Background

Computer Science may be viewed as the study of the theory, concepts, techniques, and tools that underpin the construction and effective use of the digital computer. A great deal of the study in this field involves problem solving: the problems could be those arising in the building of a computer or ones that surface while using the computer to help automate processes. Often, there is considerable emphasis on gaining insight into the problem at hand and finding better ways to overcome any difficulties. For example, a computer scientist might explore ways to make the computer play chess or Jeopardy more effectively. Many computer scientists explore techniques to build better machines that run faster without increasing the computer’s cost too much.

Students in the program are expected to have an aptitude in mathematics and logic.

Careers

The goal of the Bachelor of Science program in Computer Science is to produce graduates who will have the flexibility, versatility, and problem solving skills that can be applied to any problem domain, so they will be productively employed in the computing field in roles such as Computer Programmer, Software Developer, Software Engineer, and Software Systems Analyst. The graduates will have strong writing and presentation skills, and also have a sense of societal and ethical responsibility in their professional endeavors.

Most graduates of the program have started their careers in the Twin Cities. Many also have gone on for further studies at the master’s and doctoral level.

Major Requirements

No student may be enrolled in an ICS or CFS course unless he/she has completed all prerequisite courses with a grade of C- or better.

Major Prerequisites

- MATH 120 Precalculus
- MATH 210 Calculus I
- MATH 215 Discrete Mathematics
- ICS 140 Programming Fundamentals
- ICS 141 Programming with Objects
- ICS 240 Introduction to Data Structures

Computer Science Requirements:

- ICS 232 Computer Organization and Architecture
- ICS 311 Database Management System
- ICS 340 Algorithms and Data Structures
- ICS 365 Organization of Programming Languages
- ICS 372 Object-Oriented Design and Implementation
- ICS 440 Parallel and Distributed Algorithms
- ICS 460 Networks and Security
- ICS 462 Operating Systems
- ICS 499 ICS Capstone Project

Other Requirements: Approved minor or eight elective credits. See Catalog for details.

Undergraduate Catalog

Computer Science Major Requirements, Course Descriptions, Major Checklist and Course Sequence  
www.metrostate.edu/msweb/explore/catalog/undergrad/  
Department of Information and Computer Sciences  
www.metrostate.edu/msweb/explore/cas/departments/csci/index.html

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This information is available in alternative formats for individuals with disabilities by calling 651-793-1549. Information is subject to change without notice.  
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