Northeastern University’s Master of Science in Computer Science is designed to prepare students for a variety of careers in computer science. The program combines both computing and important application domains—enabling you to increase your broad-based knowledge in the field while focusing on one curricular concentration selected from a range of options including artificial intelligence, computer human interface, graphics, programming languages, software engineering, database management, networks, theory, game design, systems, and information security.

Program Objectives
- Exhibit proficiency in the design and maintenance of large application software
- Develop the ability to maintain network infrastructure
- Build familiarity with basic algorithms and theoretical computer science principles
- Demonstrate ability in advanced programming and software design materials

Program Requirements
Complete all courses and requirements listed below unless otherwise indicated.

Required Core Courses
An average GPA of 3.000 or higher is required in the three core courses:

Programming
CS 5010 Programming Design Paradigm 4

Development
CS 5500 Managing Software Development 4
or CS 5600 Computer Systems

Algorithms
CS 5800 Algorithms 4

Electives
Complete 8 semester hours from one of the specialization areas lists below.
Complete 4 semester hours from the following: 4
CS 5100 to CS 5850
CS 6110 to CS 6810
CS 8674 Master’s Project
CS 8982 Readings

Specializations
Complete 8 semester hours from the following:

Artificial Intelligence
CS 5100 Foundations of Artificial Intelligence
CS 5335 Robotic Science and Systems
CS 6110 Knowledge-Based Systems
CS 6120 Natural Language Processing
CS 6140 Machine Learning
CS 7140 Advanced Machine Learning
CS 7170 Seminar in Artificial Intelligence

Computer-Human Interface
CS 5340 Computer/Human Interaction
CS 5350 Applied Geometric Representation and Computation
CS 6350 Empirical Research Methods
CS 7140 Advanced Machine Learning

Database Management
CS 5200 Database Management Systems
CS 6140 Machine Learning
CS 6200 Information Retrieval
CS 6220 Data Mining Techniques
CS 6240 Parallel Data Processing in MapReduce
CS 7270 Seminar in Database Systems
CS 7280 Special Topics in Database Management

Graphics
CS 5310 Computer Graphics
CS 5320 Digital Image Processing
CS 5330 Pattern Recognition and Computer Vision
CS 5520 Mobile Application Development
CS 6310 Computational Imaging
CS 7370 Seminar in Graphics/Image Processing
CS 7380 Special Topics in Graphics/Image Processing

Information Security
CS 5770 Software Vulnerabilities and Security
CS 6540 Foundations of Formal Methods and Software Analysis
CS 6740 Network Security
CS 6750 Cryptography and Communications Security
CS 6760 Privacy, Security, and Usability
CS 7580 Special Topics in Software Engineering

Networks
CS 5700 Fundamentals of Computer Networking
CS 5750 Social Computing
CS 6710 Wireless Network
CS 6740 Network Security
CS 6750 Cryptography and Communications Security
CS 6760 Privacy, Security, and Usability
CS 7770 Seminar in Computer Networks
CS 7775 Seminar in Computer Security
CS 7780 Special Topics in Networks

Programming Languages
CS 5400 Principles of Programming Language
CS 6410 Compilers
CS 6412 Semantics of Programming Language
CS 6510 Advanced Software Development
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**Program Credit/GPA Requirements**

32 total semester hours required
Minimum 3.000 GPA required