Computer Science and Health Science, BS (Boston)

The computer science and health science combined major offers a solid academic and experiential foundation integrating studies in health administration, computer science, mathematics, and statistics. This program reflects the impact of computer science in modern healthcare and is designed to prepare students for success in careers in health administration, community-based health promotion, and public health.

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 Requirements

Code	Title	Hours
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 semester hours 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 3000	Algorithms and Data	4
CS 3100 and CS 3101	Program Design and Implementation 2 and Lab for CS 3100	5
CS 3200	Introduction to Databases	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 8 semester hours from the following options:		8
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	

Health Science Requirements

Code	Title	Hours
Public Health Core		
PHTH 1260	The American Healthcare System	4
or PHTH 1261	Comparative Healthcare Systems	
PHTH 2300	Communication Skills for the Health Professions	4
or PHTH 2301	Communication Skills for the Health Professions—Global	
PHTH 2350	Community and Public Health	4
or PHTH 2351	Community and Public Health - Global	
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4120	Global Perspectives on Discrimination and Health	4

| PHTH 4202 | Principles of Epidemiology in Medicine and Public Health | 4 |
| PHTH 4540 | Health Education and Program Planning | 4 |

Supporting Courses for Health Science

Code	Title	Hours
College Overview		
Must be taken in alignment with your home college.		
CS 1200	First Year Seminar	1
or HSCI 1000	College: An Introduction	
CS 1210	Professional Development for Khoury Co-op	1
or HSCI 2000	Professional Development for Bouvé Co-op	
Ethics		
Complete one of the following:		4
BIOL 2329	Bioethics	
PHIL 1165	Moral and Social Problems in Healthcare	
Statistics		
Complete one of the following:		4-5
ECON 2350	Statistics for Economists	
ENVR 2500 and ENVR 2501 and ENVR 2502	Biostatistics and Lab for ENVR 2500 and Recitation for ENVR 2500	
MATH 3081	Probability and Statistics	
PHTH 2210	Foundations of Biostatistics	
PSYC 2320	Statistics in Psychological Research	
Science Requirement		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for Science Majors and Lab for CHEM 1161 and Recitation for CHEM 1161	5
MATH 1241	Calculus 1	4
or MATH 1341	Calculus 1 for Science and Engineering	
PSYC 1101	Foundations of Psychology	4

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 3315	Interdisciplinary Advanced Writing in the Disciplines	

Integrative Requirement

Code	Title	Hours
CS 2484	Principles of Human-Computer Interaction	4

Capstone

Code	Title	Hours
CS 4530	Fundamentals of Software Engineering	4
or CS 4535	Professional Practicum Capstone	

Required General Electives

Code	Title	Hours
Complete 20 semester hours of general electives.		20

Optional Co-op

Students can choose to complete one or two six-month co-op experiences, or none at all, during their course of study. Students must consult with their advisor regarding the 1-semester-hour prerequisite course for co-op.

Khoury College GPA Requirement

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

Health Sciences Major Requirement

A grade of C or higher is required for courses in public health core, statistics, and science requirement. Students who take College: An Introduction (HSCI 1000) and Professional Development for Bouvé Co-op (HSCI 2000) must achieve a C or higher.

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 Differences and Diversity
- Employing Ethical Reasoning
- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Interpreting Culture
- 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

132 semester hours required

Plan of Study
Sample Plans of Study

FOUR YEARS, ONE CO-OP IN SUMMER SECOND HALF/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1111 and BIOL 1112	5	BIOL 1113 and BIOL 1114	5	PHTH 2350	4	Vacation	
CS 1200	1	PHTH 1260	4	CS 3100 and CS 3101	5		
CS 1800 and CS 1802	5	CS 2100 and CS 2101	5				
ENGW 1111	4	PSYC 1101	4				
CS 2000 and CS 2001	5						
	20		**18**		**9**		**0**

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1161 and CHEM 1162 and CHEM 1163	5	CS 3000	4	General elective	4	Vacation	
CS 3200	4	PHTH 2300	4				
MATH 1341 or 1241	4	PHTH 2515	4				
Statistics course	4-5	General elective	4				
	17-18		**16**		**4**		**0**

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3302 or 3315	4	CS 1210	1	Vacation		Co-op	0
BIOL 2329 or PHIL 1165	4	PHTH 4202	4				
Khoury elective	4	PHTH 4540	4				
CS 2484	4	Khoury elective	4				
		General elective	4				
	16		**17**		**0**		**0**

Year 4

Fall	Hours	Spring	Hours
Co-op	0	CS 4530 or 4535	4
		PHTH 4120	4
		General elective	4
		General elective	4
	0		**16**

Total Hours: 133-134

FOUR YEARS, ONE CO-OP IN SPRING/SUMMER FIRST HALF

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1111 and BIOL 1112	5	BIOL 1113 and BIOL 1114	5	PHTH 2350	4	Vacation	
CS 1200	1	PHTH 1260	4	CS 3100 and CS 3101	5		
CS 2000 and CS 2001	5	PSYC 1101	4				
CS 1800 and CS 1802	5	CS 2100 and CS 2101	5				
ENGW 1111	4						
	20		**18**		**9**		**0**

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1161 and CHEM 1162 and CHEM 1163	5	CS 3000	4	General elective	4	Vacation	
CS 3200	4	PHTH 2300	4				
MATH 1341 or 1241	4	PHTH 2515	4				
Statistics course	4-5	Khoury elective	4				
	17-18		**16**		**4**		**0**

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Vacation	
ENGW 3302 or 3315	4						
BIOL 2329 or PHIL 1165	4						
General elective	4						
CS 2484	4						
	17		**0**		**0**		**0**

Year 4

Fall	Hours	Spring	Hours
PHTH 4202	4	PHTH 4120	4
PHTH 4540	4	Khoury elective	4
CS 4530 or 4535	4	General elective	4

General elective	4	General elective	4
	16		**16**

Total Hours: 133-134