

# COMPUTER SCIENCE, BA

2nd Major for College Students only.

Computer scientists have revolutionized society and created the computer and telecommunications industries that are so important to human life and the world's economy. As a result of this revolution, expertise in computer science is essential in many new areas, including computer and network service and consulting companies, financial institutions, health industries, natural science labs and medical research labs, and other contexts where intensive manipulation of information is important. As a result, opportunities for computer scientists have expanded greatly, both in specialized fields as well as in numerous dual-career opportunities in which computer expertise is combined with advanced degrees in business, communication, engineering, law, medicine, and science.

Students in the College of Arts and Sciences can add Computer Science as a second major, but it cannot be a student's sole major. College students will receive one degree from the College of Arts and Sciences, with Computer Science as the second major on the student's transcript.

Students must apply for admission to the Computer Science major. A cumulative GPA of 3.0 or above and a grade of B or higher in CIS 1200 are required. Students wanting to add Computer Science as their 2nd major must also be able to do so without extending their graduation date.

**For more information:** <https://www.cis.upenn.edu/undergraduate/program-options/second-major-in-cs/>

## Curriculum

Code	Title	Course Units
<b>Major Requirements</b>		
CIS 1100	Introduction to Computer Programming	1
CIS 1200	Programming Languages and Techniques I	1
CIS 1600	Mathematical Foundations of Computer Science	1
CIS 1210	Programming Languages and Techniques II	1
CIS 2400	Introduction to Computer Systems	1
CIS 2620	Automata, Computability, and Complexity	1
CIS 3200	Introduction to Algorithms	1
Project Electives <sup>1</sup>		2
CIS Elective <sup>2</sup>		1
CIS Electives ≥2000-level <sup>2</sup>		2
<b>Total Course Units</b>		<b>12</b>

<sup>1</sup> The only allowed Project Electives

are CIS 3500, CIS 4120, CIS 5120, CIS 4410, CIS 5410, CIS 4480, CIS 5480, CIS 4500, CIS 5500, CIS 4521, CIS 5521, CIS 4550, CIS 5550, CIS 4600, CIS 5600, CIS 4

<sup>2</sup> A CIS Elective is any CIS or NETS Engineering course; note that non-Engineering CIS/NETS courses are excluded (<https://ugrad.seas.upenn.edu/student-handbook/courses-requirements/engineering-courses/>). ESE 3500 may also be used as a CIS Elective.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2025 and later. Students should

consult with their academic program regarding final certifications and requirements for graduation.