

# Computer Science

## at Benedictine University

### Why study computer science at Benedictine?

You can acquire a solid foundation in computer science coupled with an understanding of and experience in its application to mathematics, science or business in a common core of six 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.

You will develop a solid foundation in problem solving, algorithm development, data structures, programming and computer organization as well as the strong oral and written communication skills vital to your career. In addition to the University's course requirements that develop the liberal education of all students, you will complete at least 38 credit-hours in computer science, two semesters of computational courses and one semester of discrete mathematics.

### Technology Resources

The Department of Computer Science and Information Systems is part of the College of Science and is located in the Birck Hall of Science. Computer labs across the campus provide a network of more than 125 personal computers using the Microsoft Windows XP operating system. The department maintains the Computer Research Laboratory consisting of eight dual-bootable personal computers and a multi-processor Linux cluster, plus file and web servers. Program development is accomplished through Java and the Microsoft Visual Studio, which includes Visual C++, Visual C# and Visual Basic. Microsoft Office XP is the standard office suite. All students are eligible for on-campus network accounts and e-mail accounts, which are accessible from off-campus.

### What careers are available with a computer science degree?

Your knowledge of computer technology and its applications will make careers in government, business, industry and education available. Research, data processing, software development, sales and management 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.

### Gaining Experience

You will have the opportunity to be involved in activities that complement your field of study. Projects, research and assisting in the computer labs can provide you with experience in computer science on campus. 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

Writing Colloquium	3
Computational Course	3
Introduction to Computer Science	2
Visual Basic Laboratory	2
ANTH/PLSC core elective	3
Physical Science core elective	3
	<b>16</b>

Research Writing	3
Computer Programming	4
Computational Course	3
Business/Economics core elective	3
Life Science core elective	3
	<b>16</b>

### JUNIOR

Computer Science elective	3
Religion core elective	3
Fine Arts/Music core elective	3
Cultural Heritage (HUMN 240)	3
Elective	3
	<b>15</b>

Database Management Systems	3
Computer Science Elective	3
Literature/Foreign Language Core	3
Cultural Heritage (HUMN 250)	3
Elective	3
	<b>15</b>

#### Elective Offerings in Computer Science

- Operating Systems
- Web Application Development
- Selected Topics
- Algorithm Design and Analysis
- Artificial Intelligence
- Theory of Programming Languages
- Computer Graphics
- Numerical Analysis
- Formal Languages and Automata
- Computer Networks and Data Communications
- Operating Systems Practicum
- Database Management Systems Practicum

- Computer Networks Practicum
- Programming Languages Practicum
- Numerical Analysis Practicum

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

### SOPHOMORE

Speech Communication	3
Data Structures and Algorithms I	3
Introduction to Computer Systems	3
Discrete Mathematics	4
Cultural Heritage (HUMN 220)	3
	<b>16</b>

Data Structures and Algorithms II	3
Object-Oriented Design and Programming	3
Philosophy core elective	3
Cultural Heritage (HUMN 230)	3
Elective	3
	<b>15</b>

### SENIOR

Software Engineering	3
Computer Science elective	3
Psychology/Sociology core elective	3
Electives	6
	<b>15</b>

Capstone Project	3
Electives	12
	<b>15</b>