Computer Engineering 2024-2025 (Class of 2028)

Alternate 4-year plans for Honors, CEN/ELE double majors, and for students taking Pre-Calculus in their first semester are available on the ECE Web site: https://ece.umaine.edu/undergraduate/computer-engineering-curriculum/

Fall First Year		
CMJ 103	Fund of Public Communication Human Values	3
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
MAT 126	Calculus I	4
PHY 121	Physics for Engineers 1	4
		15

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
ENG 101	College Composition	3
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		15

Fall Sophomore		
ECE 277	Programming II: From Hardware to Objects	4
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
MAT 228	Calculus III	4
Elective	HV & SC (1)	3
		18

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
Elective	Generic Focus (1)	3
MAT 258	Diff Eqn. & Linear Algebra	4
Elective	HV & SC (2)	3
		17

Fall Junior		
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 473	Computer Architecture & Org	4
ECE 314	Signals and Systems	3
		14

Spring Junior		
ECE 331 | COS 331	Embedded Operating System Design | Operating Systems	3
ECE 405	Design Project	2
Elective	Computer Focus (1)	3
Elective	Computer Focus (2)	3
Elective	HV & SC (3)	3
		14

Fall Senior		
ECE 406	Design Project II	4
ECE 471	Embedded Systems	3
MAT 481| COS 250	Discrete Mathematics | Discrete Structures	3
Elective	Computer Focus (3)	3
Elective	ECE Technical Elective (1)	3
		16

Spring Senior		
ECE 403	Design Project III	2
ECE 486	Digital Signal Processing	4
Elective	ECE Technical Elective (2)	3
Elective	HV & SC (4)	3
Elective	HV & SC (5)	3
		15

Total Credit Hours	**124**

ECE
Math & Science
English

HV & SC Electives must satisfy the following categories	
Soc. Contexts and Inst (satisfied by CMJ 103)	✓
Cultural Diversity & International Perspectives	
Western Cultural Tradition	
Population and the Environment	
Artistic & Creative Expression	
Ethics	

Computer Engineering with Honors 2024-2025 (Class of 2028)

See: https://ece.umaine.edu/undergraduate/honors-program/

Fall First Year		
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
HON 111	Civilizations I	4
MAT 126	Calculus I	4
PHY 121	Physics for Engineers 1	4
		16

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
HON 112	Civilizations II	4
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		16

Fall Sophomore		
ECE 277	Programming II: From Hardware to Objects	4
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
HON 211	Civilizations III	4
MAT 228	Calculus III	4
		19

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
HON 212	Civilizations IV	4
MAT 258	Diff Eqn. & Linear Algebra	4
		15

Fall Junior		
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 473	Computer Architecture & Org	4
HON 180	A Cultural Odyssey	1
ECE 314	Signals and Systems	3
		15

Spring Junior		
HON 170	Currents and Context	1
ECE 331 | COS 331	Embedded Operating System Design | Operating Systems	3
ECE 405	Design Project	2
Elective	Computer Focus (1)	3
HON 3XX	Honors Tutorial	3
Elective	Computer Focus (2)	3
HON 391	Intro to Thesis Research	1
		16

Fall Senior		
ECE 471	Embedded Systems	3
HON 498	Honor Directed Study	3
MAT 481| COS 250	Discrete Mathematics | Discrete Structures	3
Elective	Computer Focus (3)	3
Elective	Generic Focus (1) - Math course	3
		15

Spring Senior		
ECE 486	Digital Signal Processing	4
HON 499	Honors Thesis	3
Elective	ECE Technical Elective (1)	3
Elective	ECE Technical Elective (2)	3
		13

Total Credit Hours	**125**

ECE
Math & Science
English
Honors

Electrical Engineering 2024-2025 (Class of 2028)

Alternate 4-year plans for Honors, CEN/ELE double majors, and for students taking Pre-Calculus in their first semester are available on the ECE Web site: https://ece.umaine.edu/undergraduate/electrical-engineering-curriculum/

Fall First Year		
CHY 121 | CHY 131	Chemistry	3
CHY 123 | CHY 133	Chemistry Lab	1
CMJ 103	Fund of Public Communication Human Values	3
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
MAT 126	Calculus I	4
		15

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
ENG 101	College Composition	3
MAT 127	Calculus II	4
PHY 121	Physics for Engineers I	4
		15

Fall Sophomore		
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
Elective	HV & SC (1)	3
MAT 228	Calculus III	4
PHY 122	Physics for Engineers II	4
		18

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
ECE 351	Fields and Waves	3
MAT 258	Diff Eqn. & Linear Algebra	4
Elective	HV & SC (2)	3
		17

Fall Junior		
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
Elective	ECE Technical Elective (1)	3
		13

Spring Junior		
ECE 343	Electronics II	4
ECE 401	Design Project	2
ECE 486	Digital Signal Processing	4
Elective	Electrical Focus (1)	3
Elective	ECE Technical Elective (2)	3
		16

Fall Senior		
ECE 402	Design Project II	4
Elective	Electrical Focus (2)	3
Elective	Generic Focus (1)	3
Elective	Generic Focus (2)	3
Elective	HV & SC (3)	3
		16

Spring Senior		
ECE 403	Design Project III	2
ECE 414	Feedback Control Systems	3
Elective	Electrical Focus (3)	3
Elective	HV & SC (4)	3
Elective	HV & SC (5)	3
		14

Total Credit Hours	**124**

ECE
Math & Science
English

HV & SC Electives must satisfy the following categories	
Soc. Contexts and Inst (satisfied by CMJ 103)	✓
Cultural Diversity & International Perspectives	
Western Cultural Tradition	
Population and the Environment	
Artistic & Creative Expression	
Ethics	

Electrical Engineering with Honors 2024-2025 (Class of 2028)

See: https://ece.umaine.edu/undergraduate/honors-program/

Fall First Year		
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
HON 111	Civilizations I	4
MAT 126	Calculus I	4
PHY 121	Physics for Engineers I	4
		16

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
HON 112	Civilizations II	4
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		16

Fall Sophomore		
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
HON 211	Civilizations III	4
MAT 228	Calculus III	4
		15

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
ECE 351	Fields and Waves	3
HON 212	Civilizations IV	4
MAT 258	Diff Eqn. & Linear Algebra	4
		18

Fall Junior		
CHY 121 | CHY 131	Chemistry	3
CHY 123 | CHY 133	Chemistry Lab	1
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
HON 180	A Cultural Odyssey	1
		15

Spring Junior		
ECE 343	Electronics II	4
ECE 401	Design Project	2
ECE 486	Digital Signal Processing	4
HON 3XX	Honors Tutorial	3
Elective	Electrical Focus (1)	3
HON 170	Currents and Context	1
HON 391	Intro to Thesis Research	1
		18

Fall Senior		
HON 498	Honor Directed Study	3
Elective	Electrical Focus (2)	3
Elective	ECE Technical Elective (1)	3
Elective	Generic Focus (1)	3
Elective	Generic Focus (2)	3
		15

Spring Senior		
ECE 414	Feedback Control Systems	3
HON 499	Honors Thesis	3
Elective	Electrical Focus (3)	3
Elective	ECE Technical Elective (2)	3
		12

Total Credit Hours	**125**

ECE
Math & Science
English
Honors

Double Major 2024-2025 (Class of 2028)

Fall First Year		
CHY 121 | CHY 131	Chemistry	3
CHY 123 | CHY 133	Chemistry Lab	1
CMJ 103	Fund of Public Communication Human Values	3
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
MAT 126	Calculus I	4
Elective	HV & SC (1)	3
		18

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
ENG 101	College Composition	3
MAT 127	Calculus II	4
PHY 121	Physics for Engineers I	4
Elective	HV & SC (2)	3
		18

Fall Sophomore		
ECE 277	Programming II: From Hardware to Objects	4
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
MAT 228	Calculus III	4
PHY 122	Physics for Engineers II	4
		19

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
ECE 351	Fields and Waves	3
MAT 258	Diff Eqn. & Linear Algebra	4
Elective	HV & SC (3)	3
		17

Fall Junior		
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
Elective	Computer Focus (1)	3
ECE 471	Embedded Systems	3
		16

Spring Junior		
ECE 343	Electronics II	4
ECE 401/5	Design Project	2
Elective	Computer Focus (2)	3
ECE 486	Digital Signal Processing	4
Elective	Electrical Focus (1)	3
		16

Fall Senior		
ECE 402/6	Design Project II	4
ECE 473	Computer Architecture & Org	4
MAT 481| COS 250	Discrete Mathematics | Discrete Structures	3
Elective	Electrical Focus (2)	3
Elective	Computer Focus (3)	3
		17

Spring Senior		
ECE 331 | COS 331	Embedded Operating System Design | Operating Systems	3
ECE 403	Design Project III	2
ECE 414	Feedback Control Systems	3
Elective	Electrical Focus (3)	3
Elective	HV & SC (4)	3
Elective	HV & SC (5)	3
		17

Total Credit Hours	**138**

ECE
Math & Science
English

One capstone sequence (not both) is required for the double major. Students must complete the sequence associated with their "Primary" major. ELE Majors complete ECE 401/402. CEN Majors complete ECE 405/406.

HV & SC Electives must satisfy the following categories	
Soc. Contexts and Inst (satisfied by CMJ 103)	✓
Cultural Diversity & International Perspectives	
Western Cultural Tradition	
Population and the Environment	
Artistic & Creative Expression	
Ethics	

Double Major with Honors 2024-2025 (Class of 2028)

See: https://ece.umaine.edu/undergraduate/honors-program/

Fall First Year		
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
HON 111	Civilizations I	4
MAT 126	Calculus I	4
PHY 121	Physics for Engineers I	4
		16

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
HON 112	Civilizations II	4
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		16

Fall Sophomore		
ECE 277	Programming II: From Hardware to Objects	4
ECE 210	Electric Circuits I	4
ECE 271	Micro Arch & Applications	4
HON 211	Civilizations III	4
MAT 228	Calculus III	4
		20

Spring Sophomore		
ECE 214	Electric Circuits II	3
ECE 275	Sequential Logic Systems	3
ECE 351	Fields and Waves	3
HON 212	Civilizations IV	4
MAT 258	Diff Eqn. & Linear Algebra	4
		17

Fall Junior		
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
ECE 471	Embedded Systems	3
HON 180	A Cultural Odyssey	1
		14

Spring Junior		
ECE 343	Electronics II	4
ECE 401/5	Design Project	2
Elective	Computer Focus (1)	3
ECE 486	Digital Signal Processing	4
HON 3XX	Honors Tutorial	3
HON 391	Intro to Thesis Research	1
		17

Fall Senior		
ECE 473	Computer Architecture & Org	4
HON 498	Honor Directed Study	3
MAT 481| COS 250	Discrete Mathematics | Discrete Structures	3
Elective	Electrical Focus (1)	3
Elective	Computer Focus (2)	3
		16

Spring Senior		
ECE 331 | COS 331	Embedded Operating System Design | Operating Systems	3
ECE 414	Feedback Control Systems	3
HON 499	Honors Thesis	3
Elective	Electrical Focus (2)	3
HON 170	Currents and Context	1
		13

Fall 5th Year		
CHY 121 | CHY 131	Chemistry	3
CHY 123 | CHY 133	Chemistry Lab	1
Elective	Computer Focus (4)	3
Elective	Electrical Focus (3)	3
		10

Total Credit Hours	**139**

ECE
Math & Science
English
Honors

One capstone sequence (not both) is required for the double major. Students must complete the sequence associated with their "Primary" major. ELE Primary Majors complete ECE 401/402. CEN Primary Majors complete ECE 405/406.

Electrical Engineering: Power Engineering 2024-2025 (Class of 2028)

Fall First Year		
CHY 121 | CHY 131	Chemistry	3
CHY 123 | CHY 133	Chemistry Lab	1
CMJ 103	Fund of Public Communication Human Values/Social Context	3
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
MAT 126	Calculus I	4
		15

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
ENG 101	College Composition	3
MAT 127	Calculus II	4
PHY 121	Physics for Engineers I	4
		15

Fall Sophomore		
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
Elective	HV & SC (1) - Western Cultural Tradition	3
MAT 228	Calculus III	4
PHY 122	Physics for Engineers II	4
		18

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
EET 321	Electro-Mechanical Energy Conversion	4
MAT 258	Diff Eqn. & Linear Algebra	4
		15

Fall Junior		
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
ECE 427	Electric Power Systems	4
EET 460	Renewable Energy and Electricity Production	3
		17

Spring Junior		
ECE 343	Electronics II	4
ECE 401	Design Project	2
ECE 414	Feedback Control Systems	3
ECE 351	Fields and Waves	3
ECE xxx	Suggest: Adv Controls, Cybersecurity, ...	3
		15

Fall Senior		
ECE 402	Design Project II	4
ECE 450	Power Electronics	3
ECE 428	Smart Grid and Enabling Technologies	3
Elective	HV & SC (4) Artistic & Creative Expression	3
Elective	HV & SC (3) Cultural Diversity & International Perspectives	3
		16

Spring Senior		
ECE 403	Design Project III	2
ECE 486	Digital Signal Processing	4
ECE 455	Electric Drives	3
Elective	HV & SC (5) Ethics	3
EET 423	Protective Relay Applications	3
		15

Total Credit Hours	**126**

ECE
Math & Science
English
Gen Ed

Electrical Focus Tech Elective
Electrical Focus Tech Elective
Electrical Focus Tech Elective
ECE Tech Elective
ECE Tech Elective
Generic Focus Tech Elective
Generic Focus Tech Elective
HV & SC (2) Population and Environment Elective

Suggested Electives for Power Engineering		
ECE 427	Electric Power Systems	4
ECE 428	Smart Grid and Enabling Technologies	3
ECE 450	Power Electronics	3
ECE 455	Electric Drives	3
ECE xxx	Suggest: Adv Controls, Cybersecurity, Neural Networks ...	3
EET 321	Electro-Mechanical Energy Conversion	4
EET 423	Protective Relay Applications	3
EET 460	Renewable Energy and Electricity Production	

Computer Engineering with Pre-Calculus 2024-2025 (Class of 2028)

Fall First Year		
CMJ 103	Fund of Public Communication Human Values	3
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
MAT 122	Pre-Calculus	4
Elective	HV & SC (1)	3
		14

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
ENG 101	College Composition	3
MAT 126	Calculus I	4
PHY 121	Physics for Engineers 1	4
		15

Fall Sophomore		
ECE 277	Programming II: From Hardware to Objects	4
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		19

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
Elective	Generic Focus (1)	3
MAT 258	Diff Eqn. & Linear Algebra	4
Elective	HV & SC (2)	3
		17

Fall Junior		
ECE 342	Electronics I	4
ECE 473	Computer Architecture & Org	4
ECE 314	Signals and Systems	3
MAT 228	Calculus III	4
		15

Spring Junior		
ECE 331 | COS 331	Embedded Operating System Design | Operating Systems	3
ECE 405	Design Project	2
Elective	Computer Focus (1)	3
Elective	Computer Focus (2)	3
Elective	HV & SC (3)	3
Elective	HV & SC (4)	3
		17

Fall Senior		
ECE 406	Design Project II	4
ECE 471	Embedded Systems	3
MAT 481| COS 250	Discrete Mathematics | Discrete Structures	3
Elective	Computer Focus (3)	3
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
		16

Spring Senior		
ECE 403	Design Project III	2
ECE 486	Digital Signal Processing	4
Elective	ECE Technical Elective (1)	3
Elective	ECE Technical Elective (2)	3
Elective	HV & SC (5)	3
		15

Total Credit Hours	**128**

ECE
Math & Science
English

HV & SC Electives must satisfy the following categories	
Soc. Contexts and Inst (satisfied by CMJ 103)	✓
Cultural Diversity & International Perspectives	
Western Cultural Tradition	
Population and the Environment	
Artistic & Creative Expression	
Ethics	

Electrical Engineering with Pre-Calculus 2024-2025 (Class of 2028)

Fall First Year		
CHY 121	Chemistry	3
CHY 123	Chemistry Lab	1
CMJ 103	Fund of Public Communication Human Values	3
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
MAT 122	Pre-Calculus	4
		15

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
ENG 101	College Composition	3
MAT 126	Calculus I	4
PHY 121	Physics for Engineers I	4
		15

Fall Sophomore		
ECE 210	Electric Circuits I	3
ECE 271	Micro Arch & Applications	4
Elective	HV & SC (1)	3
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		18

Spring Sophomore		
ECE 214	Electric Circuits II	4
ECE 275	Sequential Logic Systems	3
Elective	HV & SC (2)	3
MAT 258	Diff Eqn. & Linear Algebra	4
Elective	HV & SC (3)	3
		17

Fall Junior		
ECE 316 | STS 332	Random Signal Analysis |Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
Elective	ECE Technical Elective (1)	3
MAT 228	Calculus III	4
		17

Spring Junior		
ECE 343	Electronics II	4
ECE 401	Design Project	2
ECE 486	Digital Signal Processing	4
Elective	Electrical Focus (1)	3
ECE 351	Fields and Waves	3
		16

Fall Senior		
ECE 402	Design Project II	4
Elective	Electrical Focus (2)	3
Elective	Generic Focus (2)	3
Elective	Generic Focus (1)	3
Elective	HV & SC (4)	3
		16

Spring Senior		
ECE 403	Design Project III	2
ECE 414	Feedback Control Systems	3
Elective	Electrical Focus (3)	3
Elective	ECE Technical Elective (2)	3
Elective	HV & SC (5)	3
		14

Total Credit Hours	**128**

ECE
Math & Science
English

HV & SC Electives must satisfy the following categories	
Soc. Contexts and Inst (satisfied by CMJ 103)	✓
Cultural Diversity & International Perspectives	
Western Cultural Tradition	
Population and the Environment	
Artistic & Creative Expression	
Ethics	