Artificial Intelligence, MS (Seattle)

The Master of Science in Artificial Intelligence program is designed to give students a comprehensive framework for AI with specialization in one of five areas: vision, intelligent interaction, robotics and agent-based systems, machine learning, and knowledge management and reasoning. Students may choose from three options: specialization, thesis, or coursework only. Students will engage in an extensive core intended to develop depth in all core concepts that build a foundation for AI theory and practice. Students will also be given the opportunity to build on the core knowledge of AI by taking a variety of elective courses, selected from colleges throughout campus, to explore key contextual areas or more complex technical applications. Program graduates will be well positioned to attain research and development positions in a rapidly growing field or to progress into doctoral-degree-related fields.

The Master of Science in Artificial Intelligence is comprised of eight courses: five core courses, two electives to be chosen from one of five specialization areas or coursework option, and one elective. The core courses are designed and developed by Khoury College faculty. Elective courses consist of graduate courses offered in Khoury and other partner colleges, including College of Arts, Media and Design; College of Engineering; College of Science; and College of Social Sciences and Humanities.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative GPA of 3.000 or higher is required in the following core courses:

Code	Title	Hours
Intelligence		
CS 5100	Foundations of Artificial Intelligence	4
Programming and Algorithms		
CS 5010	Programming Design Paradigm	4
CS 5800	Algorithms	4
Machine Learning		
CS 6140	Machine Learning	4
Interaction		
CS 5170	Artificial Intelligence for Human-Computer Interaction	4

Options

Complete one of the following specializations:

SPECIALIZATION OPTIONS

Code	Title	Hours
Complete two courses from one of the following specializations:		8
Vision		
CS 5330	Pattern Recognition and Computer Vision	
CS 7180	Special Topics in Artificial Intelligence	
EECE 5639	Computer Vision	
EECE 7370	Advanced Computer Vision	
Intelligent Interaction		
CS 5150	Game Artificial Intelligence	
CS 5340	Computer/Human Interaction	
CS 7340	Theory and Methods in Human Computer Interaction	
Robotics and Agent-Based Systems		
CS 5180	Reinforcement Learning and Sequential Decision Making	
CS 5335	Robotic Science and Systems	
EECE 5550	Mobile Robotics	
EECE 5554	Robotics Sensing and Navigation	
Machine Learning		
CS 5180	Reinforcement Learning and Sequential Decision Making	
CS 6220	Data Mining Techniques	
CS 7140	Advanced Machine Learning	

or EECE 7397	Advanced Machine Learning	
CS 7150	Deep Learning	
DS 5230	Unsupervised Machine Learning and Data Mining	
EECE 5612	Statistical Inference: An Introduction for Engineers and Data Analysts	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
MATH 7340	Statistics for Bioinformatics	
Knowledge Management and Reasoning		
CS 6120	Natural Language Processing	
CS 6200	Information Retrieval	
CS 6220	Data Mining Techniques	
CS 7290	Special Topics in Data Science	
Complete one course from the electives list below or an additional course chosen from the specialization area above, outside of the student's selected specialization area.		4

COURSEWORK OPTION

Code	Title	Hours
Complete 12 semester hours from the electives or specialization course lists. Students can take up to one Khoury College course numbered 5100–6000 that is not included on those lists.		12

THESIS OPTION

Code	Title	Hours
CS 7990	Thesis	4
CS 8674	Master's Project	4
Complete 4 semester hours from the electives or specialization course lists.		4

ELECTIVES

Code	Title	Hours
CS 7180	Special Topics in Artificial Intelligence	
CS 8674	Master's Project	
EECE 7337	Information Theory	
GSND 5110	Game Design and Analysis	
PHIL 5010	AI Ethics	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required