

# COMPUTER SCIENCE

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## 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 175 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: \$17.17	\$8.00 - \$40.00
BS: \$60,800	\$45,000 - \$90,000
BS/MS: \$70,000	\$45,000 - \$86,000

### Equipment & Facilities

Over 200 SUN workstations and servers. UNIX operating systems environment. PC lab, MAC lab, and specialized labs in AI, Database, Vision and Security, Pattern Recognition, and Virtual Theater.

### Accreditation

The BS degree is nationally accredited by the Computing Accreditation Commission of ABET.

### Student Skills & Capabilities

- The CS Department emphasizes 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 Object-Oriented design and implementation using two different Object-Oriented programming (OOP) languages (currently, JAVA and C++). They have also completed a Professional Communications course and a Software Engineering Course.
- 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:

Computer Science 1, 2, 3, 4  
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

### 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)

### Selected Upper Division Electives:

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

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

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

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

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

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

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

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

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

Apple Inc., Blackbaud, Excellus Blue Cross Blue Shield, Fuji Film E-Systems, Google, Harris Corp, IBM, Intel, Lehman Brothers, Lockheed Martin, Microsoft, Moog Inc., National Security Agency, Ortho-Clinical Diagnostics, Paetec Communications, Paychex, RightNow Technologies, Thomson Reuters, Verizon Wireless, Vicarious Visions, Webster Financial 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