

Graduation Check–Off Sheet, Computer Engineering, Year 2016-2017 (Class of 2020)

Student: _____

Advisor: _____

1. Total credit hours \geq 124 _____

3. Overall GPA \geq 2.0 _____

2. Passing grade in all courses _____

4. Department GPA \geq 2.0 _____

Required Courses (enter grades)

ENG 101 _____	ECE 100 _____	COS 221 _____	ECE 342 _____
PHY 121 _____	ECE 101 _____	ECE 314 _____	ECP 342 _____
PHY 122 _____	ECE 177 _____	ECE 316 _____	ECE 473 _____
MAT 126 _____	ECE 210 _____	or STS 332 _____	ECE 486 _____
MAT 127 _____	ECE 214 _____	or CHB 350 _____	
MAT 228 _____	ECP 214 _____	ECE 331 _____	ECE 405 _____
MAT 258 _____	ECE 271 _____	or COS 331 _____	ECE 406 _____
MAT 481 _____	ECE 275 _____	ECE 471 _____	ECE 403 _____
or COS 250 _____		or ECE 477 _____	ECP 403 _____

ECE Technical Electives (16 credit hours, at least 10 of which must be CE focus)

CE focus: (3 cr. hrs. unless noted otherwise)	_____ COS 3 _____
_____ ECE 417 Intro to Robotics	_____ COS 3 _____
_____ ECE 478 Industrial Computer Control	_____ COS 4 _____
_____ ECE 471 Microprocessor Applications	_____ COS 4 _____
or _____ ECE 477 Hardware Applications in C	_____ ECE 498 (CE focus) _____
	_____ ECE 498 (CE focus) _____
Other ECE courses, non-CE focus: (partial list)	
_____ ECE 343 Electronics II (4 cr.)	_____ ECE 465 Intro to Sensors
_____ ECE 351 Fields and Waves	_____ ECE 4 _____
_____ ECE 414 Feedback Control Systems	_____ ECE 4 _____
_____ ECE 323 Electric Power Conversion	_____ ECE 4 _____
_____ ECE 427 Electric Power Systems	_____ ECE 498 _____

Generic Technical Electives (3 credit hours of at least 300 level courses with advisor approval)

Course: _____ cr. hrs.: ____ grade: _____	Course: _____ cr. hrs.: ____ grade: _____
Course: _____ cr. hrs.: ____ grade: _____	Course: _____ cr. hrs.: ____ grade: _____

General Education Requirements (18 credit hours in first 5 areas, Ethics needed in addition)

Course	Hours	Grade	Human Values and Social Context (HV&SC) Content Areas					Ethics
			Western Culture	Social Context	Cultural Diversity	Population & Environment	Artistic Expression	
CMJ 103	3			X				

Course having Additional Math or Science credit (see note 5): _____

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. (New CE focus courses may appear in future semesters.) The remaining credit hours can be any 300, 400, or 500 level ECE courses, excluding ECE 394.

CE Focus Courses

ECE 417 Intro to Robotics	COS 3____
ECE 478 Industrial Computer Control	COS 3____
ECE471 Embedded Systems	COS 4____
or ECE 477 Hardware Applications in C	COS 4____
	ECE 498 Selected Topics (CE focus)

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.

Generic Technical Electives Exceptions	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
COS 221 Data Structures in C++	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

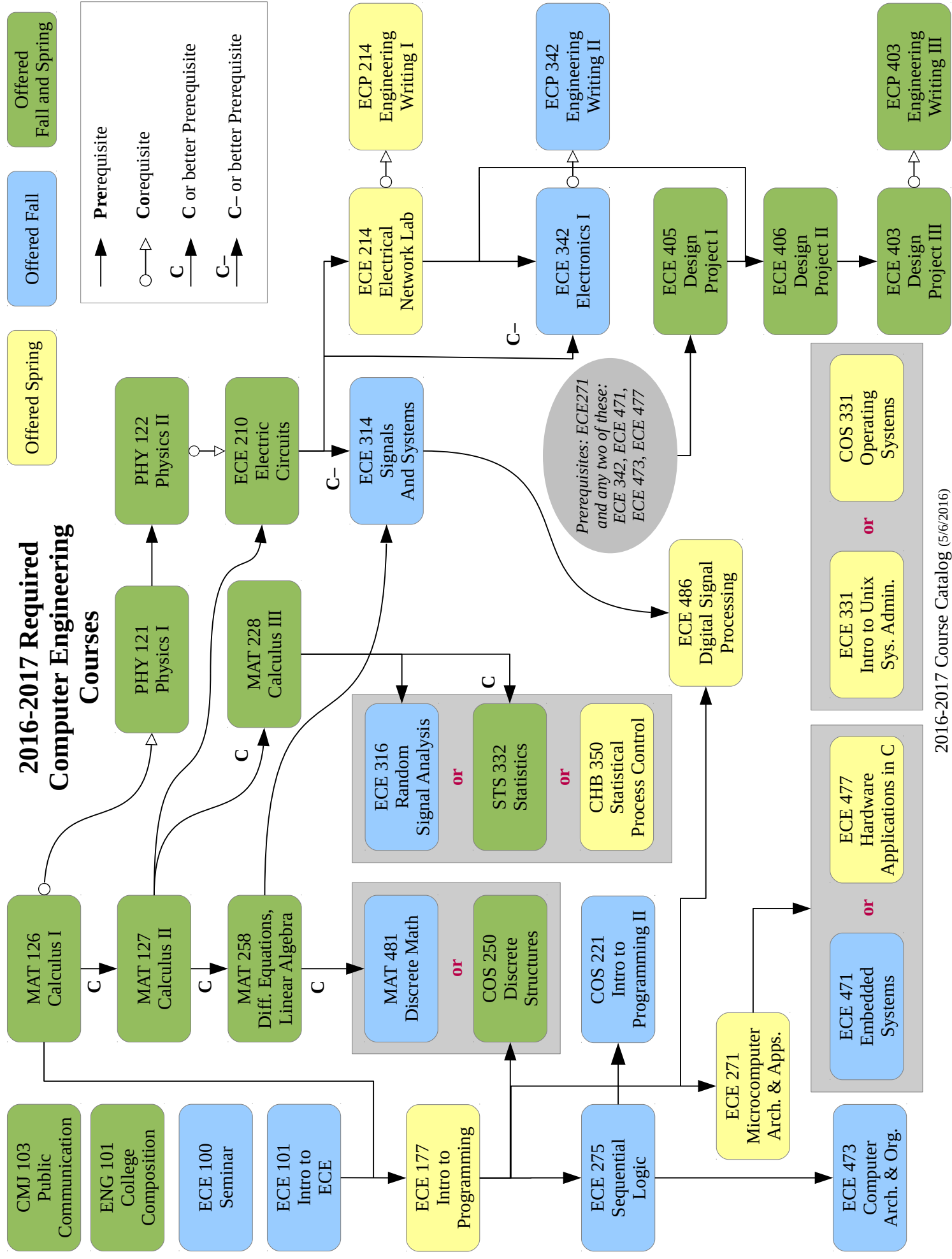
3. **General Education Requirements:** The University requires that all students successfully complete at least 18 credit hours of designated general education courses associated with Human Values and Social Context (HV&SC). These 18 credit hours must encompass the five content areas (i) western cultural 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. To graduate you must complete 31 Math and Science credits, but required courses provide only 30 credits. To obtain the additional credit, select an approved math or science course (biological, chemical, or physical science) as a generic technical or as a HV&SC elective. Courses that meet the HV&SC category and simultaneously contain science include: BIO 222, ERS 102, ERE 103, ERS 108, SMS 100, SMS 108, PSE 105. Any math course not already a required course that satisfies the mathematics minor meets this requirement as well. If you do not select a generic or HV&SC elective to meet this requirement, an additional Math/Science course must be taken to meet graduation requirements.

6. With advisor approval, you may petition for an exception to any ECE requirement. Such petitions are generally decided by the entire ECE faculty.

2016-2017 Required Computer Engineers Courses



2016-2017 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 414 Feedback Control Systems (ECE314)	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)

Computer Engineering 2016-2017 (Class of 2020)

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	2
ECE 271	Micro Arch & Applications	3
Elective	Generic Focus (1)	3
ECP 214	Engineering Writing I	1
MAT 258	Diff Eqn. & Linear Algebra	4
Elective	HV & SC (2) - Western Cultural Tradition	3
		16

Fall Junior		
ECE 316 STS 332	Random Signal Analysis Statistics	3
ECE 342	Electronics I	4
ECE 473	Computer Architecture & Org	4
ECP 342	Engineering Writing II	1
ECE 314	Signals and Systems	3
		15

Spring Junior		
ECE 331 COS 431	Introduction to UNIX Systems Administration Operating Systems	3
ECE 405	Design Project	1
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
		16

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
ECP 403	Engineering Writing III	1
Elective	Computer Focus (4)	1
Elective	ECE Technical Elective (2)	3
Elective	HV & SC (5) Ethics	3
		14

Total Credit Hours **124**

ECE
Math & Science
English
Gen Ed

One credit hour must include science or math. Courses that include science taken as a HV & SC Population and the Environment:
BIO 222, ERS 102, ERS 103, ERS 108, ERS 191, ERS 201, ERS 210, PSE 105, SMS 100, SMS 108
OR: Math courses taken as a generic technical elective are:
MAT 3XX, MAT 4XX