

# Information Systems, MSIS (Vancouver)

We offer cutting-edge expertise in a variety of courses that combine technological advances and business practices. We stress creative and inventive approaches to problem solving, which necessitates empowering students so that they can take charge of their own software projects to become originally productive. Our information systems program (<https://coe.northeastern.edu/academics-experiential-learning/academic-departments/mgen/ms-insy/>) is as much an art as a science. It bypasses mechanical learning and highlights the value and excitement of engineering thinking that gets things done efficiently as well as imaginatively. We balance theory and practice, on the premise that they are always intertwined and interdependent.

We seek to provide a basic foundation for our students and then seek to push them to new heights to advance their information technology skills in a way that keeps up and, better yet, exceeds the necessarily fast pace of this progressive field. It is not for us just a question of not being left behind; we strive to be at the forefront of software innovation in an effort to transform contemporary society even more radically than technology has already done—to take gigantic strides in business, medicine, education, and security.

The program offers a wide range of courses that reflect current and future industry trends:

- Cryptocurrency and Smart Contract Engineering
- Engineering of Big-Data Systems
- Business Intelligence and Data Analytics
- Cyber-Security Engineering and Development
- Digital Business
- Full-Stack Software Engineering
- User Experience Design
- Data Science and Machine Learning Systems Engineering

## Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

### Core Requirements

Code	Title	Hours
INFO 5100 and INFO 5101	Application Engineering and Development and Lab for INFO 5100	4

### Project or Thesis Option

Complete one of the following options:

#### PROJECT OPTION

Code	Title	Hours
INFO 7976	Directed Study	4

#### THESIS OPTION

Code	Title	Hours
INFO 7990	Thesis	8

Complete the following course twice:

In addition to completing the thesis course, students must successfully complete the thesis submission process, including securing Committee and Graduate School of Engineering signatures and submission of an electronic copy of their MS Thesis to ProQuest.

### Concentration in General Information Systems

Code	Title	Hours
CSYE 6225	Network Structures and Cloud Computing (Big Data Systems and Analytics)	
CSYE 7280	User Experience Design and Testing	
DAMG 7245	Big-Data Systems and Intelligence Analytics	
INFO 6150	Web Design and User Experience Engineering	

Complete 16 semester hours from any of the courses listed below:

INFO 6245	Planning and Managing Information Systems Development
INFO 6350	Smartphones-Based Web Development
INFO 7250	Engineering of Big-Data Systems
INFO 7375	Special Topics in Artificial Intelligence Engineering and Applications
INFO 7390	Advances in Data Sciences and Architecture
INFO 7500	Cryptocurrency and Smart Contract Engineering
INFO 7510	Smart Contract Application Engineering and Development
INFO 7520	Engineering of Advanced Cryptocurrency Systems
INFO 7525	Regulatory Aspects of Smart Contract Automation
INFO 7535	Digital Smart Contracts Product Innovations
INFO 7610	Special Topics in Natural Language Engineering Methods and Tools

## Electives

Code	Title	Hours
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Complete the remaining minimum program required semester hours from the following:

CSYE 6225	Network Structures and Cloud Computing	
CSYE 7105	High-Performance Parallel Machine Learning and AI	
CSYE 7280	User Experience Design and Testing	
CSYE 7374	Special Topics in Computer Systems Engineering	
DAMG 6105	Data Science Engineering with Python	
DAMG 6210	Data Management and Database Design	
DAMG 7245	Big-Data Systems and Intelligence Analytics	
DAMG 7275	Advanced Database Management Systems	
DAMG 7350	Systems and Cybersecurity Fundamentals	
DAMG 7370	Designing Advanced Data Architectures for Business Intelligence	
INFO 6105	Data Science Engineering Methods and Tools	
INFO 6150	Web Design and User Experience Engineering	
INFO 6205	Program Structure and Algorithms	
INFO 6215	Business Analysis and Information Engineering	
INFO 6245	Planning and Managing Information Systems Development	
INFO 6250 and INFO 6251	Web Development Tools and Methods and Lab for INFO 6250	
INFO 6255	Software Quality Control and Management	
INFO 6350	Smartphones-Based Web Development	
INFO 7110	High-Performance Coding for Fintech	
INFO 7225	Accounting and Budgetary Systems for Engineers	
INFO 7245	Agile Software Development	
INFO 7250	Engineering of Big-Data Systems	
INFO 7255	Advanced Big-Data Applications and Indexing Techniques	
INFO 7285	Organizational Change and IT	
INFO 7375	Special Topics in Artificial Intelligence Engineering and Applications	
INFO 7385	Managerial Communications for Engineers	
INFO 7390	Advances in Data Sciences and Architecture	
INFO 7500	Cryptocurrency and Smart Contract Engineering	
INFO 7510	Smart Contract Application Engineering and Development	
INFO 7520	Engineering of Advanced Cryptocurrency Systems	
INFO 7525	Regulatory Aspects of Smart Contract Automation	
INFO 7535	Digital Smart Contracts Product Innovations	
INFO 7610	Special Topics in Natural Language Engineering Methods and Tools	

## Optional Co-op Experience

Code	Title	Hours
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Complete the following. Students must complete ENCP 6000 to qualify for co-op experience:

ENCP 6000	Career Management for Engineers	1
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### **Program Credit/GPA Requirements**

32 total semester hours required (33 with optional co-op)

Minimum 3.000 GPA required