MINOR IN ROBOTICS

Required Robotics Courses
Select one course: 3

- CS 3630 Introduction to Perception and Robotics
- ECE 4560 Introduction to Automation and Robotics
- ME 4451 Robotics
- ME 4803 Medical Robotics

Elective Courses
Choose at least one course from 2 of the 4 core categories: 12

Autonomy
- AE 4552 Introduction to Humans & Autonomy
- CS 3600 Introduction to Artificial Intelligence
- CS 4641 Machine Learning
- CS 4649 Robot Intelligent Planning
- ECE 4555 Embedded and Hybrid Control Systems

Controls
- AE 3531 Control System Analysis and Design
  or ECE 31 Feedback Control Systems
  or ME 44 Control of Dynamic Systems
- ECE 4550 Control System Design
- ME 4012 Modeling and Control of Motion Systems
- ME 4405 Fundamentals of Mechatronics

Mechanics
- AE 2220 Dynamics
  or CEE 2220 Dynamics
  or ME 2210 Dynamics of Rigid Bodies
- AE 3530 System Dynamics and Vibration
- ME 4189 Structural Vibrations

Perception
- BMED 3500 Biomedical Sensors and Instrumentation
- BMED/ECE 4781 Biomedical Instrumentation
- BMED/ECE 4783 Introduction to Medical Image Processing
- CS 4476 Introduction to Computer Vision
- CS 4616 Pattern Recognition
- ECE 2026 Introduction to Signal Processing
- ECE 4180 Embedded Systems Design
- ECE 4271 Applications of Digital Signal Processing

Total Credit Hours 15

AE/BMED/ME/ECE/CS 4699 Undergraduate Research in robotics or autonomous systems (3 hours) may be used to fulfill one of the 4 core requirements. This research must be completed with a robotics faculty member and requires a final report that highlights its linkage to the respective core: Autonomy, Controls, Mechanics, and Perception.

Additional Restrictions on the 15 hours of credit for the Robotics Minor:

- Courses must be taken from two or more schools.
- All courses from the minor must be passed with a grade of C or higher.
- No more than one 2000-level course may be used towards the minor.
- No course that is required (by name and number) in the student's major discipline can be counted towards the student's minor. No course that is considered equivalent to a required course in the student's major is allowed for the minor.
- No course counted towards the Robotics Minor can be used for any other undergraduate minor or certificate.

- At least two courses must be taken outside of the student's home school. Cross-listed courses, such as those marked with an * in the list above, cannot count as being “outside the home school” for any of the students who are from the schools that cross list that course.