CornellEngineering

Department of Computer Science

COMPUTER SCIENCE UNDERGRADUATE DEGREE PROGRAM

As a Computer Science (CS) major, you will take courses covering algorithms, data structures, logic, programming languages, systems, and theory. You will also choose from electives like artificial intelligence, computer graphics, computer vision, cryptography, databases, networks and scientific computing. Undergraduates also have the option of completing a minor in computer science. The minor provides an excellent opportunity for students to certify that they have accomplished significant depth of study in computer science, without completing the full CS major.

The program in computer science is broad and rigorous, and structured in a way that supports your in-depth study in other disciplines. Carefully considered course selection can set the stage for graduate study, technical employment, or other professional careers in business, law, or medicine.

The Department of Computer Science was organized in 1965 and is one of the oldest departments of its kind in the country. The department is affiliated with both the College of Arts and Sciences and the College of Engineering. Students in either college may major in computer science, however, the individual college requirements for courses outside of the major will differ. Students interested in the CS major need strong skills in mathematics and the sciences and an interest in computer programming. You will typically enter the major in your third or fourth semester, after attaining programming proficiency and successfully completing CS 2800: Discrete Structures. CS majors will also take courses in algorithms and operating systems. You will complete at least one project course. Working with a faculty advisor, students plan a program that supports both your career objectives and is true to the aims of a liberal education.

BREAK THE RULES to COLLABORATE ACROSS DISCIPLINES

Using outside electives, or a specialization in another major, you can explore upper-level course offerings in other disciplines. Some of the more popular outside specializations are cognitive studies, computational biology, economics, electrical engineering, linguistics, mathematics, mechanical engineering, music and operations research.

Cornell University's Department of Computer Science is a world leader in research; as an undergraduate, you are encouraged to participate. You may find your research niche in self-directed independent study supervised by a faculty member, or you may choose to work in a research group, participating in a faculty member's research. As a CS major you may also decide to participate in a co-op or internship, which will give you a unique opportunity to apply your knowledge in real-world settings.

MASTER OF ENGINEERING DEGREE PROGRAM

An opportunity to advance your skills in CS is available through our Master of Engineering program (M.Eng.). Through

CS REQUIRED COURSES

CS 111x	Introducton to Computing
CS 2110	Object-Oriented Programming and Data Structures
CS 2800	Discrete Structures
CS 3110	Data Structures and Functional Programming
CS 3410	Computer System Organization and Programming
or	
CS 3420	Embedded Systems
CS 4410	Operating Systems
CS 4820	Introduction to Analysis of Algorithms

COMPUTER SCIENCE

SOME AREAS OF FACULTY RESEARCH

algorithms

artificial intelligence

automated reasoning

computational biology

database systems

distributed systems

graphics

information retrieval

machine learning

natural-language processing

networking

operating systems

programming languages

robotics

security

theory of computation

advanced courses in CS and other fields you can work toward more well-defined interests and/or increase your depth and breadth of CS knowledge.

The M.Eng. program is designed to enhance professional skills in practical computer science. As a course and project based degree, the M.Eng. program is particularly suited to students seeking advanced credentials for employment in industry. Typically, an M.Eng. student takes several advanced courses and completes a faculty-supervised project in an area such as artificial intelligence, databases, distributed and cloud computing, graphics, networks, scientific computing, or software engineering.

Cornell undergraduates might also be eligible for the CS Early M.Eng. credit option which allows CU undergrads to begin working on M.Eng. degree credit in their final semester as an undergraduate.

CS SAMPLE ELECTIVE COURSES

CS 1300	Introductory Design and Programming for the Web
CS 1620	Visual Imaging in the Electronic Age
CS 1710	Introduction to Cognitive Science
CS 2024	C++ Programming
CS 2043	UNIX Tools and Scripting
CS 2300	Intermediate Design and Programming for the Web
CS 2850	Networks
CS 3152	Introduction to Computer Game Architecture
CS 3758	Autonomous Mobile Robots
CS 4120	Introduction to Compilers
CS 4220	Numerical Analysis: Linear and Nonlinear Problems
CS 4300	Language and Information
CS 4320	Introduction to Database Systems
CS 4620	Introduction to Computer Graphics
CS 4700	Foundations of Artificial Intelligence
CS 4740	Natural Language Processing
CS 4780	Machine Learning for Intelligent Systems
CS 4812	Quantum Information Processing
CS 4860	Applied Logic

CS By the Numbers

CS undergraduate students		1,087
	College of Engineering	687
	College of Arts & Sciences	400
CS graduate students (M.Eng.)		128

Starting salaries of B.S. Computer Science graduates (for 2018)

Low	$20,000
Median	$108,000
High	$170,000

cs.cornell.edu/ugrad