The program combines concepts and skills from computer science, behavioral and social sciences, and system design into an integrated curriculum that is people centered. The course work covers information architecture; information system design and development; programming and software design; database design; systems and networks; information resource management; social informatics; quantitative and qualitative research methods; and human computer interaction.

Although there is no sharp boundary between computer science and information science, it may be said that CS is concerned with building the software and services infrastructure used by people and organizations worldwide, whereas IS is concerned with the information and software needs of a particular business, healthcare provider, government agency, or nonprofit.

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.

University-Wide Requirements
All undergraduate students are required to complete the University-Wide Requirements (http://catalog.northeastern.edu/undergraduate/university-academics/university-wide-requirements).

NUpath Requirements
All undergraduate students are required to complete the NUpath Requirements (http://catalog.northeastern.edu/undergraduate/university-academics/nupath).

Common Computer and Information Science Curriculum

Computer Science Overview

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CS 1200</td>
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<td>1</td>
</tr>
<tr>
<td>CS 1210</td>
<td>Computer Science/Information Science 1</td>
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Computer Science Fundamental Courses
A grade of C– is required:

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<th>Title</th>
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<tr>
<td>CS 1800</td>
<td>Discrete Structures</td>
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<tr>
<td>and CS 1802 or CS 1801</td>
<td>Seminar for CS 1800</td>
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<tr>
<td>CS 2500</td>
<td>Fundamentals of Computer Science 1</td>
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</tr>
<tr>
<td>and CS 2501 or CS 2510</td>
<td>Lab for CS 2500</td>
<td>5</td>
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<tr>
<td>CS 3500</td>
<td>Object-Oriented Design</td>
<td>4</td>
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<tr>
<td>CS 3650</td>
<td>Computer Systems</td>
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<tr>
<td>CS 3700</td>
<td>Networks and Distributed Systems</td>
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<td>Algorithms and Data</td>
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Computer Science Required Courses

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<tr>
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<tr>
<td>INSH 2102</td>
<td>Bostonography: The City through Data, Texts, Maps, and Networks</td>
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<tr>
<td>SOCL 3485</td>
<td>Environment, Technology, and Society</td>
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<tr>
<td>SOCL 4528</td>
<td>Computers and Society</td>
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<tr>
<td>ANTH 3418</td>
<td>Wired/Unwired: Cybercultures and Technopolitics</td>
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<tr>
<td>IA 5240</td>
<td>Cyberlaw: Privacy, Ethics, and Digital Rights</td>
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Information Science Foundations

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<tbody>
<tr>
<td>CS 3200</td>
<td>Database Design</td>
<td>4</td>
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<tr>
<td>IS 2000</td>
<td>Principles of Information Science</td>
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<tr>
<td>IS 3500</td>
<td>Information System Design and Development</td>
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Human Computer Interaction

<table>
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<th>Credits</th>
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<tr>
<td>IS 4300</td>
<td>Human Computer Interaction</td>
<td>4</td>
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<tr>
<td>PSYC 1101</td>
<td>Foundations of Psychology</td>
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Research and Data Analysis

<table>
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<th>Credits</th>
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<tr>
<td>PSYC 2320</td>
<td>Statistics in Psychological Research</td>
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<tr>
<td>or ECON 2350</td>
<td>Statistics</td>
<td>4</td>
</tr>
<tr>
<td>IS 4800</td>
<td>Empirical Research Methods</td>
<td>4</td>
</tr>
<tr>
<td>IS 4900</td>
<td>Information Science Senior Project</td>
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Information Science Concentrations
Complete one of the following concentrations:

- Information Systems Management (p. 2)
- Human Computer Interaction (p. 2)
- Research and Data Analysis (p. 2)

Computer Science or Information Science Electives
Complete two CS or IS electives that are not already required from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
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<td>CS 2500 or higher, except CS 5010</td>
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<td></td>
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<tr>
<td>IS 2000 or higher, except IS 4900</td>
<td>5</td>
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<tr>
<td>DS 2000 or higher, except DS 4900</td>
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Computer Science English Requirement

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<tbody>
<tr>
<td>ENGW 1111</td>
<td>First-Year Writing</td>
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Advanced Writing in the Disciplines

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<th>Credits</th>
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<tr>
<td>ENGW 3302</td>
<td>Advanced Writing in the Technical Professions</td>
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</tr>
<tr>
<td>or ENGW 3315</td>
<td>Interdisciplinary Advanced Writing in the Disciplines</td>
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Required General Electives
Complete nine general electives.

Major GPA Requirement
Minimum 2.000 GPA required in all CS and IS courses
Information Science Major Credit Requirement
Complete 73 semester hours in CS and IS for the major.

Program Requirement
132 total semester hours required

Concentrations

**CONCENTRATION IN INFORMATION SYSTEMS MANAGEMENT**
Complete three of the following:

- IS 4500  Software Quality Assurance
- IS 4600  Software Project Management
- CS 4500  Software Development
- CS 4550  Web Development
- MISM 4501  Business Systems Integration
- ORGB 3201  Organizational Behavior
  or ORGB 3209  Organizational Behavior

**CONCENTRATION IN HUMAN COMPUTER INTERACTION**
Complete three of the following:

- PSYC 3466  Cognition
- CS 4100  Artificial Intelligence
- CS 4500  Software Development
- CS 4520  Mobile Application Development
- CS 4550  Web Development
- CS 6120  Natural Language Processing
- DS 4200  Information Presentation and Visualization

**CONCENTRATION IN RESEARCH AND DATA ANALYSIS**
Complete three of the following:

- IS 4200  Information Retrieval
- IS 4700  Social Information Systems
- CS 4100  Artificial Intelligence
- CS 4500  Software Development
- CS 6120  Natural Language Processing
- DS 4000 or higher

Plan of Study

Sample Patterns:
Four Years, Two Co-ops in Summer 2/Fall

**Year 1**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
<th>Summer 1</th>
<th>Hours</th>
<th>Summer 2</th>
<th>Hours</th>
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<tbody>
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Year 2

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Year 3

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Five Years, Three Co-ops in Summer 2/Fall

**Year 1**

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<th>Hours</th>
<th>Summer 1</th>
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Year 2

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Year 3

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### Year 4

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### Year 5

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<td>Computing and social issues</td>
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Total Hours: 130