

Computer Science and Cognitive Psychology, BS

The computer science and cognitive psychology combined major provides a foundation in general psychology, psychology of language, cognition, and statistics—all supplemented by an experimental laboratory course, seminar course, and psychology electives. Students who choose this program often have a general interest in human psychology or specific interests in artificial intelligence or human-computer interaction.

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/nupath/>).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	First Year Seminar	1
CS 1210	Professional Development for Khoury Co-op	1
Computer Science Fundamental Courses		
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
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500 and CS 3501	Object-Oriented Design and Lab for CS 3500	5
CS 4100	Artificial Intelligence (Integrative course)	4
CS 4500 or CS 4530	Software Development (Integrative course) Fundamentals of Software Engineering	4
IS 4300	Human Computer Interaction (Integrative course)	4
Khoury Elective Courses		
With adviser approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.		
Complete twelve credits of CS, CY, DS, or IS classes that are not already required. Choose courses within the following ranges:		12
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		

Psychology Courses

Code	Title	Hours
Required Courses		
PSYC 1101	Foundations of Psychology	4
PSYC 3464	Psychology of Language	4
PSYC 3466	Cognition	4
Statistics		
Complete the following course. Students who receive transfer credit for the Advanced Placement Statistics exam may complete the 1 SH PSYC 2315 course (requires department approval).		4-5

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PSYC 2320	Statistics in Psychological Research	
Advanced Psychology		
PSYC 3452 or PSYC 3458	Sensation and Perception Biological Psychology	4
Laboratory in Psychology		
Complete one of the following:		4
PSYC 4604	Laboratory in Learning and Motivation	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	
Seminar in Psychology		
Complete one of the following:		4
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
Psychology Electives		
Note: Courses satisfying the categories above cannot be reused.		
Complete two of the following:		8
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3450	Learning and Motivation	
PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 4512	Neuropsychology	
PSYC 4524	Cognitive Development	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4628	Laboratory in Developmental Psychology	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
PSYC 4676	Seminar in Developmental Psychology	
With prior approval, directed study research and Honors Project courses can also be counted:		
PSYC 4970	Junior/Senior Honors Project 1	
PSYC 4971	Junior/Senior Honors Project 2	
PSYC 4991	Directed Study Research	

Supporting Courses

Code	Title	Hours
Calculus		
MATH 1341	Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following:		4
AFAM 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	
ENGL 2150	Literature and Digital Diversity	
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
PHIL 1145	Technology and Human Values
SOCL 1280	The Twenty-First-Century Workplace
SOCL 2485	Environment, Technology, and Society
SOCL 4528	Computers and Society

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3307	Advanced Writing in the Sciences	
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete 32 semester hours of general electives.		32

Khoury College GPA Requirement

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

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- 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

133 total semester hours required

Plan of Study

Sample Plan of Study:

Four Years, Two Co-ops in Spring/Summer 1

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 CS 3000		4
CS 1800 and CS 1802		5 PSYC 3466		4 Elective		4 Elective		4
CS 2500 and CS 2501		5 Elective		4				
ENGW 1111		4 Elective		4				
PSYC 1101		4						
		19			17			9
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
CS 1210		1 Co-op		Co-op		Elective		4
MATH 1341		4				Elective		4
PSYC 3464		4						

Computing and social issues	4							
Khoury elective	4							
	17			0		0		8
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
CS 4500 or 4530	4	Co-op		Co-op		ENGW 3302		4
PSYC 2320	4					Elective		4
PSYC 3452 or 3458	4							
PSYC elective	4							
	16			0		0		8
Year 4								
Fall	Hours	Spring	Hours					
IS 4300	4	CS 4100	4					
PSYC lab	4	PSYC Seminar	4					
PSYC elective	4	Khoury elective	4					
Khoury elective	4	Elective	4					
	16		16					

Total Hours: 134

Four Years, Two Co-ops in Summer 2/Fall

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
CS 1200	1	CS 2510 and CS 2511	5	CS 3500 and CS 3501	5	CS 3000		4
CS 1800 and CS 1802	5	PSYC 3466	4	Elective	4	Elective		4
CS 2500 and CS 2501	5	Elective	4					
ENGW 1111	4	Elective	4					
PSYC 1101	4							
	19		17			9		8
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
MATH 1341	4	CS 1210	1	Khoury Elective	4	Co-op		
PSYC 3464	4	IS 4300	4	Elective	4			
Computing and social issues	4	PSYC 2320	4					
Khoury Elective	4	PSYC 3452 or 3458	4					
		Elective	4					
	16		17			8		0
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op		PSYC lab elective	4	ENGW 3302 or 3302	4	Co-op		
		PSYC Seminar	4	Elective	4			
		PSYC elective	4					
		PSYC elective	4					
	0		16			8		0
Year 4								
Fall	Hours	Spring	Hours					
Co-op		CS 4100	4					
		CS 4530	4					
		Khoury elective	4					

Elective	4
0	16

Total Hours: 134