COMPUTER SCIENCE MINOR

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The purpose of the minor in Computer Science is not only to give students a strong foundation in and understanding of algorithmic reasoning, problem solving methods involving computers and computation, as well as a solid base to help students adapt to future changes in technology, but to complement and enhance any student's major program of study.

The Computer Science minor is selective, and students must meet the same entrance requirements as the Computer Science major. Information on how to apply for the minor can be found at http://undergrad.cs.umd.edu/future/.

REQUIREMENTS

The minor in Computer Science consists of 15-24 credits; all courses must be completed with a grade of "C-" or better.

Course | Title | Credits
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CMSC132 | Object-Oriented Programming II
CMSC216 | Introduction to Computer Systems
CMSC250 | Discrete Structures
CMSC330 | Organization of Programming Languages
CMSC351 | Algorithms

Select two of the following:

Course | Title
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CMSC411 | Computer Systems Architecture
CMSC412 | Operating Systems
CMSC414 | Computer and Network Security
CMSC416 | Introduction to Parallel Computing
CMSC417 | Computer Networks
CMSC420 | Advanced Data Structures
CMSC421 | Introduction to Artificial Intelligence
CMSC422 | Introduction to Machine Learning
CMSC423 | Bioinformatic Algorithms, Databases, and Tools
CMSC424 | Database Design
CMSC426 | Computer Vision
CMSC427 | Computer Graphics
CMSC430 | Introduction to Compilers
CMSC433 | Programming Language Technologies and Paradigms
CMSC434 | Introduction to Human-Computer Interaction
CMSC435 | Software Engineering
CMSC436 | Programming Handheld Systems
CMSC451 | Design and Analysis of Computer Algorithms
CMSC452 | Elementary Theory of Computation
CMSC454 | Algorithms for Data Science
CMSC456 | Cryptography
CMSC457 | Introduction to Quantum Computing
CMSC460 | Computational Methods
CMSC466 | Introduction to Numerical Analysis I
CMSC470 | Introduction to Natural Language Processing
CMSC471 | Introduction to Data Visualization
CMSC474 | Introduction to Computational Game Theory

Total Credits: 24

1 Or acceptable score on the CMSC exemption exam.
2 Note: some of these classes variously have MATH240 or MATH241 as prerequisites.

Notes:

- Students who satisfy all three of CMSC132, CMSC216 and CMSC250 by exemption exam shall take one additional 400 level class from the approved list. This obligation is in addition to all other minor requirements.
- With prior permission of the Undergraduate Director, and at his/her discretion, at most one section (3 credits) of CMSC498, Independent Study, may substitute for one of the two core CS classes at the 400 level. This provision is intended to allow students to pursue unexpected opportunities for study of interdisciplinary topics having a substantial computational component complementing their major.
- Course combinations:
  - Students may not use more than one of CMSC460 or CMSC466 toward the minor.