

Computer Science, MSCS—Align

Master of Science in Computer Science—Align students come from a wide variety of backgrounds, with undergraduate majors including math, biology, history, engineering, and classics. The program begins with a two-semester introductory sequence, which provides the foundational knowledge for students from nontechnical backgrounds to succeed. Students have an opportunity to acquire both the knowledge needed to transition into a new career and the practical skills to build the next great app.

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 and requirements listed below unless otherwise indicated.

Align Bridge Coursework

Students are required to take all bridge courses unless otherwise determined by the program.

A grade of B or higher is required in each course.

Code	Title	Hours
<i>Fundamentals</i>		
CS 5001 and CS 5003	Intensive Foundations of Computer Science and Recitation for CS 5001	4
<i>Discrete Structures</i>		
CS 5002	Discrete Structures	4
<i>Object-Oriented Design</i>		
CS 5004 and CS 5005	Object-Oriented Design and Recitation for CS 5004	4
<i>Additional ALIGN courses</i>		
CS 5008 and CS 5009	Data Structures, Algorithms, and Their Applications within Computer Systems and Recitation for CS 5008	4

Core Requirements

Code	Title	Hours
Algorithms		
CS 5800	Algorithms	4

Breadth Areas

Code	Title	Hours
Select three courses from two of the three following breadth areas:		12
<i>Systems and Software</i>		
CS 5400	Principles of Programming Language	
CS 5500	Foundations of Software Engineering	
CS 5520	Mobile Application Development	
CS 5600	Computer Systems	
CS 5610	Web Development	
CS 5700	Fundamentals of Computer Networking	
CS 5850	Building Game Engines	
CS 6410	Compilers	
CS 6510	Advanced Software Development	
CS 6620	Fundamentals of Cloud Computing	
CS 6650	Building Scalable Distributed Systems	

CS 6710	Wireless Network
<i>Theory and Security</i>	
CS 6760	Privacy, Security, and Usability
CS 7805	Complexity Theory
CY 5770	Software Vulnerabilities and Security
CY 6740	Network Security
<i>Artificial Intelligence and Data Science</i>	
CS 5100	Foundations of Artificial Intelligence
CS 5150	Game Artificial Intelligence
CS 5200	Database Management Systems
CS 5330	Pattern Recognition and Computer Vision
CS 6120	Natural Language Processing
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6240	Large-Scale Parallel Data Processing
CS 7140	Advanced Machine Learning

Electives

Code	Title	Hours
Complete 12 semester hours from the following: ¹		12
CS 5097	Mixed Reality	
CS 5100 to CS 7980		
CS 7990	Thesis	
CS 8674	Master's Project	
CS 8982	Readings	
CY 5010	Cybersecurity Principles and Practices	
CY 5130	Computer System Security	
CY 5210	Information System Forensics	
DS 5110	Introduction to Data Management and Processing	
DS 5230	Unsupervised Machine Learning and Data Mining	

¹ Specific electives such as CS 7980 Research Capstone, CS 7990 Thesis, or CS 8674 Master's Project may be required at certain Northeastern campuses. Students should consult with their program advisor when developing a plan of study.

Program Credit/GPA Requirements

36-44 total semester hours required

Minimum 3.000 GPA required