

Robotics, MS

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Mechanical Engineering		
Complete one of the following:		4
ME 5659	Control Systems Engineering	
ME 5250	Robot Mechanics and Control	
Electrical and Computer Engineering		
Complete one of the following:		4
EECE 5698	Special Topics in Electrical and Computer Engineering	
EECE 5698	Special Topics in Electrical and Computer Engineering	
Computer Science		
Complete one of the following:		4
CS 5335	Robotic Science and Systems	
CS	(TBA)	

Concentrations

Complete one of the following concentrations:

- Mechanical Engineering (p. 1)
- Electrical and Computer Engineering (p. 1)
- Computer Science (p. 1)

MECHANICAL ENGINEERING

Code	Title	Hours
Required Course		
Complete additional ME course not used to fulfill the core requirements:		4
ME 5659	Control Systems Engineering	
ME 5250	Robot Mechanics and Control	
Options		
Complete one of the following options:		16
<i>Course Work Option</i>		
Complete four of the following from the mechanical engineering course list. (p. 1)		
<i>Thesis Option</i>		
ME 7990	Thesis	
Complete two of the following from the mechanical engineering course list. (p. 1)		
<i>Project Option</i>		
ME 7945	Master's Project	
Complete three of the following from the mechanical engineering course list. (p. 1)		

ELECTRICAL AND COMPUTER ENGINEERING

Code	Title	Hours
Required Course		
Complete additional EECE course not used to fulfill the core requirements:		4

EECE 5698	Special Topics in Electrical and Computer Engineering
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EECE 5698	Special Topics in Electrical and Computer Engineering
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Options

Complete one of the following options:	16
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Course Work Option

Complete four of the following from the electrical and computer engineering course list. (p. 2)

Thesis Option

EECE 7990	Thesis
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Complete two of the following from the electrical and computer engineering course list. (p. 2)
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Project Option

EECE 7674	Master's Project
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Complete three of the following from the electrical and computer engineering course list. (p. 2)
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COMPUTER SCIENCE

Code	Title	Hours
Required Course		
Complete additional CS course not used to fulfill the core requirements:		4
CS 5335	Robotic Science and Systems	
CS	(TBA)	

Options

Complete one of the following options:	16
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Course Work Option

Complete four of the following from the computer science course list. (p. 2)
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Thesis Option

CS 7990	Thesis (complete twice for a total of 8 credits)
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Complete three of the following from the computer science course list. (p. 2)

Project Option

CS 8674	Master's Project
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Complete three of the following from the computer science course list. (p. 2)

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Course Lists

MECHANICAL ENGINEERING COURSE LIST

Code	Title	Hours
ME 5240	Computer Aided Design and Manufacturing	
ME 5245	Mechatronic Systems	
ME 5250	Robot Mechanics and Control	
ME 5655	Dynamics and Mechanical Vibration	
ME 5659	Control Systems Engineering	

ME 6200	Mathematical Methods for Mechanical Engineers 1
ME 6201	Mathematical Methods for Mechanical Engineers 2
ME 7210	Elasticity and Plasticity
ME 7247	Advanced Control Engineering
ME 7253	Advanced Vibrations
IE 5630	Biosensor and Human Behavior Measurement
IE 7280	Statistical Methods in Engineering
IE 7315	Human Factors Engineering

ELECTRICAL AND COMPUTER ENGINEERING COURSE LIST

Code	Title	Hours
EECE 5580	Classical Control Systems	
EECE 5639	Computer Vision	
EECE 5642	Data Visualization	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5698	Special Topics in Electrical and Computer Engineering	
EECE 7323	Numerical Optimization Methods	
EECE 7337	Information Theory	
EECE 7360	Combinatorial Optimization	
EECE 7370	Advanced Computer Vision	
EECE 7397	Advanced Machine Learning	

COMPUTER SCIENCE COURSE LIST

Code	Title	Hours
CS 5006	Algorithms	
CS 5100	Foundations of Artificial Intelligence	
CS 5330	Pattern Recognition and Computer Vision	
CS 5340	Computer/Human Interaction	
CS 6120	Natural Language Processing	
CS 6140	Machine Learning	
CS 6350	Empirical Research Methods	
CS 7140	Advanced Machine Learning	
DS 5220	Supervised Machine Learning and Learning Theory	