Artificial Intelligence and Philosophy, BS (Boston)

The artificial intelligence and philosophy combined major offers students an opportunity to obtain a fluency in formal logic, including logical proofs and the ability to represent arguments clearly and evaluate them for cogency. Students will find that logic plays a fundamental role in computer science and artificial intelligence as they experience an in-depth programming foundation. Students study the collection, manipulation, storage, retrieval, and computational analysis of data in its various forms including numeric, textual, image, and video data from small to large volumes. The philosophy curriculum also focuses on oral and written communication as well as ethical and social issues related to data storage, usage, manipulation, and presentation.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Universitywide Requirements

All undergraduate students are required to complete the Universitywide Requirements (https://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements/).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (https://catalog.northeastern.edu/undergraduate/university-academics/general-education-requirements/#nupathtext).

Artificial Intelligence Requirements

Code	Title	Hours
Computer Science Overview		
Complete the following in alignment with your home college:		
CS 1200	First Year Seminar	1
or PHIL 1000	Philosophy at Northeastern	
or INPR 1000	First-Year Interdisciplinary Seminar	
CS 1210	Professional Development for Khoury Co-op	1
or EESH 2000	Professional Development for Co-op	
Fundamental Courses		
All students can take a self-assessment to attempt to place out of CS 2000 and CS 2001. Students who place out of CS 2000 and CS 2001 will instead substitute 4-5 semester hours of CS, CY, or DS coursework at the 3000 level or higher not otherwise required in the degree.		
CS 1800	Discrete Structures	4
CS 2000 and CS 2001	Introduction to Program Design and Implementation and Lab for CS 2000	5
CS 2100 and CS 2101	Program Design and Implementation 1 and Lab for CS 2100	5
CS 3200	Introduction to Databases	4
DS 3500	Advanced Programming with Data	4
Artificial Intelligence Foundations		
DS 3000	Mathematical Foundations of Artificial Intelligence	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning	4
DS 4420	Advanced Machine Learning	4
or DS 4440	Modern Neural Networks	
Khoury Approved Electives		
With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.		
Complete 4 semester hours from within the following ranges:		4
CS 2300 or higher, except CS 5010		
CY 2000 or higher, except CY 4930		
DS 2500 or higher, except DS 4900		
EECE 2160	Embedded Design: Enabling Robotics	

EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
MKTG 4606	Digital, Analytics, Technology, and Automation Research Practicum	
Total Hours		**48**

Philosophy Requirements

Code	Title	Hours
PHIL 1115	Introduction to Logic	4
PHIL 1145	Technology and Human Values	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
or PHIL 2330	Modern Philosophy	
PHIL 4515	Advanced Deductive Logic	4
or PHIL 4516	Advanced Inductive Logic	
Philosophy Electives		
Complete two additional PHIL courses, one of which must be at the 3000 level or above.		8
Critical Philosophy Elective		
Complete 4 semester hours from the following:		4
AFCS 1101	Introduction to African American and Africana Studies	
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women and Religion	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 2155	Human Rights	
PHIL 2410	Possession, Sacrifice, and Divination in African Diasporic Religions	
PHIL 2619	Race and Religion in Film	
PHIL 3492	Indigenous Philosophy	
PHIL 3512	Religion, Race, and Politics	
PHIL 3822	Philosophy of Race and Racism	
Total Hours		**28**

Integrative Requirement

Code	Title	Hours
PHIL 3050	Information and Uncertainty	4
or PHIL 1300	Knowledge in a Digital World	
or PHIL 2001	Ethics and Evolutionary Games	
PHIL 5005	Information Ethics	4
or PHIL 4050	Artificial Intelligence and Society	
or PHIL 5010	AI Ethics	
Total Hours		**8**

Supporting Courses

Code	Title	Hours
Mathematics Requirement		
MATH 1341	Calculus 1 for Science and Engineering	4
Statistics Foundation		
ECON 2350	Statistics for Economists	4
Total Hours		**8**

Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
Complete one of the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	

ENGW 3309	Advanced Writing in the Humanities	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	
Total Hours		**8**

Required General Electives

Code	Title	Hours
Complete 28 semester hours of general electives.		28

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Interpreting Culture
- Analyzing and Using Data
- Understanding Societies and Institutions
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

128 total semester hours required