

Computational Artificial Intelligence Minor (CSE)

The minor in Computational Artificial Intelligence (mCAI) is designed to provide WashU students with the skills to pursue research and careers that require competence with emerging trends in artificial intelligence.

mCAI Admissions

Admissions to the mCAI minor is based on the candidate's completion of the prerequisites listed below. **Note:** Only a single course may be completed via transfer.

Program Prerequisites

Mathematics Prerequisites

Students must complete the following three courses:

Code	Title	Units
MATH 2130	Calculus III	3
ENGR 3180	Engineering Mathematics A	3
or ESE 2180	Linear Algebra and Component Analysis	
or MATH 3300	Matrix Algebra	
or MATH 4301	Linear Algebra	
ESE 3260	Probability and Statistics for Engineering	3
or ENGR 3280	Engineering Statistics With Probability	
or SDS 3020	Elementary to Intermediate Statistics and Data Analysis	
or SDS 3030	Statistics for Data Science I	
or SDS 5212	Statistics for Data Science I	
Total Units		9

Computing Prerequisites

Code	Title	Units
CSE 2407	Data Structures and Algorithms *	3

* CSE 2407 has a prerequisite of CSE 1301 Introduction to Computer Science or equivalent experience.

Program Requirements

Foundation (Core) Courses: 6 units required

Code	Title	Units
CSE 4102	Introduction to Artificial Intelligence	3
CSE 4107	Introduction to Machine Learning	3
or ESE 4170	Introduction to Machine Learning and Pattern Classification	
or SDS 4430	Statistical Learning	
Total Units		6

Electives: 9 units required

Students must complete any three of the following**:

Code	Title	Units
CSE 3101	Introduction to Intelligent Agents Using Science Fiction	3
CSE 3104	Data Manipulation and Management	3
CSE 4061	Text Mining	3
CSE 4101	AI and Society	3
CSE 4109	Introduction to AI for Health	3
CSE 5100	Deep Reinforcement Learning	3
CSE 5103	Theory of Artificial Intelligence and Machine Learning	3
CSE 5104	Data Mining	3
CSE 5105	Bayesian Methods in Machine Learning	3
CSE 5106	Multi-Agent Systems	3
CSE 5107	Machine Learning	3
CSE 5108	Human-In-The-Loop Computation	3
CSE 5109	Advanced Machine Learning	3
CSE 5180	Heuristic Search and Constraint Processing	3
CSE 5270	Natural Language Processing	3
CSE 5271	Data-Driven Privacy and Security	3
CSE 5370	Trustworthy Autonomy	3
CSE 5403	Algorithms for Nonlinear Optimization	3
CSE 5500	Mobile Robotics	3
CSE 5505	Adversarial AI	3
CSE 5509	Computer Vision	3
CSE 5610	Large Language Models	3



**Students also have the option to use a 3-unit, relevant, domain-specific course from another department. Examples include ECON 6140 Machine Learning and Data Science in Economics, MEMS 5205 Machine Learning Applications in Mechanical Engineering, PHYSICS 4080 Artificial Intelligence and Machine Learning Methods With Applications to Physics, and so on.

Additional Information

All courses used for the mCAI minor must be taken for a grade, and the student must earn a C– or better.