

**Graduation Check-Off Sheet, Electrical Engineering, Year 2024-2025 (Class of 2028)**

Student: \_\_\_\_\_ Advisor: \_\_\_\_\_

<b>General Requirements:</b>	124 Credits minimum Passing grades in all courses	Overall GPA 2.0 or above Departmental GPA 2.0 or above
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**Required Courses**

ENG 101 _____	ECE 100 _____	Statistics (Select one)	ECE 414 _____
CHY 121/131 _____	ECE 101 _____	ECE 316 _____	ECE 486 _____
CHY 123/133 _____	ECE 177 _____	STS 332 _____	ECE 401 _____
PHY 121 _____	ECE 210 _____	CHE 350 _____	ECE 402 _____
PHY 122 _____	ECE 214 _____		ECE 403 _____
MAT 126 _____	ECE 271 _____		
MAT 127 _____	ECE 275 _____	ECE 342 _____	
MAT 228 _____	ECE 314 _____	ECE 343 _____	
MAT 258 _____		ECE 351 _____	

**Technical Electives (At Least 21 Credit Hours Total) (Partial List of Courses)**

**ECE Technical Electives (At least 15 Credits)**

**Electrical Focus Technical Electives (At Least 9 Credits)**

_____ ECE 427	Electric Power Systems	_____ ECE 462	Intro to Basic Semi. Devices/Models
_____ ECE 444	Analog Integrated Circuits	_____ ECE 464	Microelectronics Science and Engineering
_____ ECE 445	Analysis and Design of Digital Int. Circuits	_____ ECE 465	Introduction to Sensors
_____ ECE 450	Power Electronics	_____ ECE 466	Sensor Technology and Instrumentation
_____ ECE 453	Microwave Engineering	_____ ECE 467	Solar Cells and Their Applications
_____ ECE 455	Electric Drives	_____ ECE 484	Communications Engineering
_____ ECE 456	Electric Drives Lab	_____ ECE 498	Sel. Topics (ELE "focus" subject to approval)
_____ ECE 457	Nanoscience	_____ ECE 498	Sel. Topics (ELE "focus" subject to approval)

**Other ECE Technical Electives**

_____ ECE 316	Random Signal Analysis	_____ ECE 473	Computer Architecture and Organization
_____ ECE 331	Embedded Operating System Design	_____ ECE 491	Deep Learning
_____ ECE 417	Mobile Robotics	_____ ECE 498	Selected Topics
_____ ECE 435	Network Engineering	_____ ECE 498	Selected Topics
_____ ECE 471	Embedded Systems		

**Generic Technical Electives**

Grade _____	Credits _____	Course # _____	Title: _____
Grade _____	Credits _____	Course # _____	Title: _____

**General Education Requirements (At least 18 credits of HV&SC;  
All HV&SC categories covered at least once; At least one course satisfying Ethics)**

Course #	Credits	Grade	Human Values and Social Context (HV&SC)					Ethics
			Western Culture	Social Context	Cultural Div.	Pop & Env.	Artistic Exp.	
CMJ 103	3			x				

## Electrical Engineering Curriculum Notes

*This check sheet is meant to serve as a convenience. The actual graduation requirements for any student are governed by the Undergraduate Catalog published in the year in which the student enrolls as an Electrical/Computer Engineering student. Every effort is made to ensure that the sheet is consistent with the corresponding catalog. When in doubt, the catalog is the authoritative source of information.*

The complete list of approved technical electives (all categories), program flow-charts, and four-year suggested plans is available on the ECE website: <https://ece.umaine.edu/undergraduate/electrical-engineering-curriculum/>

### Technical Electives

The program requires 21 credits of technical electives to allow technical specialization within the field. Technical electives are divided into three increasingly broad categories: "Electrical Focus"; "ECE Technical Electives"; and "Generic Technical Electives". Courses used as "Technical Electives" may not be used to satisfy any other degree requirements.

"**Electrical Focus**" electives (9 credits minimum) are specific ECE upper level courses (300, 400, or 500 level) which have been approved as having an Electrical Engineering (as opposed to Computer Engineering) focus.

"**ECE Technical Electives**" include all "Electrical Focus" electives, and other approved ECE courses at the 300, 400, or 500 level. At least 15 credits of the selected technical electives (including the "Electrical Focus" electives) must be "ECE Technical Electives".

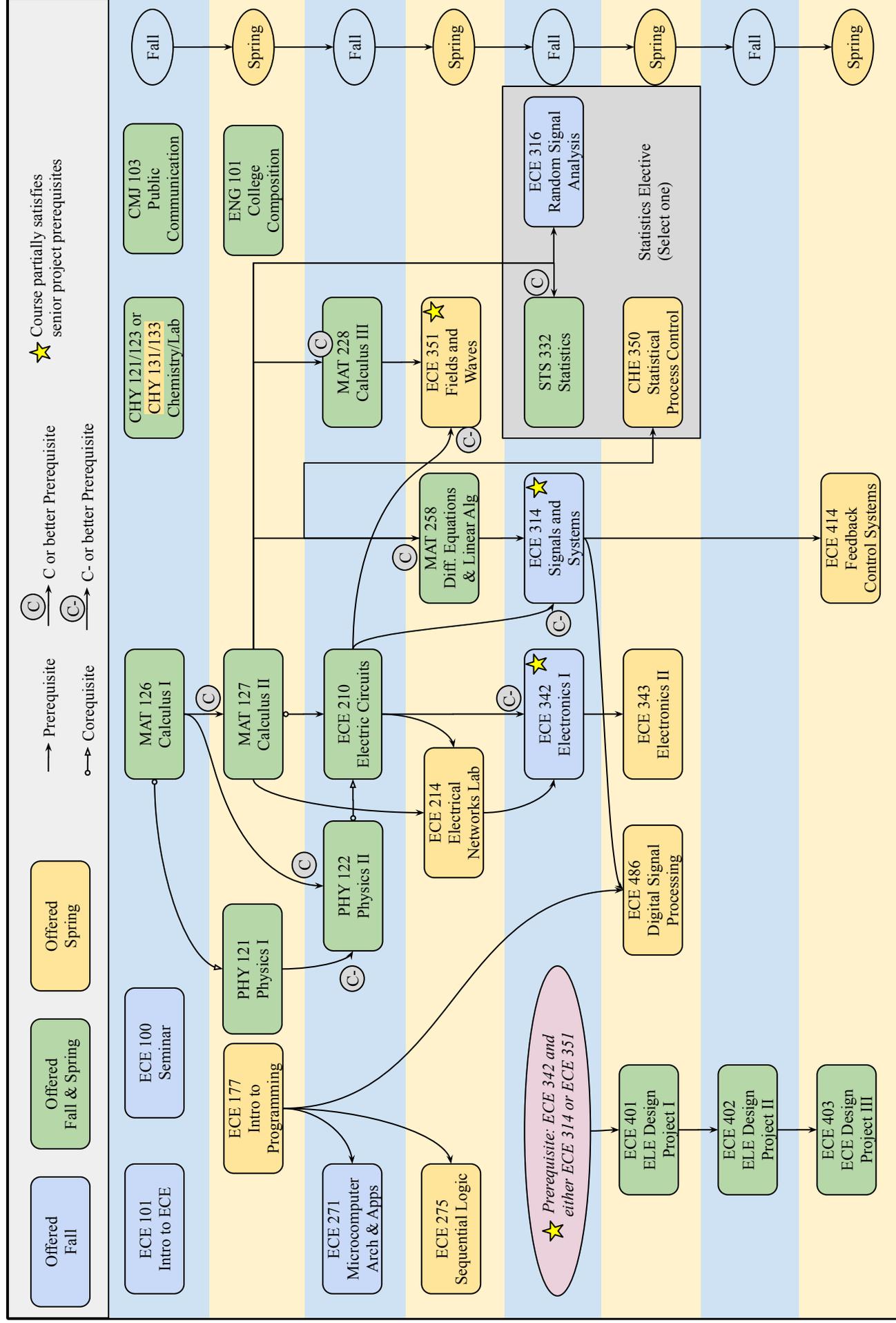
"**Generic Technical Electives**" include all "ECE Technical Electives", a few additional ECE courses that have not have been approved in the above categories, and many courses that are offered by other departments. These courses (up to 6 credits) may be used to complete the 21 credit Technical Elective requirement. "Generic Technical Electives" include:

- Any ECE Technical Elective (regardless of focus)
- Any 300, 400, or 500-level course with the designation ECE, COS, CHY, PHY, BIO, BMB, BEN, CHE, CIE GEE, MAT, STS, or BUA.
- Some additional courses that have been pre-approved (including some lower-level courses and selected EET courses). See the ECE website for the list of approved courses.

### General Education Requirements

The University requires that all students successfully complete at least 18 credit hours of designated general education courses associated with Human Values and Social Context (HV&SC). These 18 credit hours must encompass the five content areas (i) western cultural tradition, (ii) social contexts and institutions, (iii) cultural diversity and international perspectives, (iv) population and the environment, and (v) artistic and creative expression. The required CMJ 103 course meets the social contexts and institutions content area requirement. Each of the five content areas must be covered. Within these general education courses, students must also take one course that satisfies the Ethics requirement. Information regarding general education requirements can be found on the Office of Student Records web page. (Note that all other general education requirements beyond HV&SC and Ethics are met by the required ECE curriculum.)

# Electrical Engineering Curriculum Flowchart



**Human Values and Social Context Electives (15 credits in addition to CMJ 103).**

- Each course satisfies at least one of five sub-categories.
- Each sub-category must be satisfied at least once.
- Include "Ethics" in at least one course if not elsewhere in course selections.

Sub-categories: HV&SC, HV&SC, HV&SC, HV&SC, HV&SC Elective

**Technical Electives (21 credits)**

**ECE Technical Electives (15 credits)**

- Electrical Focus Technical Electives (9 credits)
  - Electrical Focus
  - Electrical Focus Electives
- Electrical Focus or other ECE Electives
- Electrical Focus or other ECE or Generic Elective

## 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
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<b>ECE</b>
<b>Math &amp; Science</b>
<b>English</b>

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	