

The Minor in Robotics

Robotic systems have a wide range of applications in modern technology and manufacturing. Robots can vary in complexity and use, from the microrobots used for surgical procedures to the moderate-sized robots common in manufacturing and undersea exploration to the macrorobots used for the disposal of nuclear waste and as arms on space-station modules. The program designed for a minor in robotics provides a fundamental understanding of robotic operation and preliminary training in the design and use of robots.

Units required: 18

Prerequisites:

Code	Title	Units
Math 217	Differential Equations	3
Physics 191 & 191L	Physics I and Physics I Laboratory	4
Physics 192 & 192L	Physics II and Physics II Laboratory	4
CSE 131	Introduction to Computer Science	3

Required courses:

Code	Title	Units
MEMS 255	Dynamics	3
ESE 351 or MEMS 4310	Signals and Systems Dynamics and Vibrations	3
ESE 446	Robotics: Dynamics and Control	3
ESE 447	Robotics Laboratory	3
Total Units		12

Two additional courses must be chosen with the approval of the director of the program for a minor in robotics. Suggested courses include the following:

Code	Title	Units
CSE 417T	Introduction to Machine Learning	3
CSE 546T	Computational Geometry	3
ESE 441 or MEMS 4301	Control Systems Modeling, Simulation and Control	3
MEMS 3110	Machine Elements	3

For more information about the minor, contact Dennis Mell (<https://ese.wustl.edu/faculty/Pages/faculty.aspx?bio=150>) (ESE) or Jackson Potter (<https://mems.wustl.edu/faculty/Pages/Jackson-Potter.aspx>) (MEMS).