Graduation Check–Off Sheet, Computer Engineering, Year 2024-2025 (Class of 2028)

Student: _____   Advisor: _____

General Requirements:	124 Credits minimum Passing grades in all courses	Overall GPA 2.0 or above Departmental GPA 2.0 or above

Required Courses

ENG 101 _____	ECE 100 _____	ECE 277 _____	ECE 342 _____
PHY 121 _____	ECE 101 _____	ECE 314 _____	ECE 471 _____
PHY 122 _____	ECE 177 _____		ECE 473 _____
MAT 126 _____	ECE 210 _____	**Statistics (Select one)**	ECE 486 _____
MAT 127 _____	ECE 214 _____	ECE 316 _____	
MAT 228 _____	ECE 271 _____	STS 332 _____	ECE 405 _____
MAT 258 _____	ECE 275 _____	CHE 350 _____	ECE 406 _____
			ECE 403 _____

Discrete Math Elective (Select one)
MAT 481 _____
COS 250 _____

OS Elective (Select one)
ECE 331 _____
COS 331 _____

Technical Electives (At Least 18 Credit Hours Total) (Partial List of Courses)

ECE Technical Electives (At least 15 Credits)

Computer Focus Technical Electives (At Least 9 Credits)

_____	ECE 417	Mobile Robotics	_____	COS 3xx _____
_____	ECE 435	Network Engineering	_____	COS 3xx _____
_____	ECE 491	Deep Learning	_____	COS 4xx _____
_____	ECE 479	Advanced Cybersecurity	_____	COS 4xx _____
_____	ECE 498	Sel. Topics (CEN "focus" subject to approval)	_____	COS 4xx _____

Other ECE Technical Electives

_____	ECE 316	Random Signal Analysis	_____	ECE 455	Electric Drives
_____	ECE 323	Electric Power Conversion	_____	ECE 457	Nanoscience
_____	ECE 343	Electronics II	_____	ECE 462	Intro Basic Semiconductor Devices
_____	ECE 351	Fields and Waves	_____	ECE 464	Microelectronics Science and Engineering
_____	ECE 414	Feedback Control Systems	_____	ECE 465	Introduction to Sensors
_____	ECE 427	Electric Power Systems	_____	ECE 466	Sensor Technology and Instrumentation
_____	ECE 444	Analog Integrated Circuits	_____	ECE 467	Solar Cells and Their Applications
_____	ECE 445	Analysis and Design of Digital Integrated Circuits	_____	ECE 484	Communications Engineering
_____	ECE 450	Power Electronics	_____	ECE 498	Selected Topics
_____	ECE 453	Microwave Engineering	_____	ECE 498	Selected Topics

Generic Technical Electives

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				

Computer 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/computer-engineering-curriculum/

Technical Electives

The program requires 18 credits of technical electives to allow technical specialization within the field. Technical electives are divided into three increasingly broad categories: "Computer Focus"; "ECE Technical Electives"; and "Generic Technical Electives". Courses used as "Technical Electives" may not be used to satisfy any other degree requirements.

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

"**ECE Technical Electives**" include all "Computer 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 "Computer Focus" electives) must be "ECE Technical Electives".
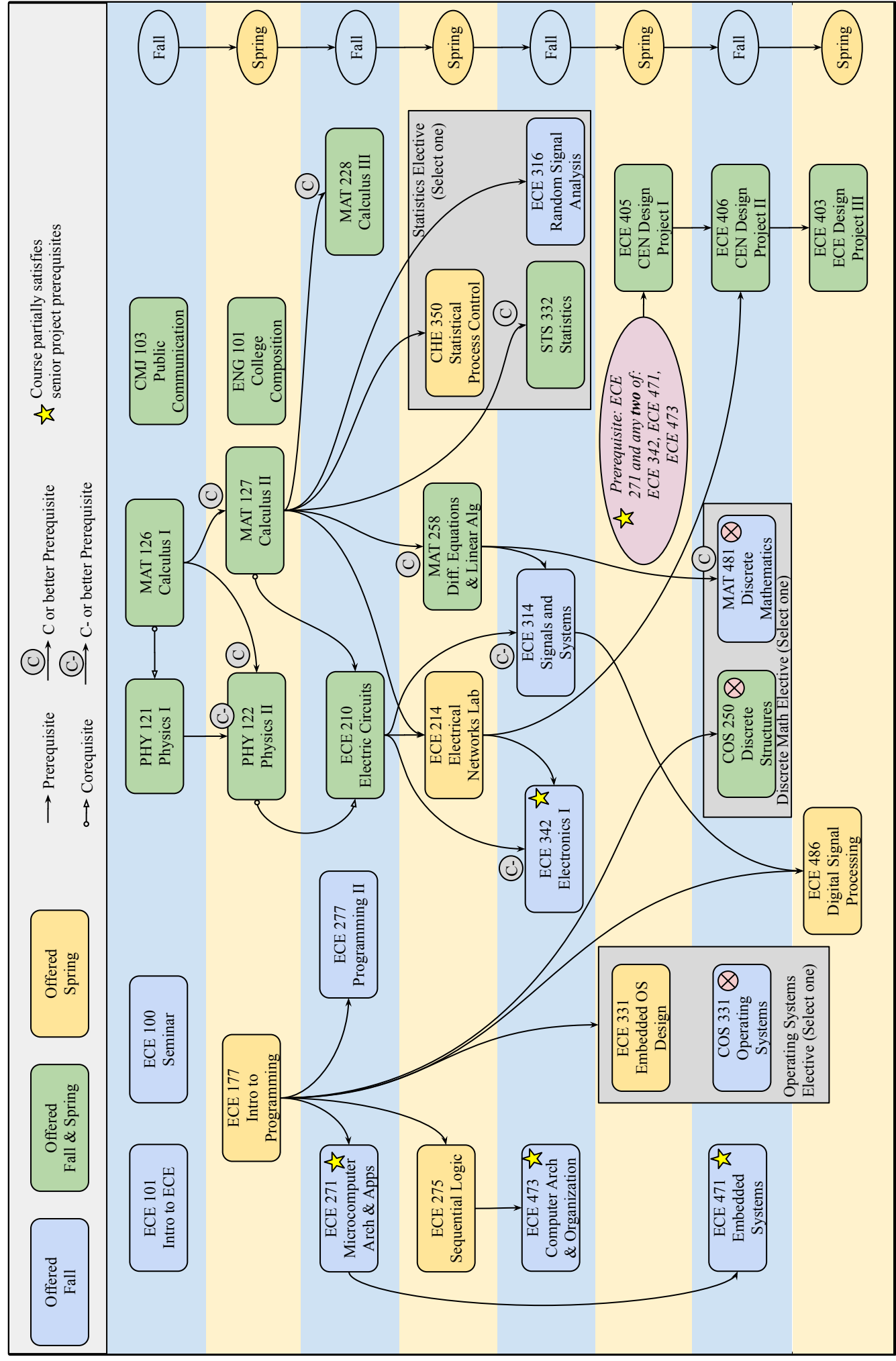
"**Generic Technical Electives**" include all "ECE Technical Electives", a few additional ECE courses that have not have been approved in the above categories, and many courses that are offered by other departments. These courses (up to 3 credits) may be used to complete the 18 credit Technical Elective 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.)

Computer Engineering Curriculum Flowchart

Legend:
- Offered Fall
- Offered Spring
- Offered Fall & Spring
- Offered Spring
- Offered Fall
- → Prerequisite
- ⇢ Corequisite
- Ⓒ → C or better Prerequisite
- Ⓒ⁻ → C- or better Prerequisite
- ⭐ Course partially satisfies senior project prerequisites

Human Values and Social Context Electives (15 credits in addition to CMJ 103).
- HV&SC Elective (multiple)
- HV&SC Elective

- 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.

Technical Electives (18 credits)
- ECE Technical Electives (15 credits)
- Computer Focus Technical Electives (9 credits)
- Computer Focus Electives (10 Credits)
- Computer Focus or Computer Focus or other ECE Electives
- Computer Focus or other ECE or Generic Elective

Semester sequence: Fall → Spring → Fall → Spring → Fall → Spring → Fall → Spring

Courses

- ECE 101 Intro to ECE
- ECE 100 Seminar
- MAT 126 Calculus I
- PHY 121 Physics I
- CMJ 103 Public Communication
- ECE 177 Intro to Programming
- ECE 277 Programming II
- MAT 127 Calculus II
- PHY 122 Physics II
- ECE 210 Electric Circuits
- ENG 101 College Composition
- MAT 228 Calculus III
- ECE 271 Microcomputer Arch & Apps ⭐
- ECE 275 Sequential Logic
- ECE 214 Electrical Networks Lab
- MAT 258 Diff. Equations & Linear Alg
- ECE 314 Signals and Systems
- CHE 350 Statistical Process Control
- Statistics Elective (Select one)
  - STS 332 Statistics
  - ECE 316 Random Signal Analysis
- ECE 473 Computer Arch & Organization ⭐
- ECE 342 Electronics I ⭐
- ECE 471 Embedded Systems ⭐
- ECE 486 Digital Signal Processing
- COS 250 Discrete Structures ⊗
- MAT 481 Discrete Mathematics ⊗
- Discrete Math Elective (Select one)
- ECE 331 Embedded OS Design
- COS 331 Operating Systems ⊗
- Operating Systems Elective (Select one)
- **Prerequisite: ECE 271 and any two of: ECE 342, ECE 471, ECE 473** ⭐
- ECE 405 CEN Design Project I
- ECE 406 CEN Design Project II
- ECE 403 ECE Design Project III

⊗ Enrollment in these courses requires permission of the department offering the course

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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	

3/12/2025