Renewable Energy Technician

Associate of Applied Science Degree

Program Director: Kerry Hardman

NOTE: This program is in moratorium and will not be accepting new students.

Program Website (http://www.gfcmsu.edu/webs/industrialtech/)

The Renewable Energy Technician Associate of Applied Science degree program prepares graduates for technician jobs in the rapidly expanding renewable energy industry. Program graduates have general skills in industrial safety, electrical troubleshooting, hydraulic and pneumatic system operation, and mechanical system repair. They also have specialized skills in programmable logic controls, digital electronics, and wind turbine operations and maintenance. These specialized skills are built on a strong educational foundation in math, writing, communications, and computing.

For more information on other programs in this field, visit the catalog pages for the Industrial Technician CAS (http://catalog.gfcmsu.edu/academic-programs/sustainable-energy-technician-cas/) and the Industrial Technician AAS (http://catalog.gfcmsu.edu/academic-programs/industrial-technician-aas/).

Outcomes

Graduates are prepared to:

- Identify and practice safe workplace habits.
- Demonstrate familiarity with basic electrical tools and the ability to troubleshoot a basic electrical system.
- Demonstrate familiarity with basic mechanical tools and the ability to repair a basic mechanical system.
- Demonstrate a basic understanding of hydraulic and pneumatic systems.
- Demonstrate an understanding of both conventional and renewable energy sources.
- Demonstrate the ability to use personal computers and common operating systems and applications software.
- Develop and practice professional standards of workplace communication and interpersonal skills.
- Demonstrate wind industry safety skills, including climbing, rescue, and confined space procedures.
- Demonstrate a basic understanding of AC and DC variable speed motor drives.
- Demonstrate a basic understanding of programmable logic controllers.
- Demonstrate a basic understanding of digital electronics.
- Demonstrate an understanding of wind turbine operations and maintenance procedures.
- Demonstrate an understanding of college-level algebra.
- Demonstrate an understanding of motor control circuits and how they operate.

Estimated Cost

Estimated Resident Program Cost*

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$7,064</td>
</tr>
<tr>
<td>Application Fee</td>
<td>$30</td>
</tr>
<tr>
<td>Course Fee</td>
<td>$35</td>
</tr>
<tr>
<td>Program Fee</td>
<td>$1,000</td>
</tr>
<tr>
<td>Books/Supplies</td>
<td>$2,696</td>
</tr>
<tr>
<td>Total</td>
<td>$10,825</td>
</tr>
</tbody>
</table>

* Fall 2022 MUS Student Health Insurance Premiums may be changing. Please check the Health Insurance website (http://students.gfcmsu.edu/insurance.html) and/or Student Central for confirmed premium rates. Students will be charged an additional fee of $21 per credit for online/hybrid courses.

Program Requirements

Many students need preliminary math and writing courses before enrolling in the program requirements. These courses may increase the total number...
of program credits. Students should review their math and writing placement before planning out their full program schedules.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Grade/Sem</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECP 100</td>
<td>First Aid and CPR</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ELCT 120</td>
<td>Basic Industrial Controls</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ETEC 101</td>
<td>AC/DC Electronics I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NRGY 120</td>
<td>Industrial Safety and Rigging</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NRGY 130</td>
<td>Fundamentals of Mechanical Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M 105</td>
<td>Contemporary Mathematics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>M 121</td>
<td>College Algebra</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>M 151</td>
<td>Precalculus</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>M 171</td>
<td>Calculus I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credits</td>
<td>16-17</td>
<td></td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMX 115</td>
<td>Introduction to Interpersonal Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ETEC 103</td>
<td>AC/DC Electronics II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ELCT 130</td>
<td>Electric Motors and Generators</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MCH 130</td>
<td>Machine Shop</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NRGY 110</td>
<td>Fundamentals of Hydraulic/ Pneumatic Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>WRIT 104</td>
<td>Workplace Communications</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credits</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPP 131</td>
<td>Basic MS Office</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ETEC 220</td>
<td>Electrical Power and Distribution I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ETEC 231</td>
<td>Electronic Drive Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ETEC 245</td>
<td>Digital Electronics</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ELCT 250</td>
<td>Programmable Logic Controllers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credits</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td><strong>Spring</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPP 156</td>
<td>MS Excel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ETEC 230</td>
<td>Electrical Power and Distribution II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NRGY 101</td>
<td>Introduction to Sustainable Energy</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>NRGY 210</td>
<td>Wind Technician Safety</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>NRGY 230</td>
<td>Wind Turbine Operations and Maintenance</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Credits</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Credits</td>
<td>65-66</td>
<td></td>
</tr>
</tbody>
</table>

* Indicates prerequisites needed.

** Placement in course(s) is determined by placement assessment.

+ A grade of C- or above is required for graduation.