ROBOTICS, MINOR

Saint Louis University's School of Science and Engineering offers a robotics minor that allows students to study one area related to robotics while exploring how other areas interface with each other to form a complete robot.

Students in the robotics minor at SLU gain a solid foundation through a combination of coursework and hands-on learning. This is accomplished by picking one topical area from which to take the majority of courses followed by taking several courses spread across the remaining topical areas. The topical areas include:

- Linear Systems – the study of analyzing and designing systems using math involving both response over time and response over frequency
- Embedded Systems – the study of how computing hardware is used to add functionality to larger designs
- Software Systems – the study of how software is used to add functionality to larger designs
- Mechanical Systems – the study of how rigid bodies and flexible joints add functionality to larger designs

Curriculum Overview

SLU's robotics minor builds on the knowledge of mathematics and science that students develop in their primary program by providing coursework that exposes them to the different disciplines that intersect in the field of robotics while allowing them to gain fundamental experience in one of the disciplines. This exposure will give graduates the ability to work in one discipline while understanding how their work interacts with the other systems that form a complete robotic product.

Requirements

Students in the Robotics minor will complete 18 total credits focusing on one area related to robotics while exploring how other areas interface with each other to form a complete robot. Courses are categorized into 4 topical areas—linear systems, software systems, embedded systems, and mechanical systems. In one topical area, they will choose three courses (9 credits), one of which is denoted as a terminal course. Students will also take three additional courses (9 credits) from the remaining topical areas. Of the six courses for the minor at least three must come from courses outside the student's primary major and cannot be required for their primary major.

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<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td></td>
<td><strong>Topical Area</strong></td>
<td><strong>9</strong></td>
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<td><strong>Breadth courses</strong></td>
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**Linear Systems**

- ECE 3150  Linear Systems
- MENG 3110  Linear Vibrations
- ECE 4120  Automatic Control Systems
- AENG 3410  Analysis and Control of Linear Systems
- AENG 3150  Astrodynamics
- ECE 4151  Digital Signal Processing
- BME 4130  Medical Imaging
- BME 4150  Brain Computer Interface
- AENG 4400  Stability and Control *

**Embedded Systems**

- ECE 2205  Digital Design
- ECE 3225  Microprocessors
- ECE 3215  Computer Systems Design
- ECE 4226  Mobile Robotics *

**Mechanical Systems**

- CVNG 2100  Statics
- MENG 2150  Dynamics
- MENG 3010  Machine Design
- MENG 4450  Programmable Logic Controllers and Robotics *

*denotes terminal courses

**Total Credits**

18

Continuation Standards

- Students must maintain a minimum 2.00 GPA.