

Artificial Intelligence and Speech-Language Pathology and Audiology, BS (Boston)

The Bachelor of Science in Artificial Intelligence and Speech-Language Pathology and Audiology curriculum is designed to facilitate critical thinking, information literacy, and oral and written communication skills. In addition to courses in the basic communication sciences and disorders, courses in education, allied health, computer literacy, ethics, multicultural/diversity issues, and psychology are required. Students in the major 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. The coursework covers exploratory data analysis, data manipulation in a variety of programming languages, large-scale data storage, predictive analytics, machine learning, data mining, and information visualization and presentation. These areas of study are of particular relevance in the field of speech-language pathology and audiology due to the continued development and use of assistive technology and artificial intelligence for individuals with communication disorders.

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
Overview		
Complete the following in alignment with your home college:		
CS 1200 or HLTH 1000 or INPR 1000	First Year Seminar College: An Introduction First-Year Interdisciplinary Seminar	1
CS 1210 or SLPA 2000	Professional Development for Khoury Co-op Introduction to 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	

Speech-Language Pathology and Audiology Requirements

A grade of C or higher is required in the following:

Code	Title	Hours
SLPA 1101	Bridging Minds: Introduction to Speech, Language, and Hearing Sciences	4
SLPA 1102	Language Development	4
SLPA 1103	Anatomy and Physiology of Speech and Hearing Mechanism	4
SLPA 1200	Phonetics	4
SLPA 1203	Introduction to Audiology	4
SLPA 1205	Speech and Hearing Science	4
SLPA 4219	Introduction to Aural Rehabilitation	3
SLPA 4500	Language Disorders across the Life Span	4
SLPA 4651	Speech Disorders across the Life Span	4
SLPA 5107	Clinical Procedures	4

Math and Statistics Courses

A grade of C or higher is required in the following:

Code	Title	Hours
MATH 1341	Calculus 1 for Science and Engineering	4
PHTH 2210	Foundations of Biostatistics	4

Supporting Science Courses

A grade of C or higher is required in the following:

Code	Title	Hours
BIOL 2217 and BIOL 2218	Integrated Anatomy and Physiology 1 and Lab for BIOL 2217	5
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	5

Ethics Requirement

Code	Title	Hours
PHIL 1145	Technology and Human Values	4

Integrative Requirement

Code	Title	Hours
CS 4120	Natural Language Processing	4

Writing Requirements

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4
Advanced Writing in the Disciplines		
ENGW 3302 or ENGW 3306 or ENGW 3315	Advanced Writing in the Technical Professions Advanced Writing in the Health Professions Interdisciplinary Advanced Writing in the Disciplines	4

Required General Electives

Code	Title	Hours
Complete 12 semester hours of general electives.		12

NUpath Requirements Satisfied

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

Students are responsible for using the general electives in this program to complete NUpath requirements not satisfied by required courses in this program.

Program Requirement

128 total semester hours required