

The template below shows the undergraduate curriculum requirements for students majoring in Computer Science, including dual majors. Note that you do not need to take courses in the exact order shown below, as long as all requirements are met and you earn at least 128 credit hours. Check the Course Catalog for prerequisites and semester restrictions (e.g., fall only, spring only) on all courses you plan to take. **Please rely on this template, the Course Catalog (catalog.rpi.edu), and discussions with your academic advisor to verify that you are meeting all requirements for the CS major.**

First Year

Fall 2022		Spring 2023	
CSCI 1100 Computer Science I ¹	4	CSCI 1200 Data Structures	4
MATH 1010 Calculus I	4	MATH 1020 Calculus II	4
PHYS 1100 Physics I ²	4	BIOL 1010 Intro. to Biology ²	3
HASS Elective	4	BIOL 1015 Intro. to Biology Lab ²	1
		HASS Elective	4

Second Year

Fall 2023		Spring 2024	
CSCI 2200 Foundations of CS	4	CSCI 2300 Intro. to Algorithms	4
CSCI 2500 Computer Organization ³	4	CSCI 2600 Principles of Software ⁴	4
Mathematics Option I	4	Mathematics Option II	4
HASS Elective	4	HASS Elective	4

Third Year

Arch Summer 2024		Fall 2024 -or- Spring 2025	
CSCI 4210 Operating Systems ⁶	4	CSCI 4430 Programming Languages ⁶ -or- CS Option/Capstone	4
CS Option/Capstone -or- Free Elective ⁵	4	Science Option	4
HASS Elective	4	HASS Elective	4
Free Elective	4	Free Elective	4

Fourth Year

Fall 2025		Spring 2026	
CS Option/Capstone -or- CSCI 4430 Programming Languages ⁶	4	CS Option/Capstone	4
CS Option/Capstone	4	Free Elective -or- CS Option/Capstone	4
Free Elective	4	Free Elective	4
Free Elective	4	Free Elective	4

¹ Students with sufficient background in computer science may skip CSCI 1100 and replace it with four credits of other CSCI course(s) at the 2000 level or above. Students who have passed CSCI 1200 cannot register for CSCI 1100.

² If no prior experience in MATH 1010, we recommend taking BIOL 1010/BIOL 1015 in fall semester of the first year; otherwise, we recommend taking PHYS 1100 in fall semester of the first year.

³ Dual majors in Computer Systems Engineering may replace CSCI 2500 with ECSE 2660; students should take only one of these courses.

⁴ CSCI 2600 is offered in summer and spring semesters.

⁵ Specific course(s) offered will vary each summer.

⁶ CSCI 4210 is offered in summer and spring semesters; CSCI 4430 is only offered in fall semesters.

Science Option: A four-credit course chosen from the following: astronomy, biology, chemistry, earth and environmental science, and physics. The Pass/No Credit option cannot be used for this course. The course EARTH 1030 cannot be used to satisfy this requirement.

Mathematics Options: Two additional courses in mathematics. Mathematics Option I must be one of the following courses: MATH 2010, MATH 4030, MATH 4040, MATH 4100, or MATP 4600. Mathematics Option II must be any course in MATH/MATP at the 2000 level or above (excluding MATH 2800). Independent study courses cannot be used to satisfy this option. The Pass/No Credit option cannot be used for these courses. Note that although some courses are cross-listed as both MATH and CSCI, if a course is used to fulfill the Mathematics Option requirement, it cannot also be used as a CS Option/Capstone course.

Computer Science (CS) Options: Four additional computing courses of three or four credits at the 4000 or 6000 level, i.e., courses in the series CSCI 4xxx and CSCI 6xxx. Reading courses, independent study courses, and URPs cannot be used for these courses. Further, the Pass/No Credit option cannot be used for these courses. Note that of the required 16 credits, any missing credits due to 3-credit courses may be made up as free elective credits.

Computer Science Coursework Concentration Capstone: The coursework concentration capstone consists of four 4000- or 6000-level CSCI (or CSCI cross-listed) courses. All 4000- and 6000-level CSCI catalog courses and special topics courses that are not part of the required undergraduate core are assigned to one or more topic areas, listed below. *To demonstrate depth of study, the student must take three courses in one concentration area. To demonstrate breadth of study, the fourth course must be in one of the other three concentration areas.*

- (a) Theory, Algorithms, and Mathematics
- (b) Systems and Software
- (c) Artificial Intelligence and Data
- (d) Applications

The list of approved concentration area courses is here: <https://rpi.app.box.com/v/csci-capstone> Note that the courses taken toward the capstone also count as Computer Science (CS) Option courses.