Computer Science

at Benedictine University

Why study computer science at Benedictine?

You can develop a strong foundation in computer science coupled with an understanding of its application to mathematics, science or business through a core of 14 required courses. You will also choose electives that allow you to concentrate on the basic study of the theory and applications of computers, scientific and technical applications, or applications for the business programmer or systems analyst. Our program is unique in that it offers three optional concentrations in Computer Systems and Algorithms, Data Analytics, and E-commerce Technology. These concentrations leverage faculty's industry experience to bring students top-notch instruction in the latest technological innovations and trends, and help to provide our students with a competitive advantage in today's workforce. A team-oriented, software engineering project caps off your program.

You will build a solid foundation in problem-solving, algorithm development, data structures, programming and computer organization, as well as strong oral and written communication skills vital to your career. In addition to the University's general education requirements, which develop the liberal education of all students, you will complete at least 44 semester credit hours in computer science, one semester of a computational course and one semester of discrete mathematics.

What technology resources are available?

The Department of Mathematical and Computational Sciences is part of the College of Science and is located in the Birck Hall of Science. The department maintains the Computer Research Laboratory dedicated exclusively for students in the major. It provides a comfortable atmosphere in which to congregate and work on software and/or research projects. Software development is accomplished through Java, Python and the Microsoft Visual Studio, which includes Visual C++, Visual C# and Visual Basic. The College of Science operates a multiprocessor Linux cluster which is used for research in all of the sciences. In addition, Benedictine University provides access to more than 200 personal computers across campus. These computers use the Microsoft Windows 7 operating system and run Microsoft Office as the standard productivity tool.

What careers are available with a degree in Computer Science?

Your knowledge of computer technology and its applications will make a career in government, business, industry and education available. Application software development, software engineer, systems software development, network administration, database management and consulting are just a few of your possible employment opportunities. Benedictine Computer Science graduates have a proven record of success. Many of our graduates are selected by their employers to pursue a master's degree in computer science. Others go on immediately to graduate school in computer science or related areas.

How do you gain experience in computer science?

You can participate in activities that complement your field of study. Projects, research and assisting in the computer labs can provide you with experience in computer science. You can acquire valuable experiences off campus through part-time jobs and internships at places such as Navistar, Argonne National Laboratory and other local companies. Recent graduates have obtained their first job at their internship site. Elective courses can be used to complete a minor or second major in mathematics, accounting, business or one of the natural or social sciences. Courses in accounting and managerial finance are also recommended to add to your business knowledge.

Recommended Program

Bachelor of Science in Computer Science

FRESHMAN

Introduction to Computing	2
Python Programming Lab	2
Writing Colloquium	3
Computational course	3
Historical (QHT) course	3
Physical Scientific (QPS) course	3
	16

Computer Programming	4
Religions/Theological (QRT) course	3
Research Writing	3
Social Scientific II: Political, Global and Economic Systems (QPE)	3
Life Scientific (QLS) course	3
	16

SOPHOMORE

Data Structures and Algorithms I	3
Introduction to Computer Systems	3
Discrete Mathematics	4
Basic Speech	3
Catholic and Benedictine Intellectual Traditions (IDS 201)	3
	16

Web-based Applications Development	3
Data Structures and Algorithms II	3
Object-Oriented Design and Programming	3
Philosophical (QPL) course	3
Electives	3
	15

JUNIOR

Computer Science elective	3
Technical Communications	3
Artistic and Creative (QCA) course	3
Electives	6
	15

Database Management Systems	3
Computer Science elective	3
Literary and Rhetorical (QLR) course	3
Human Dignity and the Common Good (IDS 301)	3
Elective	3
	15

SENIOR

Software Engineering	3
Computer Science elective	3
Social Scientific I: Individuals, Organizations and Societies (QIO) course	3
Electives	6
	15

Capstone Project	3
Electives	12
	15

Elective Offerings in Computer Science

- Advanced Web Application Development
- Algorithm Design and Analysis
- Artificial Intelligence
- Big Data
- Computer Networks Practicum
- Computer Networks and Data Communications
- Data Mining
- Enterprise Architecture
- Formal Language and Automata
- Machine Learning
- Mobile Commerce
- Operating Systems
- Operating Systems Practicum
- Theory of Programming Languages
- Programming Languages Practicum
- Selected Topics

You may choose a minor in Computer Science by taking a minimum of 21 semester credit hours.