ROBOTICS (M.S.)

Admission Requirements
Applicants must meet requirements for admission to the Graduate School (http://bulletins.wayne.edu/graduate/general-information/academic-regulations/). Students must have a bachelor's degree or the equivalent in engineering from an accredited college or university. Students from all science, technology, engineering and math (STEM) disciplines will be considered for admission.

All applicants must be admitted to the Graduate School, the College of Engineering (http://bulletins.wayne.edu/graduate/college-engineering/academic-regulations/), and a department within the college, meeting all applicable admission requirements, including a minimum grade point average of 2.75 for regular admission and 2.5 to 2.74 for qualified admission. Professional experience will be considered in admission.

The program requires students to complete a minimum of thirty credits using master's degree Plan A (24 course credits plus a 6 credit master's thesis) or Plan C (30 credits of coursework). Plan A is intended for students planning to go on to pursue a Doctoral degree. All courses must be graduate-level courses offered within the College of Engineering. The program requires applicants to declare one of three majors:

• Industrial Automation, hosted by the Engineering Technology (ET)
• Intelligent Control, hosted by the Electrical and Computer Engineering (ECE)
• Smart Mobility, hosted by the Computer Science (CSC)

The M.S. in Robotics requires competency in three foundational areas for all three majors. A student must take one of the two courses in each of the 3 foundational areas. In addition to fulfilling the general scholarship requirements of the Division, all course work must be completed in accordance with the regulations of the Graduate School (http://bulletins.wayne.edu/graduate/general-information/academic-regulations/) and the College of Engineering (http://bulletins.wayne.edu/graduate/college-engineering/academic-regulations/).

Industrial Automation

<table>
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<tr>
<th>Code</th>
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<tr>
<td>ROBOTICS (M.S.) (Please select one course from each area)</td>
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Robot Software & Programming
CSC 6110 Software Engineering
or ET 5600 Python: Industrial Applications

Robot Architectures
CSC/ECE 5280 Introduction to Cyber-Physical Systems
or ET 5100 Fundamentals of Mechatronics and Industrial Applications

Robot Sensing, Perception, Planning, Dynamics & Control
ECE 5425 Robotic Systems I
or MIT 5700 Industrial Robots Modeling and Simulation

Departmental Requirements
ET 7430 Methods of Engineering Analysis

Electives
EET 5720 Computer Networking Applications
EET 5730 Embedded Systems Networking
EET 7720 Advanced Computer Networking
ET 5110 Advanced Programmable Controllers and Industrial Applications
ET 5870 Engineering Project Management

Total Credits 30

Intelligent Control

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Robot Sensing, Perception, Planning, Dynamics & Control
ECE 5425 Robotic Systems I
or MIT 5700 Industrial Robots Modeling and Simulation

Departmental Requirements
ECE 5470 Control Systems II
ECE 7425 Robotics Systems II

Electives
ECE 5440 Computer-Controlled Systems
ECE 5620 Embedded System Design
ECE 6570 Smart Sensor Technology I: Design
ECE 6590 Introduction to Digital Image Processing
ECE 6660 Introduction to VLSI Systems
ECE 6740 Nonlinear Control Systems
ECE 7430 Discrete Event Systems with Machine Learning
ECE 7440 Dynamic Systems and Optimal Control
ECE 7530 Advanced Digital VLSI Design
ECE 7690 Fuzzy Systems
ECE 8999 Master's Thesis Research and Direction

Total Credits 30

Smart Mobility

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CSC/ECE 5280 Introduction to Cyber-Physical Systems
or ET 5100 Fundamentals of Mechatronics and Industrial Applications

Robot Sensing, Perception, Planning, Dynamics & Control
ECE 5425 Robotic Systems I
or MIT 5700 Industrial Robots Modeling and Simulation

Departmental Requirement

Total Credits 3
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<tr>
<th>Course Code</th>
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<tr>
<td>CSC 5250</td>
<td>Network, Distributed, and Concurrent Programming</td>
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<tr>
<td>CSC 5270</td>
<td>Computer Systems Security</td>
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<tr>
<td>CSC 5825</td>
<td>Introduction to Machine Learning and Applications</td>
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<tr>
<td>CSC 5870</td>
<td>Computer Graphics I</td>
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<tr>
<td>CSC 6280</td>
<td>Real-Time and Embedded Operating Systems</td>
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<td>CSC 6800</td>
<td>Artificial Intelligence I</td>
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<td>CSC 6860</td>
<td>Digital Image Processing and Analysis</td>
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<td>CSC 6870</td>
<td>Computer Graphics II</td>
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<tr>
<td>CSC 7991</td>
<td>Advanced Topics in Computer Science **</td>
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<td>CSC 8990</td>
<td>Graduate Seminar</td>
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<tr>
<td>CSC 8999</td>
<td>Master's Thesis Research and Direction</td>
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**Total Credits**: 30

* To satisfy this requirement, CSC 5991 must be elected with the topic area, Introduction to Mobility.

** CSC 7991 should be taken with the topic area, Embedded Wireless Networking for Cyber-Physical Systems. Students should consult an advisor before choosing this course as an elective.