Degree Requirements
Master of Science in
Robotics and Autonomous Systems
Systems Engineering Concentration

The MS in Robotics and Autonomous Systems requires a minimum of 30 credit hours. For the concentration in Systems Engineering, these credit hours must reflect one of the following options:
- 30 credit hours and a portfolio, or
- 30 credit hours including the required Applied Project course (EGR 593), or
- 30 credit hours including the required Thesis course (EGR 599) and a thesis

Coursework

Required Core Courses (6 credit hours)*
MAE 501 Linear Algebra in Engineering
MAE 547 Modeling and Control of Robots *MAE 501 is a pre/corequisite

Concentration Courses (6 credit hours)*
EGR 550 Mechatronic Systems
and one of the following:
EGR 557 Foldable Robotics
EGR 555 Mechatronics Device Innovation
EGR 598 System Control and Optimization

Elective Courses (12 - 18 credit hours)
At least two courses (6 credit hours) must be chosen from outside the student’s concentration area among the courses listed below. The electives must be graduate courses in science, engineering, mathematics, or others approved by the Graduate Program Committee.

MAE 508 Digital Control: Design and Implementation
MAE 598 Multi-Robot Systems
MAE 598 Bio-Inspired Robots
MAE 598 LMI Methods in Optimal and Robust Control
IEE 598 Optimal Foraging Theory: From Biology to Engineering
CSE 575 Statistical Machine Learning
CSE 591 Advances in Robot Learning
CSE 591 Human-Aware Robotics

EE 591 Feedback Systems
EE 591 Real-Time DSP Systems
CSE 522 Real-Time Embedded Systems
CSE 551 Foundations of Algorithms
CSE 574 Planning and Learning Methods in AI
CSE 576 Topics in Natural Language Processing
CSE 591 Perception in Robotics

Culminating Experience (0 - 6 credits)
Select one (1) culminating experience:
- Portfolio (0 credits)
- EGR 593 Applied Project (3 credits)
- EGR 599 Thesis (6 credits)
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*Courses are subject to change and are not typically offered every semester. See program website, graduate advising, or department with questions.*