



ROBOTICS & MECHATRONICS

Track Description

Mechatronics is the synergistic integration of mechanical engineering with electronics and intelligent computer control in design and manufacturing of industrial products and processes. Also, Robotics is emerging to be a prime technology that can greatly advance a wide variety of industries that include healthcare (e.g. surgery and rehabilitation), defense, manufacturing, transportation (e.g. autonomous driving), energy (e.g. drilling and wind turbines), smart homes, space exploration, and hazardous material handling. Due to fundamental advances across multiple disciplines, robotics will be a huge growth area over the coming years, both academically and economically. Students completing the program will be equipped with broad fundamental knowledge and practical skills important for careers in industry and for graduate studies.

Required Courses

Robotics-related (choose 1+)

- ME 372J: Robotics & Automation
(Fall, Dr. Farshid Alambeigi) Prereq: ME 314D, ME 344+144L
- ME 350R: Robot Mechanism Design
(Spring, Dr. Ashish Deshpande) Prereq: EM 306, ME 314D, ME 318M
- ME 397*: Algorithms for Sensor-Based Robots
(Spring, Dr. Farshid Alambeigi) Prereq: ME 372J

Mechatronics-related (choose 1+)

- ME 348F/ME 392Q-9*: Advanced Mechatronics II
(Fall, Dr. Lei Zhou) Prereq: ME 338, ME 340, ME 344
- ME 348E/ME 392Q-6*: Advanced Mechatronics I
(Spring, Dr. Ann Fey) Prereq: ME 340+140L
- ME 360: Vehicle System Dynamics & Controls
(Spring, Dr. Raul Longoria) Prereq: ME 344

Faculty Mentors

Farshid Alambeigi, farshid.alambeigi@austin.utexas.edu
Lei Zhou, lzhou@utexas.edu

*This is a graduate course. To register for a graduate course, students need permission from the instructor, an undergraduate advisor, the graduate coordinator, and ESS.

**This course is offered by another department. Students need to check the pre-requisites of the courses and plan accordingly. Students may also need permission from the offering department to register for the course.

Please contact faculty mentors for approval or to petition other courses. For course descriptions visit the University Catalog.

Elective Courses (choose up to 2)

- ME 364L: Automatic Control System Design
(Fall, Dr. Raul Longoria) Prereq: ME 344+144L
- ME 397M*: Propulsion System Control
(Fall, Dr. Junmin Wang) Prereq: ME 344
- EE 362K**: Introduction to Automatic Control
(Fall, Dr. Cuevas) Prereq: EE 313, M 340L
- EE 445L**: Embedded Systems Design Lab
(Fall, Dr. Mcdermott) Prereq: EE 312 or 319K, EE 411 and 313, ME 333T
- CS 376**: Computer Vision
(Fall, Dr. Qixing Huang) Prereq: CS 429; M 340L, 341 or SDS 329C, and M 362K or SDS 321
- ME 355K: Engineering Vibrations
(Spring, Dr. Preston Wilson) Prereq: M 427J or 427K, ME 314D
- ME 369P: Application Programming for Engineers
(Spring, Dr. Mitch Pryor) Prereq: ME 318M
- ME 379M: Data Science for Engineers
(Spring, Dr. Ilyas Iyob)
- SDS 322**: Introduction to Scientific Programming
(Spring, Dr. Trueheart) Prereq: M 408C, 408K or 408N
- ME 377K: Projects in Mechanical Engineering
(Fall/Spring, any faculty member in related area)
- ASE 370C**: Feedback Control Systems
(Fall/Spring, Dr. Topcu/Dr. Tanaka) Prereq: ASE 330M

