



## Computer Engineering Curriculum Notes

1. **ECE Technical Electives:** At least 16 credit hours of ECE technical elective courses are required. Of these, 10 must be CE focus courses chosen from the following list. The remaining credit hours can be any 300, 400, or 500 level ECE courses, excluding ECE 394.

<b>CE Focus Courses</b>	ECE 498 Selected Topics (CE focus)
ECE 417 Intro to Robotics	ECE 435 Network Engineering
ECE 478 Industrial Computer Control	COS 3____
ECE471 Embedded Systems	COS 4____
or ECE 477 Hardware Applications in C	COS 4____

2. **Generic Technical Electives:** 3 credit hours of generic technical electives are required. These courses include 300 and 400 level ECE courses, as well as other engineering, science, computer science, mathematics, and business courses that are approved by your advisor or the department Chair. The courses listed below are approved exceptions to the above guidelines.

<b>Generic Technical Electives Exceptions</b>	ECE 198 Selected Topics in ECE
CHE 200 Fundamentals of Process Engineering	MEE 252 Statics and Strength of Materials
CIE 231 Fundamentals of Environmental Eng.	MEE 270 Applied Mechanics: Dynamics
GEE 230 Intro to Leadership and Management	INV 180 Create: Innovation Engineering I
PHY 236 Introductory Quantum Physics	INV 282 Communicate: Innovation Engineering II
MEE 150 Applied Mechanics: Statics	INV 392 Commercialize: Innovation Engineering III
MEE 230 Thermodynamics I	EET 276 Programmable Logic Controllers
EET 321 Electro-Mechanical Energy Conversion	EET 386 Project Management
EET 414 Introduction to Printed Circuit Boards	EET 460 Renewable Energy & Electricity Production
PPA 264 Intro to Pulp and Paper Industry	

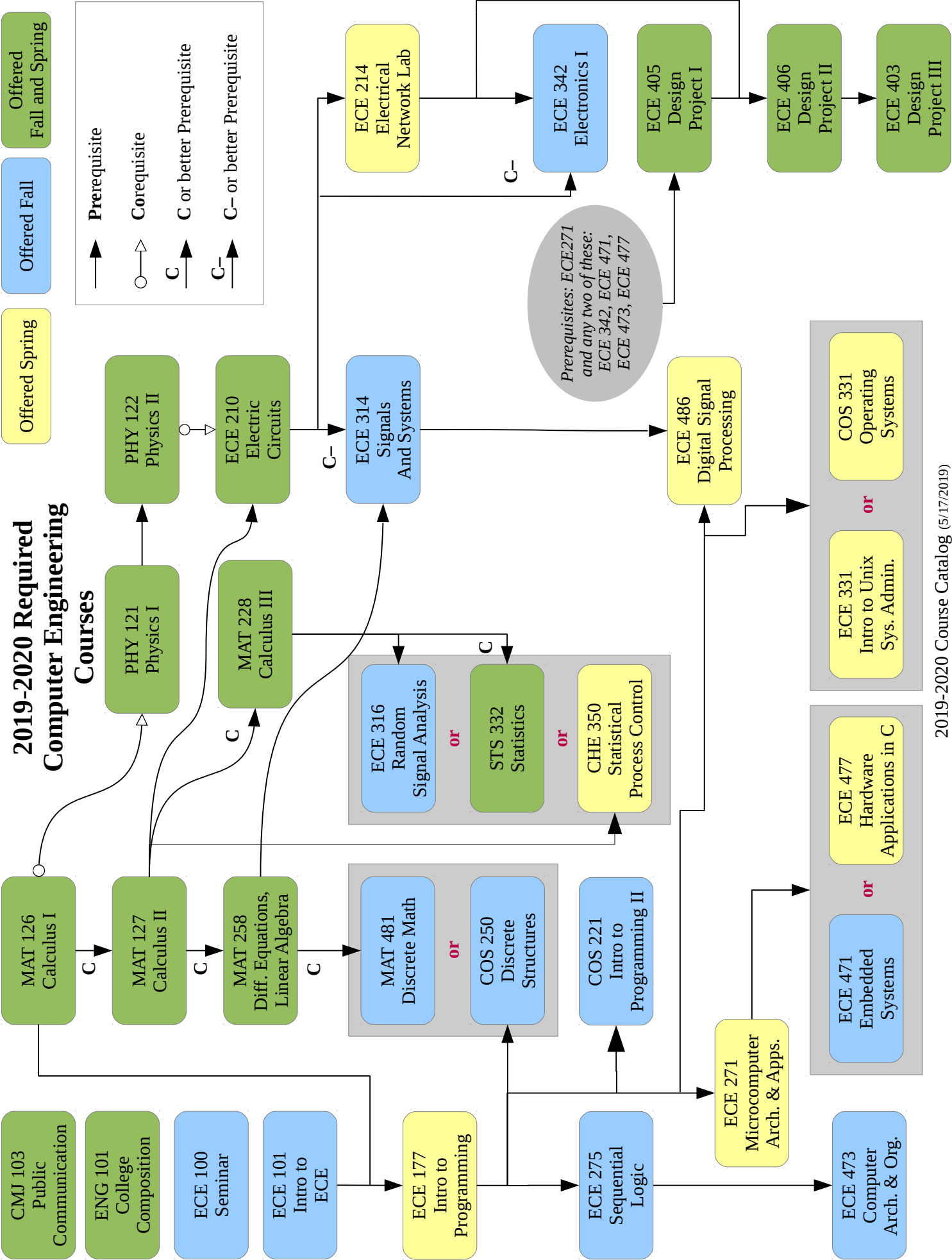
3. **General Education Requirements:** The University requires that all students successfully complete at least 18 credit hours of designated general education courses associated with Human Values and Social Context (HV&SC). These 18 credit hours must encompass the five content areas (i) western cultural 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 ECE ethics requirement. Information regarding general education requirements can be found on the Office of Student Records web page. (Note that all other University general education requirements beyond HV&SC are met by the required ECE curriculum.)

4. One of ECE 471 or ECE 477 counts as a required course. The other is a CE focus technical elective.

5. With advisor approval, you may petition the ECE faculty for an exception to any ECE requirement.

6. For more complete information regarding the ECE curriculum, see the Computer Engineering section of UMaine online undergraduate catalog.

# 2019-2020 Required Computer Engineering Courses



# 2019-2020 Computer Engineering Technical Electives

Offered Spring  
(prerequisites)

Offered Fall  
(prerequisites)

Offered  
Fall and Spring  
(prerequisites)

**CE Focus Technical Electives: You must take at least *three* of these**

ECE 417 Introduction to Robotics (ECE177 & MAT228)	ECE 471 Embedded Systems (ECE271)	ECE 478 Industrial Computer Control (ECE271)	COS 3xx Computer Science Elective (varies)
ECE 435 Network Engineering (ECE331 or ECE471)	ECE 477 Hardware Applications in C (ECE277)	ECE 498 Selected Topics with CE focus (varies)	COS 4xx Computer Science Elective (varies)

If you wish to specialize in an area, some possibilities are:

**Embedded Control**  
ECE478, ECE477,  
ECE471, ECE414

**High Performance Computing**  
ECE331, ECE477

**Robotics**  
ECE417, ECE477,  
ECE471, ECE487

ECE 414  
Feedback  
Control Systems  
(ECE314)

ECE 351  
Fields and  
Waves  
(ECE210 & MAT228)

ECE 453  
Microwave  
Engineering  
(ECE351)

ECE 484  
Communications  
Engineering  
(ECE314 & ECE316)

ECE 323  
Electric  
Power Conversion  
(ECE214 & C- in ECE210)

ECE 427  
Electric Power  
Systems  
(C- in ECE210)

ECE 444  
Analog IC  
Design  
(ECE314 & ECE343)

ECE 445  
Digital IC  
Design  
(ECE342)

ECE 462  
Semiconductor  
Devices  
(Chy131,PHY122,MAT258)

ECE 464  
Microelectronics  
Engineering  
(Chy131,PHY122,MAT258)

ECE 465  
Introduction to  
Sensors  
(junior standing)

ECE 498  
Selected Topics  
(varies)

Other Courses  
with  
Adviser Approval  
(varies)

ECE 466  
Sensor Technology  
and Instrumentation  
(ECE 465)

## Computer Engineering 2019-2020 (Class of 2023)

Fall First Year		
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
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		
COS 221	Intro to Computer Science II	3
ECE 210	Electrical Networks I	4
ECE 275	Sequential Logic Systems	3
MAT 228	Calculus III	4
Elective	HV & SC (1) Cultural Diversity & International Perspectives	3
		17

Spring Sophomore		
ECE 214	Electrical Networks Lab	3
ECE 271	Micro Arch & Applications	4
Elective	Generic Focus (1)	3
MAT 258	Diff Eqn. & Linear Algebra	4
Elective	HV & SC (2) - Western Cultural Tradition	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	Introduction to UNIX Systems Administration   Operating Systems	3
ECE 405	Design Project	2
ECE 477   Elective	Hardware Applications in C   Computer Focus (1)	3
Elective	Computer Focus (2)	3
Elective	HV & SC (3) Population and the Environment	3
Elective	HV & SC (4) Artistic & Creative Expression	3
		17

Fall Senior		
ECE 406	Design Project II	4
ECE 471   Elective	Embedded Systems   Computer Focus (1)	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	Computer Focus (4)	1
Elective	ECE Technical Elective (2)	3
Elective	HV & SC (5) Ethics	3
		13

Total Credit Hours	<b>124</b>
--------------------	------------

ECE
Math & Science
English
Gen Ed