy: 3
- Elective List II: 2

Elective List I (Select 3 hours from the following courses):
- ARC 220 Advanced Architectural CAD: 2
- DES 225 Textiles and Fabrics: 3

Elective List II (Select 2 hours from the following courses):
- BUS 260 Business Communication: 1
- WBL 111 Work-Based Learning I: 1
- WBL 121 Work-Based Learning II: 1

Completion Requirements: 72 Credit Hours

Second Semester
- DFT 151 CAD I: 3
- EGR 115 Introduction to Technology: 3
- MEC 161 Manufacturing Processes I: 3
- ENG 114 Professional Research and Reporting: 3
- MAT 121 Algebra/Trigonometry I: 3

Third Semester
- TDP 110 Intro to 3D Printing: 3
- PSY 118 Interpersonal Psychology: 3
APPLIED ENGINEERING & TECHNOLOGIES

Fourth Semester
DFT 154 Intro to Solid Modeling ........................................... 3
EGR 251 Statics .................................................................... 3
MEC 180 Manufacturing Materials ........................................ 3
MEC 265 Fluid Mechanics .................................................. 3
Elective List I ................................................................. 3

Complete Mechanical Design Certificate (C40320B): DFT 151, DFT 154, MEC 130, MEC 180

Complete Materials Engineering Certificate (C40320D): DFT 151, MEC 130, MEC 161, MEC 180

Complete Additive Manufacturing Certificate (C40320G): DFT 151, DFT 154, MEC 161, MEC 180, TDP 110

Complete Mechanical Drafting Certificate (C40320H): DFT 151, DFT 152, DFT 154, TDP 110

Complete Mechatronics Certificate (C40320I): ELN 260 + MEC 130, MEC 161, MEC 265

Fifth Semester
EGR 252 Strength of Materials .............................................. 3
EGR 285 Design Project .................................................... 2
ISC 121 Env Health and Safety ......................................... 3
MEC 267 Thermal Systems ................................................. 3
HUM 110 Technology and Society ..................................... 3

Complete Thermal Mechanics Certificate (C40320C): DFT 154, MEC 180, MEC 265, MEC 267

Elective List I ............ (Select 3 hours from the following courses)
ARC 225 Architectural BIM ............................................... 2
ARC 225A Architectural BIM I Lab .................................... 1
CEG 111 Introduction to GIS and Gns.................................... 4
ELC 128 Introduction to PLC ........................................ 3
WBL 111 Work-Based Learning I ..................................... 1
WBL 112 Work-Based Learning I ...................................... 2

Graduation Requirements ................................................... 66 Credit Hours

MISSION CRITICAL OPERATIONS

Mission Critical Operations Degree – A40430
The Mission Critical Operations curriculum is designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, industrial and technology managers, or research technicians.

The Mission Critical Operations curriculum prepares graduates for employment in a wide range of positions in specific mission critical environments, operations technology, and maintenance. Course work includes the development of a student’s ability to maintain technically sophisticated systems for business continuity and near continuous uptime using engineering, information technology, and industrial management and maintenance skills. The course work emphasizes analytical and problem-solving skills required to sustain high availability national security interests and includes instruction in electromechanical systems, networking, automation, cybersecurity, emergency management and systems integration.

Graduates should qualify for employment as entry-level technicians with businesses, industries, educational systems, and governmental agencies in national critical infrastructure areas including, but not limited to, communications, emergency services, energy, financial services, healthcare, information technology, and transportation.

Introduction to MCO Certificate – C40430A

Critical Electrical Systems Certificate – C40430B

Critical Control Systems Certificate – C40430C

Mission Critical Operations Certificate – C40430D

Program Sequence

First Semester
BAT 117 Principles of Heat and Fluids .................................. 3
ISC 112 Industrial Safety .................................................. 2
MCO 110 Intro to MCO .................................................... 2
MNT 110 Intro to Maintenance Procedures .............................. 2
ENG 111 Writing and Inquiry .......................................... 3
MAT 111 Algebra/Trigonometry ........................................ 3

Second Semester
ELC 127 Software for Technicians ..................................... 2
ELC 131 Circuit Analysis I ............................................... 4
MCO 115 MCO Infrastructures ......................................... 3
MNT 222 Industrial Sys Schematics ................................... 2
HUM 110 Technology and Society ..................................... 3

Complete Introduction to MCO Certificate (C40430A): BAT 117, ISC 112, MCO 110, MCO 115, MNT 110

Third Semester
PSY 118 Interpersonal Psychology ..................................... 3
WBL 112 Work-Based Learning I ...................................... 2

Fourth Semester
ATR 112 Intro to Automation ............................................. 3
BAT 111 Building Automation Systems ................................. 2
ELN 255 Data Communication Systems ............................... 4
ELC 250 Critical Power Systems ....................................... 4
MCO 210 Critical Site Operations ....................................... 3

Complete Critical Electrical Systems Certificate (C40430B): ELC 131, ELC 250, ELN 235

Fifth Semester
MCO 260 Critical Facility Infrastructures ............................ 4
MCO 265 Critical Facility Management ................................ 3
MCO 266 ICS Cyber Security .......................................... 3
PCI 172 SCADA Systems ............................................... 4
ENG 114 Prof Research & Reporting ................................ 3

Complete Critical Control Systems (C40430C): ATR 112, BAT 111, MCO 266, MNT 222, PCI 172


Graduation Requirements ................................................... 68 Credit Hours
PLUMBING

Plumbing: Residential Diploma - D35300A
The Plumbing curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repair of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain knowledge of state codes and requirements.

Graduates should qualify for employment at parts supply houses, maintenance companies, and plumbing contractors to assist with various plumbing applications.

Plumbing: Commercial Diploma – D35300B

Plumbing Concepts I Certificate - C35300D
The Plumbing certificate curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repairs of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain additional knowledge of State Codes and requirements.

Graduates should qualify for employment at parts supply houses, and for entry-level positions with maintenance companies and plumbing contractors to assist with various plumbing applications.

Plumbing Concepts II Certificate - C35300E
The Plumbing certificate curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repairs of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain additional knowledge of State Codes and requirements.

Graduates should qualify for employment at parts supply houses, and for entry-level positions with maintenance companies and plumbing contractors to assist with various plumbing applications.

Program Sequence – Plumbing: Residential Diploma (D35300A)

First Semester
BPR 130 Blueprint Reading/Construction.......................... 3
PLU 110 Modern Plumbing......................................... 9
PLU 124 Plumbing Business Operations.......................... 2
PLU 145 Plumbing Measure Calculations.......................... 2

Second Semester
ENG 110 Freshman Composition..................................... 3
PLU 120 Plumbing Applications...................................... 9
PLU 140 Introduction to Plumbing Codes........................... 2
PLU 150 Plumbing Diagrams......................................... 2
PLU 160 Plumbing Estimates......................................... 2

Complete Plumbing Concepts I Certificate (C35300D): BPR 130, PLU 110, PLU 140

Electives List I (Choose 1 hour from the following):
SST 140 Green Building and Design Concepts......................... 3
PLU 192 Selected Topics in Plumbing................................. 2

Graduation Requirements ........................................ 44 Credit Hours

Program Sequence – Plumbing: Commercial Diploma (D35300B)

First Semester
BPR 130 Blueprint Reading/Construction.......................... 3
PLU 120 Plumbing Applications...................................... 9
PLU 140 Intro to Plumbing Codes.................................... 2
PLU 211 Commercial/Industrial Plumbing.......................... 3
PSY 118 Interpersonal Psychology.................................... 3

Second Semester
BPR 230 Commercial Blueprints..................................... 2
PLU 110 Modern Plumbing............................................ 9
PLU 124 Plumbing Business Operations............................. 2
PLU 145 Plumbing Measure/Calculations............................ 2

Electives List I .................................................. 3

Complete Plumbing Concepts I Certificate (C35300D): BPR 130, PLU 110, PLU 140

Third Semester
PLU 214 Backflow Preventer Install................................. 2
PLU 220 Slab Rough-In.............................................. 4
ENG 110 Freshman Composition..................................... 3

Electives List II ............................................. 1

Electives List II (Choose 3 hours from the following):
PLU 220 Commercial Rough-In Plumbing........................... 4
PLU 225 Commercial Trim-Out Procedures........................ 4

Graduation Requirements ........................................ 48 Credit Hours

WELDING TECHNOLOGY

Welding Technology Degree - A50420
The Welding Technology curriculum provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry.

Instruction includes consumable and non-consumable electrode welding and cutting processes. Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and non-destructive testing provides the student with industry-standard skills developed through classroom training and practical application.

Welding Technology Diploma - D50420
Successful graduates of the Welding Technology diploma curriculum may be employed as entry-level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self-employment.

Welding Technology Certificate - C50420B
Instruction includes an introduction to consumable and non-consumable electrode welding and cutting processes. Additional courses in blueprint reading, metallurgy, and destructive testing...
provides the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology certificate curriculum may be employed as entry-level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, and welding-related self-employment.

**Fabrication Design Certificate - C50420C**

Instruction includes an introduction to fabrication design as it applies to welding technology.

**Computer Controlled Welding Certificate - C50420D**

Instruction includes an introduction to computer controlled welding.

**Program Sequence**

**First Semester**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3</td>
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<tr>
<td>WLD 110</td>
<td>Cutting Processes</td>
<td>2</td>
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<td>WLD 115</td>
<td>SMAW (Stick) Plate</td>
<td>5</td>
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<tr>
<td>WLD 121</td>
<td>GMAW (MIG) FCAW/Plate</td>
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<td>WLD 141</td>
<td>Symbols and Specifications</td>
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**Second Semester**

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<tr>
<td>MAT 110</td>
<td>Math Measurement and Literacy</td>
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<td>WLD 116</td>
<td>SMAW (Stick) Plate/Pipe</td>
<td>4</td>
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<tr>
<td>WLD 122</td>
<td>GMAW (MIG) Plate</td>
<td>3</td>
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<tr>
<td>WLD 131</td>
<td>GTAW (TIG) Plate</td>
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**Third Semester**

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<tr>
<td>WLD 132</td>
<td>GTAW (TIG) Plate/Pipe</td>
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<tr>
<td>WLD 151</td>
<td>Fabrication I</td>
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<td>WLD 262</td>
<td>Inspection and Testing</td>
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**Fourth Semester**

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<tr>
<td>ISC 112</td>
<td>Industrial Safety</td>
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<tr>
<td>WLD 215</td>
<td>SMAW (Stick) Pipe</td>
<td>4</td>
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<td>PSY 118</td>
<td>Interpersonal Psychology</td>
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<tr>
<td>Elective I</td>
<td>(Select 3 hours from the following courses):</td>
<td></td>
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<tr>
<td>BUS 110</td>
<td>Introduction to Business</td>
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<tr>
<td>MEC 180</td>
<td>Engineering Materials</td>
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<td>WBL 111</td>
<td>Work-Based Learning I</td>
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<td>Work-Based Learning I</td>
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**Graduation Requirements**

- 66 Credit Hours