Ph.D. Requirements

Core Course Requirement - 12 Credits

- Robotics Mechanics Core Area
  - ROBOT 6000 Robotics I: Mechanics | 3 Credits
- Robot Control Core Area
  - ROBOT 6100 Robotics II: Control | 3 Credits
- Cognition Core Area (Pick One)
  - ROBOT 6200 Motion Planning | 3 Credits (Spring)
  - CS 6300 | Artificial Intelligence | 3 Credits (Fall)
- Perception Core Area (Pick One)
  - CS 6640 | Image Processing | 3 Credits (Fall)
  - CS 6320 | Computer Vision | 3 Credits (Fall)

Elective Course Requirement * 9 Cr

Select 3 classes from two different categories

Robot Mechanics Category Electives
- ROBOT 7000 Manipulation and Mobility
- ROBOT 7010 System Identification for Robotics

Robot Control Category Electives
- ME EN 6200 OR ECE 6615 | Classical Control Systems
- ME EN 6210 OR ECE 6652 OR CH EN 6203 | State Space Control
- ME EN 7200 | Nonlinear Control
- ME EN 7210 | Optimal Control
- ECE 6570 | Adaptive Control

Cognition Category
- CS 6350 | Machine Learning
- CS 6958 | Robot Learning

Perception Category
- CS 7640 | Advanced Image Processing
- CS 6353 | Deep Learning for Image Analysis

Human-Robot Interaction Category
- CS 6360 | Virtual Reality
- ROBOT 7400 | Haptics for VR, Teleoperation, and Physical Human-Robot Interaction
- ROBOT 6400 Neural Engineering and NeuroRobotics

Elective Course Requirement * 9 Cr

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All electives are 3 credits, with the exception of ROBOT 6400, 6500, ECE/CS 6780 (which are each 4 credits).

Core courses not used to fulfill a core area requirement may also be considered.

Allied Courses ** 9-10 Credits

Remaining courses to reach the 30-credit hour coursework minimum requirement may be chosen from core courses, preapproved electives, supporting electives, lecture-based engineering/science courses (e.g., excluding seminars, projects, thesis), or approved non-engineering/science courses. Subject to supervisory committee approval.