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 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.

Code	Title	Credits
Topical Area		**9**
Breadth courses		**9**
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 *	
Software Systems		
CSCI 2100	Data Structures	
CSCI 2300	Object-Oriented Software Design	
CSCI 4830	Computer Vision *	
CSCI 4750	Machine Learning *	
CSCI 4740	Artificial Intelligence *	
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.

Contact Us

For more information on the robotics minor, please contact:

Kyle Mitchell
kyle.mitchell@slu.edu (kyle.mitchell@slu.edu)