Computer Engineering Minor

Minor Director: Ed Char
Office Location: Tolentine Hall Rm 408
Telephone: (610) 519-5659
Email: edward.char@villanova.edu

About:

The Computer Engineering minor is open to all students who satisfy the prerequisites for the list of required courses.

Requirements:

The Computer Engineering minor requires the successful completion of seven courses and five laboratories (26 credits). Five required courses, five required laboratories, and two elective courses.

Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 2030</td>
<td>Electric Circuits Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ECE 2031</td>
<td>Elect Circuit Fundamentals Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 2170</td>
<td>Fundamentals of CPE</td>
<td>3</td>
</tr>
<tr>
<td>ECE 2171</td>
<td>Fundamentals of CPE Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 2172</td>
<td>Digital Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 2173</td>
<td>Digital Systems Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 2160</td>
<td>C++ Algorithms &amp; Data Struct</td>
<td>3</td>
</tr>
<tr>
<td>ECE 2161</td>
<td>C++ Algorithms &amp; Data Struct Lab</td>
<td>1</td>
</tr>
<tr>
<td>ECE 3170</td>
<td>Computer Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3171</td>
<td>Computer Architecture Lab</td>
<td>1</td>
</tr>
</tbody>
</table>
Elective Courses:

Electives are subject to change. Electives may be added to this list at the discretion of the College of Engineering.

Select two courses from the list below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 2530</td>
<td>Analog Electronics I</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3476</td>
<td>Computer and Network Security</td>
<td>3</td>
</tr>
<tr>
<td>ECE 3180</td>
<td>Computer Networks</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5170</td>
<td>Intro to Post-Quantum Computing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5172</td>
<td>Fund of Digital Hardware Design</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5250</td>
<td>Biomedical Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5251</td>
<td>Biomedical Signal Processing</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5252</td>
<td>Medical Imaging</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5400</td>
<td>Applied Machine Learning</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5450</td>
<td>Microcontrollers &amp; Applic</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5478</td>
<td>Eng Secure Cyber-Physical Sys</td>
<td>3</td>
</tr>
</tbody>
</table>