

Artificial Intelligence and Economics, BS (Boston)

The combined major in artificial intelligence and economics integrates fundamental economics courses with a strong 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. Utilizing these skill sets allows students to address complex issues in the behavior of individuals and the collective behavior of industries and governments.

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		
CS 1200 or ECON 1000 or INPR 1000	First Year Seminar Economics at Northeastern First-Year Interdisciplinary Seminar	1
CS 1210 or EESH 2000	Professional Development for Khoury Co-op Professional Development for Co-op	1
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
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	

Economics Requirements

Code	Title	Hours
Required Economics Courses		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics for Economists	4
Economics Electives		
Complete five ECON elective courses that are found in the following ranges, with no more than two in the ECON 1200 to ECON 1999 range (unless otherwise noted in specific combined majors, required core economics courses cannot be counted as electives by students completing Department of Economics programs):		20
ECON 1200-ECON 1999		
ECON 2990-ECON 3559		
ECON 3561-ECON 4689		
ECON 4900-ECON 4996		
ECON 5200-ECON 5999		
Economics Capstone		
ECON 4692	Senior Economics Seminar	4
or ECON 4997	Senior Economics Thesis	

Integrative Course Requirement

Code	Title	Hours
ECON 2560	Applied Econometrics	4

Supporting Course Requirements

Code	Title	Hours
Mathematics		
MATH 1231	Calculus for Business and Economics (It is highly recommended that students who take MATH 1231 take sections devoted to Economics students only.)	4
or MATH 1241	Calculus 1	
or MATH 1245	Calculus with Applications	
or MATH 1340	Intensive Calculus for Engineers	
or MATH 1341	Calculus 1 for Science and Engineering	
Computing and Social Issues		
Complete one of the following:		4
AFCS 2600	Issues in Race, Science, and Technology	
CY 4170	The Law, Ethics, and Policy of Data and Digital Technologies	
CY 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
DS 1300	Knowledge in a Digital World	
HIST 2220	History of Technology	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
JRNL 3700	Data Storytelling	
PHIL 1145	Technology and Human Values	
SOCL 1280	The Twenty-First-Century Workplace	
SOCL 2485	Environment, Technology, and Society	
SOCL 4528	Technology and Society	

English Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following:	4
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ENGW 3302	Advanced Writing in the Technical Professions
ENGW 3308	Advanced Writing in the Social Sciences
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines

Required General Electives

Code	Title	Hours
Complete 24 semester hours of general electives.		24

Economics GPA Requirement

Grades in the following four courses must average to a minimum of C (2.000):

Code	Title	Hours
ECON 2315	Macroeconomic Theory	
ECON 2316	Microeconomic Theory	
ECON 2350	Statistics for Economists	
ECON 2560	Applied Econometrics	

NUpath Requirements Satisfied

- Advanced Writing in the Disciplines
- Analyzing and Using Data
- Conducting Formal and Quantitative Reasoning
- Demonstrating Thought and Action in a Capstone
- Engaging with the Natural and Designed World
- Understanding Societies and Institutions
- Writing in the First Year
- Writing-Intensive in the Major

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

Program Requirement

128 total semester hours required