

## B.S. Computer Engineering (CS 25): Major Checklist, Fall 2022

Completed	<b>Lower Division (68 units)</b>
	<b>Intro to Computer Science</b>
	CSE 8B/11, Introduction to Computer Science: Java
	<b>Lower-Division Computer Science</b>
	CSE 12, Basic Data Structures and Object-Oriented Programming
	CSE 15L (2 units), Software Tools and Technique Laboratory
	CSE 20 <b>or</b> Math 15A, Introduction to Discrete Mathematics
	CSE 21 Mathematics for Algorithms and Systems
	CSE 30, Computer Organization and Systems Programming
	<b>Lower-Division Elective (2 units from):</b> CSE 3, CSE 4GS, CSE 6R, CSE 6GS, CSE 8A, CSE 42, CSE 86, CSE 90, CSE 91, CSE 95, CSE 99, CSE 180, CSE 180R, MAE 8, MAE 9, COGS 9, COGS 10, COGS 18, ECE 15, ENG 10, ENG 15, NANO 15, CENG 15, or any CSE upper-division course not used to fulfill other degree requirements
	<b>Mathematics</b>
	Math 20A, Calculus for Science and Engineering
	Math 20B, Calculus for Science and Engineering
	Math 20C, Calculus and Analytical Geometry for Science and Engineering <b>or</b> MATH 31BH Honors Multivariable Calculus
	Math 20D, Introduction to Differential Equations
	Math 18, Linear Algebra <b>or</b> MATH 31AH Honors Linear Algebra
	<b>Physics*</b>
	Phys 2A, Physics-Mechanics
	Phys 2B, Physics-Electricity and Magnetism
	Phys 2C, Physics-Fluids, Waves, Thermodynamics and Optics
	<b>Electrical Computer Engineering</b>
	ECE 35, Introduction to Analog Design
	ECE 45, Circuits and Systems
	ECE 65, Components and Circuits Laboratory
Completed	<b>Upper Division (72 units)</b>
	<b>Statistics</b>
	ECE 109, Engineering Probability and Statistics
	<b>Upper-Division</b>
	CSE 100 <b>or</b> CSE 100R, Advanced Data Structures
	CSE 101, Design and Analysis of Algorithms
	CSE 110, Software Engineering
	CSE 120, Principles of Computer Operating Systems
	CSE 140, Components and Design Techniques for Digital Systems
	CSE 140L (2 units), Digital Systems Laboratory
	CSE 141, Introduction to Computer Architecture <b>or</b> CSE 142 Intro to Comp Arch: A Software Perspective
	CSE 141L (2 units), Project in Computer Architecture <b>or</b> CSE 142L if CSE 142 was completed
	<b>Linear Systems: ECE 101 Linear Systems Fundamentals (4 units)</b>
	<b>Electrical Circuits and Systems: ECE 108 Digital Circuits (4 units)</b>
	<b>Upper-Division Electives (7 courses, 4 units each)</b>
	ECE 111, Advanced Digital Design Project <b>or</b> ECE 140B The Art of Product Engineering II
	CSE or ECE Elective
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	CSE or ECE Elective (may also be from approved list of Technical Electives)
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ALL major requirements must be taken for *letter* grade with the exceptions of: CSE 91, CSE 95, CSE 197, CSE 198, and CSE 199.

\*PHYS 2ABC sequence may be substituted with PHYS 4ABC sequence.