

# Autonomous Robotics Laboratory

EECS 498-004 with Prof. Edwin Olson

- Kinematics
- Sensing
- Planning
- Multi-Robot Teams

This course will provide students with essential theoretical background and hands-on experience in central topics in robotics. These include: kinematics, inverse kinematics, sensors and sensor processing, and motion planning. Teams of students will explore these subjects through a series of challenge-themed laboratory exercises. Successful students will develop a pragmatic understanding of both theoretical principles and real-world issues, enabling them to design and program robotic systems incorporating sensing, planning, and acting.

We explore these topics from a computer science perspective, but we will also cover critical robotics topics that are often omitted from computer science curricula. These may include, for example, electrical circuits, control systems, Kalman filters, mechanics, and dynamics. Specialized computer science topics such as embedded systems programming, real time operating systems, artificial intelligence, etc., may also make appearances. No background is assumed in these areas.

The course is intended for upper-level computer science undergraduates, though any one with the appropriate background is welcome.



**Class space is limited; enroll for Winter term today!**

<http://april.eecs.umich.edu/courses>