

Tufts University – School of Engineering
Class of 2025 (requirements as established in the 2021-2022 Bulletin)
Bachelor of Science in Computer Science (BSCS)
Major Requirement

* Courses that require a letter grade (i.e., no pass/fail), ** courses that require a C- or better

The BSCS comprises credit requirements and course requirements as established by the School of Engineering and Department of Computer Science. Students must satisfy the SOE and ABET-CAC program requirements listed in the Credit Requirements box, as well as fulfill all course requirements. The School of Engineering requirements are shown in italics and fall outside second major double counting rules. SHU values listed for each course requirement reflect those associated with the corresponding Tufts course. Unless otherwise noted, course requirements may be satisfied with transfer courses having SHU values that are different than those shown here. In all cases, students should enter the SHUs received or earned in the correct SOE-Attribute column for a given course requirement to ensure they meet the credit requirements. For planning purposes, students completing the BSCS requirements with Tufts courses will earn at least 120 SHU.

Mathematics & Natural Sciences*	SHU	SOE Attribute						Term
		C	E	M	NS	HASS	None	
MATH 32 Calculus I	4							
MATH 34 Calculus II or MATH 39 Honors Calculus I-II	4							
MATH 42 Calculus III or MATH 44 Honors Calculus III	4							
CS/MATH 61 Discrete Math or MATH 65 Foundations of higher mathematics **	3							
MATH 70 Linear Algebra or MATH 72 Abstract Lin. Alg. **	3							
BIO-CHEM-PHY Elective (a)	5							
BIO-CHEM-PHY Elective (a)	5							
MNS Elective (b)	≥3							
Prob & Stat Elective (c)	≥3							
Subtotal	≥34	-	-			-		

HASS	SHU	SOE Attribute						Term
		C	E	M	NS	HASS	None	
ENG 1* Expos. Writing or ENG 3	3							
Humanities Elective (d)	≥3							
Social Science Elective (e)	≥3							
Ethics & Social Context Elec. (f)	3-4							
≥24 SHU of SOE-HASS are required for the degree. List below HASS courses that do not appear in the Breadth Elective Section (see note g)								
Subtotal	≥18	-	-	-	-	-	-	

Credit Requirements	SOE Attribute						Total
	E	C	M	NS	HASS	None	
SOE Requirements	≥30		≥30		≥24	-	≥120
ABET-CAC Program Requirements	-	≥40	≥15	≥6	-	-	≥120
Student Totals							

Abbreviations:

- SHU = Semester Hour Unit
- SOE = School of Engineering
- ABET-CAC = Computing Accreditation Commission of ABET
- C = Courses having attribute SOE-Computing
- E = Courses having attribute SOE-Engineering
- M = Courses having attribute SOE-Mathematics
- NS = Courses having attribute SOE-Natural Sciences
- HASS = Course having attribute SOE-HASS (Humanities, Arts, and Social Sciences)
- None = Course without SOE attribute

Student and Advisor Notes:

Engineering*	SHU	SOE Attribute						Term
		C	E	M	NS	HASS	None	
EN 1 Applications in Eng.	3							
ES 2 Intro. Computing in Eng. or ENG-CS Elective (h)	≥3							
Subtotal	≥6			-	-	-	-	

Computer Science Core**	SHU	SOE Attribute						Term
		C	E	M	NS	HASS	None	
CS 11 Intro. Comp. Sci.	4							
CS 15 Data Structures	4							
CS 40 Machine Structure & Assembly-Language Prog.	5							
CS 105 or CS 80 Programing Languages	3-5							
CS 160 Algorithms	4							
CS 170 Comp. Theory	3							
Systems Elective (i)	≥3							
Systems Elective (i)	≥3							
CS Elective (j)	≥3							
CS Elective (j)	≥3							
CS Elective (k)	≥3							
CS Elective (l)	≥3							
CS Social Cont. Elective(m)	≥2							
CS 97 Sr. Capstone Proj. I	3							
CS 98 Sr. Capstone Proj. II	3							
Subtotal	≥49							

Breadth Electives	SHU	SOE Attribute						Term
		C	E	M	NS	HASS	None	
≥6 SHU of Breadth Electives are required for the degree. List courses below (see note n).								
Subtotal	≥6							

Additional Courses	SHU	SOE Attribute						Term
		C	E	M	NS	HASS	None	
List below additional courses needed to satisfy the credit requirements.								
Subtotal	≥0							

BSCS Notes

- (a) Biology, Chemistry or Physics
Selected course may not be used to fulfill any other course requirement.
Select From:
PHY 11, CHEM 1, CHEM 16, or BIO13
- (b) Mathematics & Natural Sciences Elective
Selected course may not be used to fulfill any other course requirement.
Select From:
Any course having attribute SOE-Mathematics
Any course having attribute SOE-Natural Sciences
- (c) Probability & Statistics
Selected course may not be used to fulfill any other course requirement.
Select From:
MATH 166, ES 56, EE 24, EE 104, BME 141, BIO 132, PHY 153
- (d) Humanities Elective
At least 3 SHU of Humanities are required. Requirement may not be satisfied with pre-matriculation credits, ENG 1, ENG 3, or a course satisfying the Social Sciences Elective (e).
Select From:
Any course having attribute SOE-HASS-Humanities
- (e) Social Sciences Elective
At least 3 SHU of Social Sciences are required. Requirement may not be satisfied with pre-matriculation credits or a course satisfying the Humanities elective (b).

Select From:
Any course having attribute SOE-HASS-Social Sciences
- (f) Ethics & Social Context Elective
Select From:
PHIL 24 or EM 54
- (g) Humanities, Arts or Social Sciences Electives
Select From:
Any course having attribute SOE-HASS
Any course having attribute SOE-HASS-Humanities
Any course having attribute SOE-HASS-Arts
Any course having attribute SOE-HASS-Social Sciences
- (h) Engineering or Computing Elective
Selected course may not be used to fulfill any other course requirement.
Select any course of 3 SHU or more from:
Any course having attribute SOE-Computing
Any course having attribute SOE-Engineering
- (i) Systems Elective:
Selected course may not be used to fulfill any other course requirement.
Select from:
ES 4, EE 14, CS 111, 112, 116, 118, 121, 122
- (j) COMP Elective
Selected course may not be used to fulfill any other course requirement.
Select from:
CS courses numbered between 100 and 179, excluding CS 153-155
- (k) CS Elective
Selected course may not be used to fulfill any other course requirement.
Select From:
CS courses numbered between 16 and 199, excluding CS 53-55, CS 97-99, CS 153-155, and CS 182-188
- (l) CS Elective
Selected course may not be used to fulfill any other course requirement.
Select from:
CS courses numbered between 16 and 179 excluding CS 53-55, CS 93-99, CS 153-155;
MATH 51, MATH 63, MATH 70, MATH 72, MATH 87, MATH 125, MATH 126, MATH 133, MATH 135, MATH 136, MATH 145, MATH 146, MATH 155, MATH 156, MATH 165, or MATH 166
- (m) CS Social Context Elective
Selected course may not be used to fulfill any other course requirement.
Select from:
CS 27, CS 28, CS 55, CS 116, CS 120, CS 139, CS 155, CS 182-188
- (n) Breadth Elective
Selected course may not be used to fulfill any other course requirement.
Select from:
Any course having attribute SOE-HASS
BME 50 Introduction to Biomedical Engineering
CEE 32 Engineering for a Sustainable and Resilient Society
At most one of ME 10, 20, 30, 40, 50
Any ENP, ENT, or EM course
Maximum of two computer science internships (CS 99)
ES 85 Preparation for Cooperative Education

Maximum of one course from the Experimental College (EXP)
Maximum of one course from Physical Education (PE)

BSCS Course Selection Guidance

Fall Semester, First Year

Course	SHU	SOE Attribute
<i>EN 1 Introduction to Engineering</i>	3	Engineering
MATH 32 Calculus I (or MATH 39)	4	Mathematics
PHY11 General Physics I with laboratory	5	Natural Sciences
<i>ENG 1 Expository Writing</i>	3	HASS

Semester Total SHU 15

Spring Semester, First Year

Course	SHU	SOE Attribute
<i>CS 11 Intro. Computer Science</i>	4	Engineering
MATH 34 Calculus II	4	Mathematics
CHEM 1 Chemical Fundamentals with laboratory	5	Natural Sciences
<i>HASS Elective</i>	3-4	HASS

Semester Total SHU 16-17

Fall Semester, Second Year

Course	SHU	SOE Attribute
CS 15 Data Structures	4	Computing
MATH 42 Calculus III (or MATH 44)	4	Mathematics
MNS Elective	3-5	varies with selection
<i>HASS Elective</i>	3-4	HASS
<i>HASS Elective</i>	3-4	HASS

Semester Total SHU 17-21

Spring Semester, Second Year

Course	SHU	SOE Attribute
CS/MATH 61 (or MATH 65)	3	Mathematics
MATH 70 Linear Algebra (or MATH 72)	3	Mathematics
Systems Elective	3-4	varies with selection
<i>HASS Elective</i>	3-4	HASS
<i>HASS Elective</i>	3-4	HASS

Semester Total SHU 15-18

Fall Semester, Third Year

Course	SHU	SOE Attribute
CS 160 Algorithms	4	Computing
Systems elective	3-4	varies with selection
CS Elective	3-4	Computing
<i>HASS Elective</i>	3-4	HASS
Breadth Elective	1-4	varies with selection

Semester Total SHU 14-20

Spring Semester, Third Year

Course	SHU	SOE Attribute
CS 40 Machine Structure & Assembly-Language Prog.	5	Computing
CS Elective	3-4	Computing
<i>HASS Elective</i>	3-4	HASS
Breadth Elective	1-4	varies with selection

Semester Total SHU 12-17

Fall Semester, Fourth Year

Course	SHU	SOE Attribute
CS 97 Senior Capstone Project I	3	Computing
CS 105 Programing Languages	5	Computing
CS Elective	3-4	Computing
Probability & Statistics	3-4	varies with selection
<i>HASS Elective</i>	3-4	HASS

Semester Total SHU 17-20

Spring Semester, Fourth Year

Course	SHU	SOE Attribute
CS 98 Senior Capstone Project II	3	Computing
CS 170 Computation Theory	3	Computing
CS Elective	3-4	Computing
CS Elective	3-4	Computing
<i>HASS Elective</i>	3-4	HASS

Semester Total SHU 15-18