

# COMPUTER SCIENCE

---

## PROGRAM OVERVIEW FOR EMPLOYERS

The goals of cooperative education for computer science students include the application of theory to real-world situations and the opportunity to work with others in a professional environment. Computer Science students show special interest and capabilities in areas requiring analytical abilities and problem solving skills. The requirements of the program prepare students for software development along with communication skills needed for team projects.

### Degree(s) Awarded

Bachelor of Science (5 year)  
Master of Science  
Combined BS/MS Degree

### Enrollment

Approximately 700 BS students; approximately 40 BS/MS students; approximately 190 MS students.

### Cooperative Education Component

Students are required to complete four co-op work assignments. Co-op students are able to work 3 or 6 months at a time.

### Salary Information (Avg/Range)

Co-op:	\$17.00	\$8.00 - \$38.00
BS:	\$62,400	\$40,000 - \$85,000
BS/MS:	\$78,800	\$70,000 - \$96,000

### Equipment & Facilities

Well over 100 workstations and servers. Linux operating systems environment. PC lab, MAC lab, and specialized labs in AI, Database, Vision and Security, Pattern Recognition, and Graphics.

### Accreditation

The BS degree is nationally accredited by the Computing Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone (410) 347-7700.

### Student Skills & Capabilities

- The CS Department emphasizes problem solving and the Object-Oriented paradigm, both in analysis and design (understanding the problem and crafting a suitable solution) as well as in implementation (writing code and documentation) and testing. Team and cooperative efforts are encouraged.
- Prior to starting the initial co-op work block, students have completed four quarters of problem solving and Object-Oriented design using three different programming languages (currently, Python, Java and C++). They have also completed two courses in Professional Communications and Software Engineering.
- After completing their 2<sup>nd</sup> or 3<sup>rd</sup> co-op: Students are capable of assisting in feasibility studies, analysis and design. They have a strong programming background and have developed skills in abstract and formal reasoning and are able to adapt to new concepts in the computer field. Students have also gained adequate self assurance and knowledge to competently carry out administrative duties such as training, coordinating, scheduling, project monitoring and making presentations.

# Computer Science

## Course Sequence BS degree

### First and Second Years:

Problem-Based Introduction to Computer Science  
Data Structures for Problem Solving  
Object-Oriented Programming  
Project-Based Calculus I, II, III  
University Physics I, II, III or  
General & Analytical Chemistry I, II, III & Labs or  
General Biology I, II, III & Labs  
Software Engineering  
Computer Organization  
Discrete Mathematics I, II  
Probability  
Professional Communications  
Writing and Arts of Expression  
FYE/Wellness  
Free Electives & Liberal Arts

### Selected Upper Division Electives:

Graphics  
Computer Graphics 1  
Computer Graphics 2  
Computer Animation – Algorithms & Techniques

Data Management  
Database Concepts  
Database System Implementation  
Secure Database Systems  
Introduction to Data Mining

Languages and Tools  
XML – Architecture, Tools & Techniques  
Paradigms and Programming Skills  
Language Processors  
Programming Language Theory  
Compiler Construction  
Language Based Security

Distributed Systems  
Parallel Computing 1  
Parallel Computing 2  
Data Communications & Networks 2  
Data Communications & Networks 3  
Ad-Hoc Networks

Architecture and OS  
Systems Programming 1  
Systems Programming 2  
Computer Architecture  
Operating Systems II  
Distributed Operating Systems 1  
Distributed Operating Systems 2

Theory  
Complexity & Computability  
Cryptography  
Analysis of Algorithms  
Computability  
Complexity  
Cryptography 2  
Theory of Computer Algorithms  
Xtreme Theory

### Third, Fourth, Fifth Years:

Introduction to CS Theory  
Operating Systems I  
Data Communications and Networks I  
Programming Language Concepts  
Computer Science Related Electives  
Computer Science Electives  
Related Electives or Minor  
Liberal Arts  
Science Electives  
Free Electives  
Cooperative Education (4 quarters)

Computer Vision  
Introduction to Computer Vision  
Biologically Inspired Intelligent Systems  
Advanced Computer Vision

Intelligent Systems  
Artificial Intelligence  
Artificial Intelligence for Interactive Env.  
Neural Networks and Machine Learning  
Knowledge Based Systems  
Genetic Algorithms  
Pattern Recognition

Social and Professional Issues/Others  
Privacy and Security  
Honors Seminar  
Independent Study  
Seminars on Current Topics

Other opportunities include selected courses taken from: graduate Computer Science offerings, Software Eng, and Computer Eng.

### Selected Employers of Computer Science Co-op and Graduating Students:

America Online, Apple Inc, Blackbaud, CA Inc, Carestream Health, Genius.com Inc, Google, Harris Corp, IBM, Innovative Solutions, Intel, Lockheed Martin, Microsoft, Minitab Inc, Moog Inc, Mozilla, National Security Agency, NVIDIA Corp, Ortho-Clinical Diagnostics, Paetec Communications, Paychex, Railcomm Inc, RightNow Technologies, Rochester Software Associates, SPARTA Inc., dba Cobham, Thomson Reuters, Vicarious Visions, Vicor Corp, Webster Financial Corp, Zoran Corp.

### Contact Us:

We appreciate your interest in hiring RIT co-op, graduating students or alumni. We will make every effort to make your recruiting endeavor a success. Call our office and ask to speak with Kristine Stehler, the program coordinator who works with the Computer Science program. For your convenience, you can access information and services through our web site at <http://www.rit.edu/recruit>.

### Kristine Stehler, Program Coordinator

Office of Cooperative Education and Career Services  
RIT . Bausch & Lomb Center . 57 Lomb Memorial Drive . Rochester NY 14623-5603  
585.475.5468; kwsoce@rit.edu