

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

	Course Number & Title (units)	Prerequisites†
<b>Complete ALL of the following lower division courses:</b>		
	ECS 20: Discrete Mathematics for Computer Science (4)	a 'C-' or higher in MAT 16A or 17A or 19A or 21A
	<b>ONE (1)</b> of the following series options in its entirety: <i>mixing of courses between series is not allowed</i> <input type="checkbox"/> ECS 36 Series: - <i>intended for declared CS/CSE majors</i> ECS 36A: Programming & Problem Solving (4) ECS 36B: Software Development & Object-Oriented Programming in C++ (4) ECS 36C: Data Structures, Algorithms, & Programming (4) <b>OR</b> <input type="checkbox"/> ECS 32/34 Series: - <i>intended for non-majors who want to change to CS or CSE</i> ECS 32A: Introduction to Programming or ECS 36A: Programming & Problem Solving (4) ECS 32B: Introduction to Data Structures (4) ECS 32C: Implementation of Data Structures in C (4) ECS 34: Software Development in UNIX & C++ (4)	<i>ECS 36A: a 'C-' or higher in ECS 32A/32AV, or must satisfy computer science placement exam</i> <i>ECS 36B: a 'C-' or higher in ECS 36A</i> <i>ECS 36C: a 'C-' or higher in ECS 20 and in ECS 36B</i>  <i>ECS 32A: none</i> <i>ECS 32B: a 'C-' or higher in ECS 32A/32AV or 36A</i> <i>ECS 32C: a 'C-' or higher in ECS 32B</i> <i>ECS 34: a 'C-' or higher in ECS 32C</i>
	ECS 50: Computer Organization & Machine Dependent Programming (4)	a 'C-' or higher in ECS 34 or 36B
	MAT 21A: Calculus (4)	must satisfy mathematics placement requirement
	MAT 21B: Calculus (4)	a 'B' or higher in MAT 17A or 19A, or a 'C-' or higher in either MAT 21A or 21AH
	MAT 21C: Calculus (4)	a 'B' or higher in MAT 17B, or a 'C-' or higher in MAT 16C or 17C or 21B or 21BH
	MAT 21D: Vector Analysis (4)	a 'B' or higher in MAT 17C, or a 'C-' or higher in MAT 21C or 21CH
	<b>ONE (1)</b> of the following: <input type="checkbox"/> MAT 22A: Linear Algebra (3) <input type="checkbox"/> MAT/BIS 27A: Linear Algebra with Applications to Biology (4) <input type="checkbox"/> MAT 67: Modern Linear Algebra (4)	<i>MAT 22A: a 'C-' or higher in MAT 16C or 17C or 21C or 21CH; ENG 6 or EME 5 or ECH 60 or MAT 22AL may be taken concurrently</i> <i>MAT 27A: a 'C-' or higher in MAT 17C or 21C or 21CH</i> <i>MAT 67: a 'C-' or higher in MAT 21C or 21CH</i>
	<b>ONE (1)</b> of the following: <input type="checkbox"/> MAT 22B: Differential Equations (3) <input type="checkbox"/> MAT/BIS 27B: Differential Equations with Applications to Biology (4)	<i>MAT 22B: a 'C-' or higher in MAT 22A or 27A or 67 or BIS 27A</i> <i>MAT 27B: a 'C-' or higher in MAT 27A or BIS 27A, or a 'C-' or higher in MAT 22A and in either MAT 22AL or ENG 6 or ECS 32A or ECS 36A or ECH 60 or EME 5</i>
	<b>ONE (1)</b> of the following: <input type="checkbox"/> CHE 2A General Chemistry (5) <input type="checkbox"/> CHE 4A: General Chemistry for the Physical Sciences & Engineering (5)	<i>CHE 2A: a score of 24 or higher on the chemistry placement exam or a 'C-' or better in CHE 1/1V</i> <i>CHE 4A: a score of 28 or higher on the chemistry placement exam</i>
	PHY 9A: Classical Physics (5)	a 'C-' or higher in MAT 21B or 21M or 17C, or a 'B' or higher in MAT 17B
	PHY 9B: Classical Physics (5)	a 'C-' or higher in PHY 9A and MAT 21C
	PHY 9C: Classical Physics (5)	a 'C-' or higher in PHY 9A, PHY 9B, and MAT 21D
	PHY 9D: Modern Physics (4)	a 'C-' or higher in PHY 9B and PHY 9C, and in MAT 22A or 27A; MAT 22B or 27B can be taken concurrently
	ENG 17/17V: Circuits I (4)	MAT 21C; a 'C-' or higher is recommended
	CMN 1/1V: Introduction to Public Speaking (4)	none
	<b>ONE (1)</b> of the following lower division (LD) composition courses: <input type="checkbox"/> COM 1: Major Works of the Ancient World (4) <input type="checkbox"/> COM 2: Major Works of the Medieval & Early Modern World (4) <input type="checkbox"/> COM 3: Major Works of the Modern World (4) <input type="checkbox"/> COM 4: Major Works of the Contemporary World (4) <input type="checkbox"/> ENL 3/3V: Introduction to Literature (4) <input type="checkbox"/> NAS 5: Introduction to Native American Literature (4) <input type="checkbox"/> UWP 1/1V/1Y: Introduction to Academic Literacies (4)	<i>COM 1: completion of ELWR</i> <i>COM 2: completion of ELWR</i> <i>COM 3: completion of ELWR</i> <i>COM 4: completion of ELWR</i> <i>ENL 3: completion of ELWR</i> <i>NAS 5: completion of Subject Requirement</i> <i>UWP 1: completion of ELWR</i>

**Complete ALL of the following depth subject matter courses:**

	<b>ONE (1)</b> of the following: <input type="checkbox"/> ECS 120: Theory of Computation (4)* <input type="checkbox"/> ECS 122A: Algorithm Design & Analysis (4)*	<i>ECS 120: MAT 108, or ECS 20 and either ECS 32B or ECS 36C</i> <i>ECS 122A: ECS 20; ECS 32B or 36C or 60</i>
	ECS 132: Probability & Statistical Modeling for Computer Science (4)	ECS 34 or 36B; ECS 20; MAT 21C; MAT 22A or 27A or 67
	ECS 140A: Programming Languages (4)	ECS 20; ECS 50; ECS 34 or 36C; ECS 150 recommended
	ECS 150: Operating Systems & System Programming (4)	ECS 34 or 36C; ECS 154A or EEC 170
	ECS 152A: Computer Networks (4)	ECS 32B or 36C; ECS 132 or EEC 161 or MAT 135A or STA 32 or 35B or 100 or 131A
	ECS 154A: Computer Architecture (4)	ECS 50 or EEC 70
	ECS 154B: Computer Architecture (4)	ECS 154A or EEC 170 or EEC 180A
	ECS 160: Software Engineering (4)	ECS 140A
	ECS 188: Ethics in an Age of Technology (4)	upper division standing
	ECS 193A AND ECS 193B: Capstone Project (6)	<i>ECS 193A: ECS 160 (may be taken concurrently); ECS 150; upper division standing;</i> <i>ECS 193B: ECS 193AIP or better</i>
	EEC 100: Circuits II (5)	a 'C-' or higher in ENG 17/17V; MAT 22B or 27B
	EEC 172: Embedded Systems (4)	EEC 100; EEC 170 or ECS 154A

	Course Number & Title (units)	Prerequisites†
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**Complete one of the following Upper Division Composition options:**

<input type="checkbox"/> UWP 101/101V/101Y: Advanced Composition (4) <input type="checkbox"/> UWP 102 series: Writing in the Disciplines (4) <input type="checkbox"/> UWP 104 series: Writing in the Professions (4) <input type="checkbox"/> Upper Division Composition Exam	<i>a 'C-' or higher in UWP 1/1V/1Y or COM 1 or COM 2 or COM 3 or COM 4 or ENL 3 or NAS 5; upper division standing</i>
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**Complete a minimum of 4 courses and 15 units from the following Upper Division Electives:**

*a maximum of 1 course from the restrictive elective list\*\* may be used as an upper division elective*

<input type="checkbox"/> ECS 120: Theory of Computation (4) *	MAT 108, or ECS 20 and either ECS 32B or ECS 36C
<input type="checkbox"/> ECS 122A: Algorithm Design & Analysis (4) *	ECS 20; ECS 32B or 36C
<input type="checkbox"/> ECS 122B: Algorithm Design & Analysis (4)	ECS 122A; ECS 34 or 36C
<input type="checkbox"/> ECS 124: Theory & Practice of Bioinformatics (4)	ECS 32A/32AV or 36A or ENG 6; STA 32 or 35B or 100 or 131A or MAT 135A or BIM 105 or ECS 132 or EEC 161; BIS 2A or MCB 10
<input type="checkbox"/> ECS 127: Cryptography (4)	ECS 20 or MAT 108; ECS 32A/32AV or 36A
<input type="checkbox"/> ECS 129: Computational Structural Bioinformatics (4)	BIS 2A or MCB 10; ECS 32A/32AV or 36A
<input type="checkbox"/> ECS 130: Scientific Computation (4)	ECS 32A/32AV or 36A or ENG 6; MAT 22A or 27A or 67
<input type="checkbox"/> ECS 153: Computer Security (4)	ECS 150; ECS 152A or EEC 173A
<input type="checkbox"/> ECS 158: Programming on Parallel Architectures (4)	ECS 150
<input type="checkbox"/> ECS 161: Modern Programming Tools (4)	ECS 32B or 36B
<input type="checkbox"/> ECS 162: Web Programming (4)	ECS 34 or 36B
<input type="checkbox"/> ECS 163: Information Visualization (4)	ECS 32B or 36C
<input type="checkbox"/> ECS 164: Human-Computer Interaction (4)	none
<input type="checkbox"/> ECS 165A: Database Systems (4)	ECS 32B or 36C
<input type="checkbox"/> ECS 170: Introduction to Artificial Intelligence (4)	ECS 32B or 36C
<input type="checkbox"/> ECS 171: Machine Learning (4)	ECS 32B or 36C; STA 32 or STA 35B or STA 131A or ECS 132 or MAT 135A or EEC 161; MAT 22A or 27A or 67
<input type="checkbox"/> ECS 172: Recommender Systems (4)	ECS 32B or 36B; ECS 132 or STA 130A or STA 131A or ECN 140; MAT 22A or 27A or 67
<input type="checkbox"/> ECS 173: Image Processing & Analysis (4)	a 'C-' or higher in MAT 22A or 27A or 67; ECS 32B or 36C
<input type="checkbox"/> ECS 174: Computer Vision (4)	ECS 32B or 36C; MAT 22A or 27A or 67
<input type="checkbox"/> ECS 175: Computer Graphics (4)	ECS 34 or 36C; MAT 22A or 27A or 67
<input type="checkbox"/> ECS 177: Scientific Visualization (4)	ECS 175
<input type="checkbox"/> ECS 178: Geometric Modeling (4)	ECS 175
<input type="checkbox"/> ECS 179: Gameplay Programming (4)	ECS 32B or ECS 36C
<input type="checkbox"/> ECS 189: Special Topics (4)	instructor consent
<input type="checkbox"/> ECS 191: Software Design Project (4)	ECS 160
<input type="checkbox"/> ECS 192: Internship OR ECS 197T: Tutoring OR ECS 199: Special Study OR ECS 199FB: Teaching (3-5)	varies; see department website
<input type="checkbox"/> Any other ECS course 120-189 not already used in the major (4)	varies; see department website
<input type="checkbox"/> EEC 171: Parallel Computer Architecture (4)	EEC 170 or ECS 154B
<input type="checkbox"/> EEC 180: Digital Systems II (5)	EEC 18 or 180A

**Restrictive Elective List: \*\***

<input type="checkbox"/> ECN 122: Theory of Games & Strategic Behavior (4)	a 'C-' or higher in MAT 16A & 16B, or MATH 21A & 21B, or MAT 17A & 17B, or instructor consent
<input type="checkbox"/> LIN 127: Text Processing & Corpus Linguistics (4)	none
<input type="checkbox"/> LIN 177: Computational Linguistics (4)	instructor consent
<input type="checkbox"/> PSC 120: Agent-Based Modeling (4)	none
<input type="checkbox"/> MAT 135A: Probability (4)	MAT 21C; MAT 67 or 108
<input type="checkbox"/> MAT 135B: Stochastic Processes (4)	MAT 135A; MAT 22A or MAT 27A or MAT 67 or BIS 27A
<input type="checkbox"/> STS 115: Data Sense & Exploration: Critical Storytelling with Analysis (4)	none
<input type="checkbox"/> STA 131A: Introduction to Probability Theory (4)	a 'C-' or higher in MAT 21C and in either MAT 22A or 27A or 67
<input type="checkbox"/> STA 131B: Introduction to Mathematical Statistics (4)	a 'C-' or higher in STA 131A or MAT 135A; instructor consent
<input type="checkbox"/> STA 142A: Statistical Learning I (4)	a 'C-' or higher in STA 141A, in STA 130A or 131A or MAT 135A, and in either MAT 22A or 27A or 67
<input type="checkbox"/> STA 142B: Statistical Learning II (4)	a 'C-' or higher in STA 141A, in STA 130A or 131A or MAT 135A, and in either MAT 22A or 27A or 67

†Prerequisites are subject to change; consult the University Catalog (<https://catalog.ucdavis.edu/>) for the most recent updates

\*Completion of a core requirement will not satisfy an elective requirement simultaneously

✓Total units required for CSE major: 144-154