Computer Science and Cognitive Psychology, BS (Boston)

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		
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 SH of CS, CY, or DS coursework at the 3000 level or higher not otherwise required in the degree.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
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
Computer Science Required Courses		
CS 2484	Principles of Human-Computer Interaction	4
CS 3000	Algorithms and Data	4
CS 3100 and CS 3101	Program Design and Implementation 2 and Lab for CS 3100	5
CS 4100	Artificial Intelligence (Integrative course)	4
CS 4530 or CS 4535	Fundamentals of Software Engineering Professional Practicum Capstone	4
Khoury Approved Electives		
With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.		
Complete 12 semester hours from within the following options:		12
CS 2500 or higher, except CS 5010		
CY 2000 or higher, except CY 4930		
DS 2500 or higher, except DS 4900		
MKTG 4606	Digital, Analytics, Technology, and Automation Research Practicum	

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 semester hour PSYC 2315 course (requires department approval):		4-5
PSYC 2320	Statistics in Psychological Research	

Advanced Psychology

PSYC 3452	Sensation and Perception	4
or PSYC 3458	Biological Psychology	

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	
PSYC 4682	Seminar in Learning and Motivation	

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 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
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	

or PHIL 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

Computer Science Writing 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		
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 cumulative 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 Plans of Study

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER FIRST HALF

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2100 and CS 2101	5	CS 3100 and CS 3101	5	CS 3000	4
CS 1800 and CS 1802	5	PSYC 3466	4	Elective	4	Elective	4
CS 2000 and CS 2001	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
CS 1210	1	Co-op	0	Co-op	0	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
PSYC 2320	4	Co-op	0	Co-op	0	ENGW 3302	4
CS 2484	4					Elective	4
PSYC 3452 or 3458	4						
PSYC elective	4						
	16		**0**		**0**		**8**

Year 4

Fall	Hours	Spring	Hours
CS 4530 or 4535	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 SECOND HALF/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2100 and CS 2101	5	CS 3100 and CS 3101	5	CS 3000	4
CS 1800 and CS 1802	5	PSYC 3466	4	Elective	4	Elective	4
CS 2000 and CS 2001	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	0
PSYC 3464	4	CS 2484	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	0	PSYC lab elective	4	ENGW 3302 or 3302	4	Co-op	0
		PSYC Seminar	4	Elective	4		
		PSYC elective	4				
		PSYC elective	4				
	0		**16**		**8**		**0**

Year 4

Fall	Hours	Spring	Hours
Co-op	0	CS 4100	4
		CS 4530 or 4535	4
		Khoury elective	4
		Elective	4
	0		**16**

Total Hours: 134