

# Computer Science and Economics, BS

The combined major in computer science and economics integrates fundamental economics courses with a strong programming foundation. Studying both the behavior of individuals and the collective behavior of industries and governments, students will utilize computing skills to address complex issues within the field.

## Program Requirements

- Concentrations and course offerings may vary by campus and/or by program modality. Please consult with your advisor or admissions coach for the course availability each term at your campus or within your program modality.
- Certain options within the program may be *required* at certain campuses or for certain program modalities. Please consult with your advisor or admissions coach for requirements at your campus or for your program modality.

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/nupath/>).

## Computer Science Courses

Code	Title	Hours
<b>Computer Science Overview</b>		
CS 1200 or ECON 1000	First Year Seminar Economics at Northeastern	1
CS 1210 or EESH 2000	Professional Development for Khoury Co-op Professional Development for Co-op	1
<b>Computer Science Fundamental Courses</b>		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800	Logic and Computation	4
<b>Computer Science Required Courses</b>		
CS 3000	Algorithms and Data	4
CS 3200	Introduction to Databases	4
CS 3500 and CS 3501	Object-Oriented Design and Lab for CS 3500	5
IS 2000	Principles of Information Science	4
Choose one of the following:		4
IS 4200 or IS 4300	Information Retrieval Human Computer Interaction	
<b>Khoury Elective</b>		
With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.		
Complete 8 semester hours of CS, CY, DS, or IS classes that are not already required. Choose courses within the following ranges:		8
CS 2500 or higher, except CS 5010		

CY 2000 or higher, except CY 4930

DS 2500 or higher, except DS 4900

IS 2000 or higher, except IS 4900

**Economics Requirements**

Code	Title	Hours
<b>Required Economics Courses</b>		
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
ECON 2560	Applied Econometrics	4

**Economics Electives**

Complete four ECON elective courses from the following ranges with no more than two at the ECON 1200-1999 range. Unless otherwise noted in specific combined majors, required core economics courses cannot be counted as electives by students completing Department of Economics programs: 16

ECON 1200 to ECON 1999

ECON 2990 to ECON 3559

ECON 3561 to ECON 4689

ECON 4900 to ECON 4996

ECON 5200 to ECON 5999

**Economics Capstone**

ECON 4692	Senior Economics Seminar	4
or ECON 4997	Senior Economics Thesis	

**Integrative Course Requirement**

Code	Title	Hours
The following courses are used in other areas of the major:		
ECON 2560	Applied Econometrics	
IS 2000	Principles of Information Science	

**Supporting Courses**

Code	Title	Hours
<b>Mathematics</b>		
MATH 1231	Calculus for Business and Economics (It is highly recommended that students who take MATH 1231 take sections devoted to ECON students only.)	4
or MATH 1241	Calculus 1	
or MATH 1245	Calculus with Applications	
or MATH 1251	Calculus and Differential Equations for Biology 1	
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	
HIST 2220	History of Technology	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
IS 1300	Knowledge in a Digital World	
or PHIL 1300	Knowledge in a Digital World	
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
<b>College Writing</b>		
ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4
<b>Advanced Writing in the Disciplines</b>		
Complete one course from the following:		4
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

## Khoury College GPA Requirement

Minimum cumulative 2.000 GPA required in all CS, CY, DS, and IS courses

## Economics GPA Requirement

Grades in the following required Economics 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

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Exploring Creative Expression and Innovation
- Understanding Societies and Institutions
- 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.

## Computer Science and Economics Major Credit Requirement

Minimum of 100 semester hours is required in the major

## Program Requirement

133 total semester hours required

## Plan of Study

### Sample Plans of Study

#### FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
CS 1200		1 CS 2510 and CS 2511		5 CS 3500 and CS 3501		5 Elective		4
CS 1800 and CS 1802		5 ECON 1116		4 ECON 2315		4 Elective		4

4 Computer Science and Economics, BS

CS 2500 and CS 2501	5	IS 2000	4					
ECON 1115	4	MATH 1231, 1241, 1245, 1251, 1340, or 1341	4					
ENGW 1111	4							
	<b>19</b>		<b>17</b>			<b>9</b>		<b>8</b>
<b>Year 2</b>								
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer 1</b>	<b>Hours</b>	<b>Summer 2</b>	<b>Hours</b>	<b>Hours</b>
CS 2800	4	CS 1210	1	ECON elective 3	4	Co-op	0	
CS 3000	4	CS 3200	4	Elective	4			
ECON 2350	4	ECON 2316	4					
ECON elective 1	4	ECON 2560	4					
		ECON elective 2	4					
	<b>16</b>		<b>17</b>			<b>8</b>		<b>0</b>
<b>Year 3</b>								
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer 1</b>	<b>Hours</b>	<b>Summer 2</b>	<b>Hours</b>	<b>Hours</b>
Co-op	0	Computing and social issues requirement	4	ENGW 3302, 3308, or 3315	4	Co-op	0	
		ECON elective 4	4	Elective	4			
		Khoury Elective	4					
		Elective	4					
	<b>0</b>		<b>16</b>			<b>8</b>		<b>0</b>
<b>Year 4</b>								
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>					
Co-op	0	ECON 4692 or 4997	4					
		Information Science Course	4					
		Khoury elective	4					
		Elective	4					
	<b>0</b>		<b>16</b>					

Total Hours: 134

**FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER 1**

<b>Year 1</b>								
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer 1</b>	<b>Hours</b>	<b>Summer 2</b>	<b>Hours</b>	<b>Hours</b>
CS 1200	1	CS 2510 and CS 2511	5	CS 3500 and CS 3501	5	Elective	4	
CS 1800 and CS 1802	5	ECON 1116	4	ECON 2315	4	Elective	4	
CS 2500 and CS 2501	5	IS 2000	4					
ECON 1115	4	MATH 1231, 1241, 1245, 1251, 1340, or 1341	4					
ENGW 1111	4							
	<b>19</b>		<b>17</b>			<b>9</b>		<b>8</b>
<b>Year 2</b>								
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer 1</b>	<b>Hours</b>	<b>Summer 2</b>	<b>Hours</b>	<b>Hours</b>
CS 1210	1	Co-op	0	Co-op	0	ECON elective 2	4	
CS 2800	4					Elective	4	
CS 3000	4							
ECON 2350	4							
ECON elective 1	4							
	<b>17</b>		<b>0</b>			<b>0</b>		<b>8</b>

<b>Year 3</b>							
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer 1</b>	<b>Hours</b>	<b>Summer 2</b>	<b>Hours</b>
CS 3200		4 Co-op		0 Co-op		0 ENGW 3302, 3308, or 3315	4
ECON 2316		4				Elective	4
ECON 2560		4					
ECON elective 3		4					
		<b>16</b>		<b>0</b>		<b>0</b>	<b>8</b>
<b>Year 4</b>							
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>				
Computing and social issues		4 ECON 4692 or 4997	4				
ECON elective 4		4 Information Science Course	4				
Khoury Elective		4 Khoury elective	4				
Elective		4 Elective	4				
		<b>16</b>	<b>16</b>				

**Total Hours: 134**