Graduation Check–Off Sheet, Computer Engineering, Year 2015-2016 (Class of 2019)

Student: _____ Advisor: _____

1. Total credit hours ≥ 124 _____   3. Overall GPA ≥ 2.0 _____

2. Passing grade in all courses _____   4. Department GPA ≥ 2.0 _____

Required Courses (enter grades)

ENG 101 _____	ECE 100 _____	<u>COS 221</u>_____	ECE 342 _____
PHY 121 _____	ECE 101 _____	ECE 314 _____	EC*P* 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 _____	EC*P* 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 _____	EC*P* 403 _____

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

CE focus: (3 cr. hrs. unless noted otherwise)

_____ ECE 417 Intro to Robotics

_____ ECE 478 Industrial Computer Control

_____ ECE 471 Microprocessor Applications

or _____ ECE 477 Hardware Applications in C

_____ COS 3 ____ _____

_____ COS 3 _____

_____ COS 4 _____

_____ COS 4 _____

_____ ECE 498 (CE focus) _____

_____ ECE 498 (CE focus) _____

Other ECE courses, non-CE focus: (partial list)

ECE 343 Electronics II (4 cr.)

ECE 351 Fields and Waves

ECE 414 Feedback Control Systems

ECE 323 Electric Power Conversion

ECE 427 Electric Power Systems

ECE 465 Intro to Sensors

ECE 4 ___ _____

ECE 4 ___ _____

ECE 4 ___ _____

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)

			Human Values and Social Context (HV&SC) Content Areas					
Course	Hours	Grade	Western Culture	Social Context	Cultural Diversity	Population & Environment	Artistic Expression	Ethics
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.
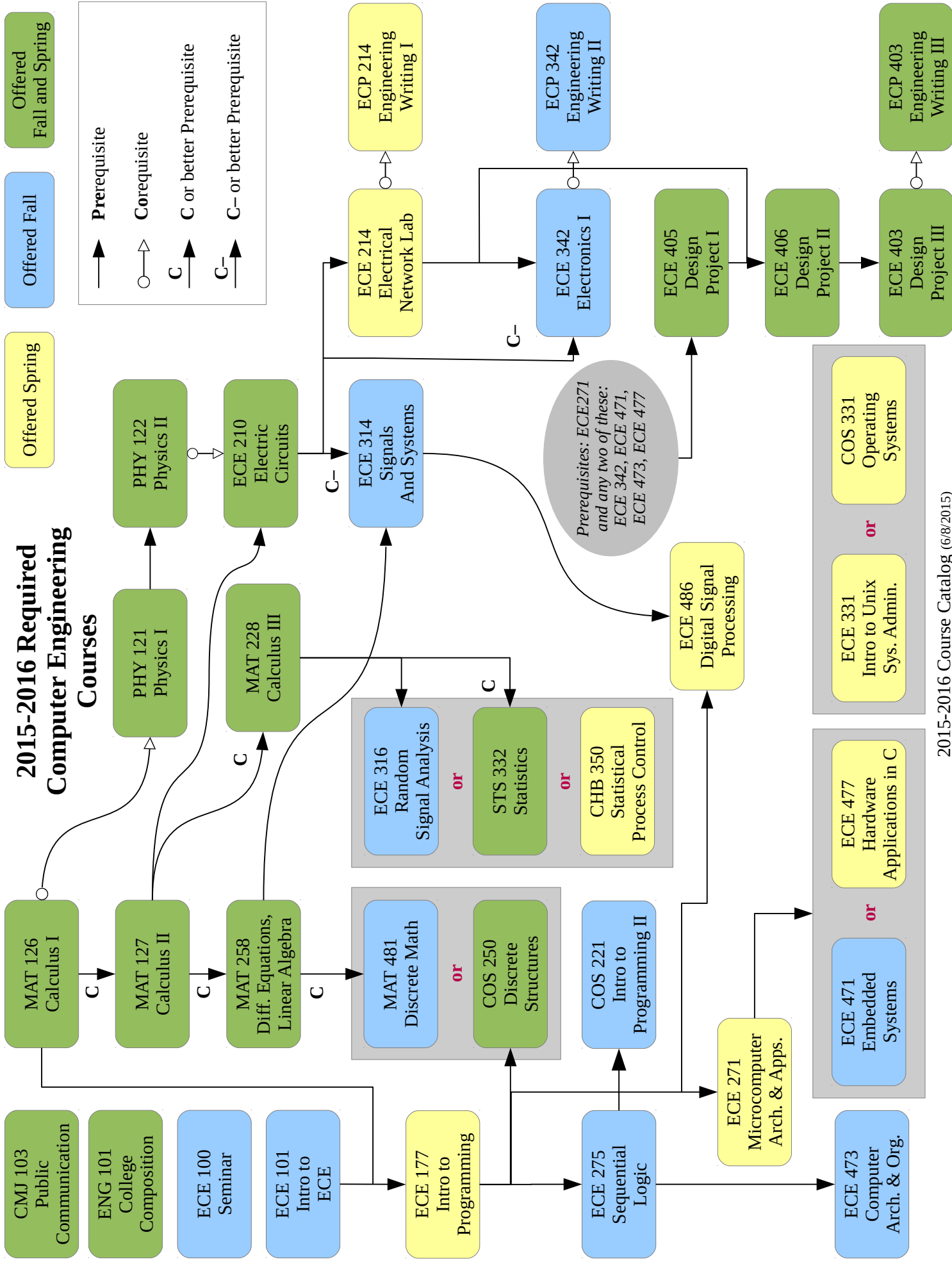
Generic Technical Electives Exceptions	
CHB 200 Fundamentals of Process Engineering	MEE 252 Statics and Strength of Materials
CIE 231 Fundamentals of Environmental Eng.	MEE 270 Applied Mechanics: Dynamics
EET 276 Programmable Logic Controllers	INV 180 Create: Innovation Engineering I
MEE 150 Applied Mechanics: Statics	INV 282 Communicate: Innovation Engineering II
MEE 252 Thermodynamics I	INV 392 Commercialize: Innovation Engineering III
PHY 236 Introductory Quantum Physics	ECE 198 Selected Topics in ECE

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.

2015-2016 Required Computer Engineering Courses

Legend:

- Offered Fall and Spring
- Offered Fall
- Offered Spring

Prerequisite →
Corequisite →
C C or better Prerequisite →
C− C− or better Prerequisite →

CMJ 103 Public Communication

ENG 101 College Composition

ECE 100 Seminar

ECE 101 Intro to ECE

MAT 126 Calculus I

MAT 127 Calculus II — **C**

MAT 258 Diff. Equations, Linear Algebra — **C**

PHY 121 Physics I

PHY 122 Physics II

MAT 228 Calculus III

ECE 210 Electric Circuits

ECE 214 Electrical Network Lab

ECP 214 Engineering Writing I

ECE 314 Signals And Systems — **C−**

ECE 342 Electronics I — **C−**

ECP 342 Engineering Writing II

ECE 405 Design Project I

ECE 406 Design Project II

ECE 403 Design Project III

ECP 403 Engineering Writing III

ECE 486 Digital Signal Processing

Prerequisites: ECE271 and any two of these: ECE 342, ECE 471, ECE 473, ECE 477

ECE 316 Random Signal Analysis
or
STS 332 Statistics
or
CHB 350 Statistical Process Control

MAT 481 Discrete Math
or
COS 250 Discrete Structures

COS 221 Intro to Programming II

ECE 177 Intro to Programming

ECE 275 Sequential Logic

ECE 271 Microcomputer Arch. & Apps.

ECE 473 Computer Arch. & Org.

ECE 477 Hardware Applications in C
or
ECE 471 Embedded Systems

COS 331 Operating Systems
or
ECE 331 Intro to Unix Sys. Admin.

2015-2016 Course Catalog (6/8/2015)

2015-2016 Computer Engineering Technical Electives

Legend:
- Offered Spring (prerequisites)
- Offered Fall (prerequisites)
- Offered Fall and Spring (prerequisites)

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

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 477 Hardware Applications in C (ECE277)
- ECE 498 Selected Topics with CE focus (varies)
- COS 4xx Computer Science Elective (varies)

Other Electives

- 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 (C- in ECE210 or ECE214)
- ECE 427 Electric Power Systems (ECE210 & ECE 214)
- 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 2015-2016 (Class of 2019)

Fall First Year

Code	Course	Credits
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

Code	Course	Credits
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

Code	Course	Credits
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

Code	Course	Credits
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

Code	Course	Credits
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

Code	Course	Credits
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

Code	Course	Credits
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

Code	Course	Credits
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

Legend

- 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