ROBOTICS ENGINEERING MINOR

Description
Chair and Advisor: Justin Bradley (CSE)

The robotics engineering minor is jointly administered by the Departments of:

- Electrical & Computer Engineering (ECE)
- Computer Science and Engineering (CSE)
- Mechanical and Materials Engineering (MME)

Requirements
This minor is available to all majors. Consult with your advisor before declaring this minor.

The robotics engineering minor consists of three core courses and three elective courses. When selecting electives, the student must take two courses outside of their major area of study. For example, a student in mechanical engineering might take an elective from the Department of Computer Science and Engineering and one from the Department of Electrical Engineering.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td><strong>Core Requirements</strong></td>
<td></td>
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<tr>
<td>Select one course from each of the three following topic areas:</td>
<td>9</td>
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<tr>
<td></td>
<td><strong>Topic Area: Core Programming</strong></td>
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<tr>
<td>CSCE 155</td>
<td>COMPUTER SCIENCE I (version A or E)</td>
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<tr>
<td>CSCE 156</td>
<td>COMPUTER SCIENCE II</td>
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<tr>
<td>CIST 1400</td>
<td>INTRODUCTION TO COMPUTER SCIENCE I (UNO course)</td>
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<td></td>
<td><strong>Topic Area: Controls</strong></td>
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<tr>
<td>MECH 3500</td>
<td>INTRODUCTION TO DYNAMIC AND CONTROL OF ENGINEERING SYSTEMS</td>
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<tr>
<td>ECEN 4440</td>
<td>LINEAR CONTROL SYSTEMS</td>
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<tr>
<td>ECEN 2200</td>
<td>INTRODUCTION TO EMBEDDED SYSTEMS</td>
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<tr>
<td>ECEN 4910</td>
<td>SPECIAL TOPICS IN ELECTRIC AND COMPUTER ENGINEERING IV</td>
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<td></td>
<td><strong>Topic Area: Embedded Systems</strong></td>
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<tr>
<td>ECEN 1060</td>
<td>MICROPROCESSOR APPLICATIONS</td>
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<tr>
<td>CSCE 336</td>
<td>EMBEDDED SYSTEMS</td>
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<tr>
<td>MECH 457</td>
<td>MECHATRONIC SYSTEMS</td>
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<td></td>
<td><strong>Elective Requirements</strong></td>
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<td>Select three of the following; two must be outside your department:</td>
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<tr>
<td>ECEN 4000</td>
<td>ELECTRONIC INSTRUMENTATION</td>
<td></td>
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<tr>
<td>ECEN 4280</td>
<td>POWER ELECTRONICS</td>
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<tr>
<td>ECEN 4440</td>
<td>LINEAR CONTROL SYSTEMS</td>
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<tr>
<td>ECEN 4600</td>
<td>LABVIEW PROGRAMMING</td>
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<tr>
<td>ECEN 4620</td>
<td>COMMUNICATION SYSTEMS</td>
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<tr>
<td>ECEN 4980</td>
<td>SPECIAL TOPICS IN ELECTRICAL ENGINEERING IV</td>
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<tr>
<td>CSCE 436</td>
<td>ADVANCED EMBEDDED SYSTEMS</td>
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<tr>
<td>CSCE 439</td>
<td>ROBOTICS ALGORITHMS APPLICATIONS</td>
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<tr>
<td>CSCE 473</td>
<td>COMPUTER VISION</td>
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<tr>
<td>CSCE 476</td>
<td>INTRODUCTION TO ARTIFICIAL INTELLIGENCE</td>
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</table>

Total Credits: 18

1 On the Scott Campus in Omaha, similar courses being offered by CIST could be substituted.