NORTHERN ILLINOIS UNIVERSITY | COLLEGE OF LIBERAL ARTS AND SCIENCES

Computer Science

Our computer science degree gives you the skills you need to keep pace in an ever-changing industry. If you're interested in high-tech, business or research, our introductory and advanced courses in a variety of core and specialty areas prepare you for a technology-rich future. And we offer courses for non-majors that support interdisciplinary career studies. You also have the option of making computer science your minor.

Degree Offerings

Our curriculum for the major and the minor represents an effective balance between theory and practice. Most courses involve substantial programming or design assignments.

Three emphases offered within the major:

- **Emphasis I,** Software Development: Concentrates on Computer Science classes, with only minimal math requirements and no business course requirements.
- **Emphasis II,** Enterprise Software: Requires three courses chosen from accountancy, finance, management and marketing.
- **Emphasis III,** Computational Software: Combines the study of computer science with a set of advanced courses in applied mathematics and statistics.

Mobile Device Programming

We have partnered with Lextech Global Services to offer a series of courses that teaches skills in one of the hottest new areas of computer programming. The five-course program—with one course devoted to each of the three smartphones (iOS, Android and Microsoft) and two comprehensive courses that cut across all devices—is offered as an undergraduate certificate.

"I've been at International for five years now as an IMS/DB2 system programmer and I love it. I can't tell you how much my mainframe experience at NIU has helped me in my career. We actually have four system programmers on my team that are NIU alumni!"

– Michael Pry, May 2003 graduate
NAVISTAR INTERNATIONAL

Engaged Learning

Internships: Traditional internships most often occur in the summer, but if circumstances permit, may be taken in fall and spring semesters.

Our invitation-only Research and Development Internship is designed to provide year-round internship employment, and you'll be working in an NIU office during the spring and fall semesters.

Science, Engineering, Technology Floor: This residence hall provides you with social as well as academic interaction.

The Student Chapter of the Association for Computing Machinery (ACM): ACM hosts a series of events including "meet-the-firm" opportunities, visitations to industrial computing facilities and speakers from national high-tech companies. The chapter also offers tutoring and hosts résumé writing clinics and programs that focus on internship and interviewing opportunities.

The department also holds one or more campus colloquiums featuring nationally recognized researchers each semester to keep you up to date with the latest advancements in computer science.

NORTHERN ILLINOIS UNIVERSITY
Department of Computer Science
College of Liberal Arts and Sciences

COMPUTER SCIENCE AT NORTHERN ILLINOIS UNIVERSITY

Degree Requirements

We offer a program leading to the B.S. degree in computer science. You must choose an emphasis in software development, enterprise software or computational software. Computer Science is a limited admission program which means you will begin as a pre-computer science major and must fulfill additional requirements. For more information about the process, you can visit go.niu.edu/CSCImajor.

Emphasis 1: Software Development

Total Credit Hours (54-63)

Requirements in Department (45–48)

CSCI 240	Computer Programming in C++	4
CSCI 241	Intermediate Programming	4
CSCI 330	UNIX and Network Programming	4
CSCI 340	Data Structures and Algorithm Analysis	4
CSCI 360	Computer Programming in Assembler Language	4
CSCI 463	Computer Architecture and Systems Organization	4
CSCI 466	Databases	4
CSCI 467	Introduction to Software Engineering	4
CSCI 480	Principles of Operating Systems	4

One additional computer science course numbered above CSCI 300. Credits: 3-4

Two additional computer science courses numbered CSCI 390 or above. Credits: 6-8

Requirements outside Department (9-15)

MATH 206	Introductory Discrete Mathematics	3
MATH 211	Calculus for Business and Social Science	3
or MATH 229	Calculus I	4
and MATH 230	Calculus II	4
STAT 200	Elementary Statistics	4
or STAT 300	Introduction to Probability and Statistics	3

Emphasis 2: Enterprise Software

Total Credit Hours (64-75)

Requirements in Department (46–48)

CSCI 240	Computer Programming in C++	4
CSCI 241	Intermediate Programming	4
CSCI 330	UNIX and Network Programming	4
CSCI 340	Data Structures and Algorithm Analysis	4
CSCI 360	Computer Programming in Assembler Language	4
CSCI 463	Computer Architecture and Systems Organization	4
CSCI 465	Enterprise Application Environments	4
CSCI 466	Databases	4
CSCI 467	Introduction to Software Engineering	4
CSCI 480	Principles of Operating Systems	4

One additional computer science course numbered above CSCI 300. Credits: 3-4

One additional computer science course numbered CSCI 390 or above. Credits: 3-4

Requirements outside Department (18–27)

ACCY 288	Fundamentals of Accounting	3
or ACCY 206	Introductory Financial Accounting	3
and ACCY 207	Introductory Cost Management	3
MATH 206	Introductory Discrete Mathematics	3
MATH 211	Calculus for Business and Social Science	3
or MATH 229	Calculus I	4
or MATH 230	Calculus II	4
STAT 200	Elementary Statistics	4
or STAT 300	Introduction to Probability and Statistics	3

Two of the following (6)

FINA 320	Principles of Finance	3
MGMT 320	Foundations of Business and Entrepreneurship	3
MGMT 327	Creativity, Innovation, and Entrepreneurship	3*
MGMT 333	Principles of Management	3
MKTG 310	Principles of Marketing	3

Emphasis 3: Computational Software**

Total Credit Hours (77-80)

Requirements in Department (45–47)

CSCI 240	Computer Programming in C++	4
CSCI 241	Intermediate Programming	4
CSCI 330	UNIX and Network Programming	4
CSCI 340	Data Structures and Algorithm Analysis	4
CSCI 360	Computer Programming in Assembler Language	4
CSCI 462	Foundations of Computer Science	3
CSCI 463	Computer Architecture and Systems Organization	4
CSCI 466	Databases	4
CSCI 467	Introduction to Software Engineering	4
CSCI 480	Principles of Operating Systems	4

One additional computer science course numbered above CSCI 300. Credits: 3-4

One additional computer science course numbered CSCI 390 or above. Credits: 3-4

Requirements outside Department (9-15)

MATH 206	Introductory Discrete Mathematics	3
MATH 229	Calculus I	4
and MATH 230	Calculus II	4
and MATH 232	Calculus III	4
MATH 240	Linear Algebra and Applications	4
PHYS 253	Fundamentals of Physics I: Mechanics	4*
STAT 300	Introduction to Probability and Statistics	3

Two of the following (6-7)

MATH 434	Numerical Linear Algebra	3
MATH 435	Numerical Analysis	3
MATH 444	Linear Programming and Network Flows	3
STAT 435	Regression Analysis	3

**Available for general education credit.*
***Fulfills requirements for a minor in math.*

Northern Illinois University

Contact Information

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go.niu.edu/cs

What can I do with this degree?

With your degree in computer science, you can find employment in business, high-tech industries across the United States, and research organizations. Examples of career paths include:

Business Analyst
Business Application Developer
Business Intelligence Specialist
Chief Information Officer
Data Scientist
Database Analyst
IT Auditor
IT Consultant
IT Risk Advisor
Product Developer
Project Manager
Security Analyst
Security Engineer
Software Developer/Programmer
Software Engineer
Systems Analyst
Systems Integration Consultant
Technical Sales Manager
Web Developer