

Computer Science

Clarkson University

The Computer Science major consists of a core of required courses and four options that are described below.

All students take the following nine CS courses:

- CS141 Introduction to Computer Science I
- CS142 Introduction to Computer Science II
- CS241 Computer Organization
- CS242 Advanced Programming Concepts in Java
- CS341 Programming Languages
- CS344 Algorithms and Data Structures
- CS345 Automata Theory and Formal Languages
- CS350 Software Design and Development
- CS444 Operating Systems

Each student then chooses one of four options. The general option is the most flexible: it allows students to tailor their program to a wide variety of professional and personal objectives. Each of the other options prepares for a specific career path. A list of available electives is on the back of this sheet.

General Option:

- Two of: CS445 Compiler Construction, CS455 Computer Networks, CS460 Database Systems
- Three CS electives

Software Design and Development: (Includes a minor in Software Engineering)

- CS458 Formal Methods for Program Verification
- CS459 Human-Computer Interaction
- CS460 Database Systems
- EE368 Software Engineering
- One of: CS445 Compiler Construction, CS455 Computer Networks
- One CS elective

Information Technology: (Includes a minor in Information Technology)

- CS455 Computer Networks
- CS460 Database Systems
- CS462 Software Development for the Web
- COMM 341 Introduction to Web Design
- COMM 444 Unix Web System Administration
- IS414 Database Administration
- One CS elective

Research: (Includes a minor in Mathematics)

- CS445 Compiler Construction
- CS447 Computer Algorithms
- One of: CS455 Computer Networks, CS460 Database Systems
- Two CS electives
- Six credits of undergraduate research

Details can be found in the Computer Science Student Handbook, which is available on the CS web page at www.clarkson.edu/cs. (Make sure you look at the handbook for the most recent class.)

CS electives:

CS443 Parallel Programming
CS445 Compiler Construction
CS446 Computer Graphics and Geometry
CS447 Computer Algorithms
CS449 Computational Learning
CS451 Artificial Intelligence
CS452 Computer Graphics
CS453 Mainframe Computing
CS455 Computer Networks
CS456 Cryptography
CS457 Computer and Network Security
CS458 Formal Methods for Program Verification
CS459 Human-Computer Interaction
CS460 Database Systems
CS461 Virtual Environments: Principles and Applications
CS462 Software Development for the Web
CS463 Wireless Networks
CS464 Computer Game Development

CS642 Computational Complexity
CS643 Parallel Computation
CS644 Current Issues in Operating Systems Research
CS652 Computer Vision
CS653 Automated Reasoning
CS654 Current Issues in Computer Networks Research
CS656 Advanced Topics in Cryptography
CS657 Advanced Topics in Computer Security
CS658 Current Issues in Program Analysis and Verification Research
CS659 Systems Biology