Graduation Check–Off Sheet, Electrical 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 _____	ECE 316 _____	ECE 401 _____
CHY 131 _____	ECE 101 _____	or STS 332 _____	ECE 402 _____
CHY 133 _____	ECE 177 _____	or CHB 350 _____	ECE 403 _____
PHY 121 _____	ECE 210 _____	ECE 342 _____	EC*P* 403 _____
PHY 122 _____	ECE 214 _____	EC*P* 342 _____	
MAT 126 _____	EC*P* 214 _____	ECE 343 _____	
MAT 127 _____	ECE 271 _____	ECE 351 _____	
MAT 228 _____	ECE 275 _____	ECE 414 _____	
MAT 258 _____	ECE 314 _____	ECE 486 _____	

ECE Technical Electives (15 credit hours, at least 9 of which must be EE focus)

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

_____ ECE 323 Electric Power Conversion   _____ ECE 462 Intro to Semiconductor Devices
_____ ECE 427 Electric Power Systems   _____ ECE 464 Microelectronics Science
_____ ECE 444 Analog Integrated Circuits   _____ ECE 465 Intro to Sensors
_____ ECE 445 Digital Integrated Circuits   _____ ECE 467 Solar Cells and Their Applications
_____ ECE 453 Microwave Engineering (4 cr.)   _____ ECE 498 (EE focus) _____
_____ ECE 484 Communications Engineering   _____ ECE 498 (EE focus) _____

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

ECE 331 Intro to Linux   ECE 471 Embedded Systems
ECE 417 Intro to Robotics   ECE 477 Hardware Applications in C
ECE 473 Computer Architecture (4 cr.)   ECE 478 Industrial Computer Control
_____ _____ _____   ECE 498 _____
_____ _____ _____   _____ _____ _____

Generic Technical Electives (6 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				

Electrical Engineering Curriculum Notes

1. **ECE Technical Electives:** At least 15 credit hours of ECE technical elective courses are required. Of these, 9 must be EE focus courses chosen from the following list. (New EE focus courses may appear in future semesters.) The remaining credit hours can be any 300, 400, or 500 level ECE courses, excluding ECE 394.

EE Focus Courses	
ECE 323 Electric Power Conversion	ECE 462 Intro to Semiconductor Devices
ECE 427 Electric Power Systems	ECE 464 Microelectronics Science
ECE 444 Analog Integrated Circuits	ECE 465 Into to Sensors
ECE 445 Digital Integrated Circuits	ECE 467 Solar Cells and Their Applications
ECE 453 Microwave Engineering	ECE 498 Selected Topics (EE focus)
ECE 484 Communications Engineering	ECE 498 Selected Topics (EE focus)

2. **Generic Technical Electives:** 6 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.

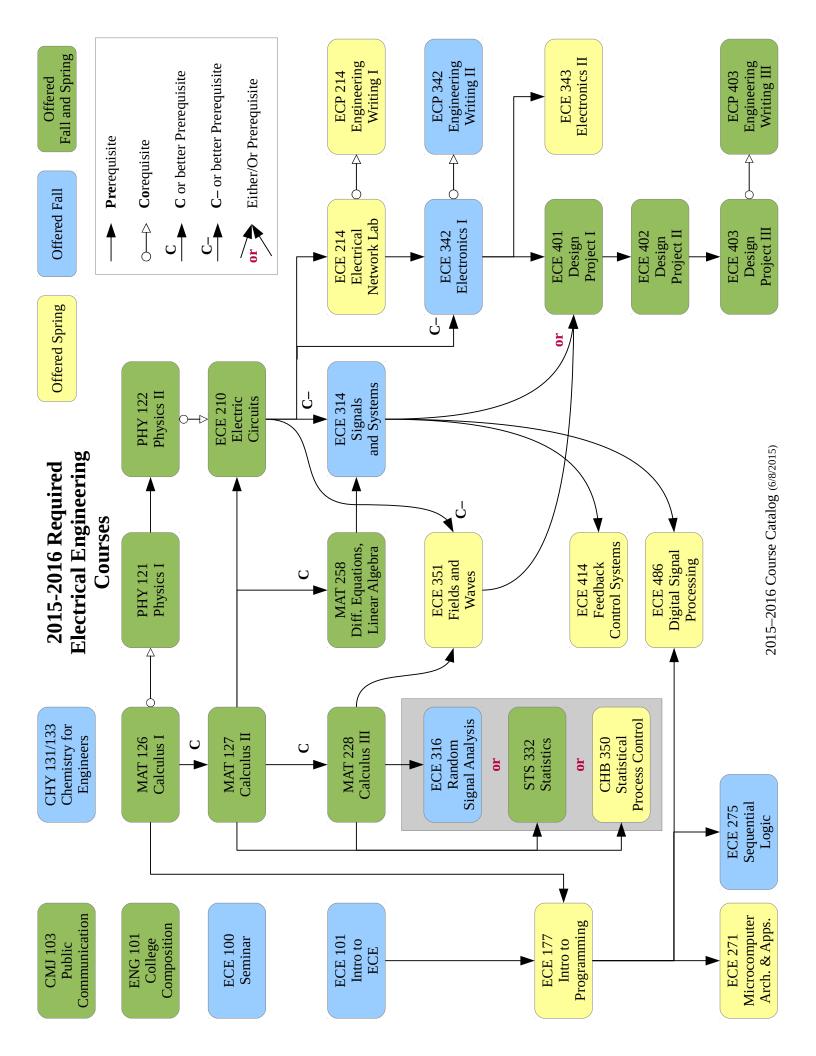| Generic Technical Electives Exceptions	
CHB 200 Fundamentals of Process Engineering	MEE 252 Statics and Strength of Materials
CIE 231 Fundamentals of Environmental Eng.	MEE 270 Applied Mechanics: Dynamics
COS 221 Data Structures in C++	INV 180 Create: Innovation Engineering I
EET 276 Programmable Logic Controllers	INV 282 Communicate: Innovation Engineering II
MEE 150 Applied Mechanics: Statics	INV 392 Commercialize: Innovation Engineering III
MEE 252 Thermodynamics I	ECE 198 Selected Topics in ECE
PHY 236 Introductory Quantum Physics	

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 general education requirements beyond HV&SC and Ethics are met by the required ECE curriculum.)

4. 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 Electrical Engineering Courses

Legend:
- Offered Fall and Spring (green)
- Offered Fall (blue)
- Offered Spring (yellow)

- **Prerequisite** →
- Corequisite ⟿
- **C** or better Prerequisite — C
- **C−** or better Prerequisite — C−
- Either/Or Prerequisite — **or**

Courses:

- ECP 214 Engineering Writing I
- ECP 342 Engineering Writing II
- ECE 343 Electronics II
- ECP 403 Engineering Writing III
- ECE 214 Electrical Network Lab
- ECE 342 Electronics I
- ECE 401 Design Project I
- ECE 402 Design Project II
- ECE 403 Design Project III
- PHY 122 Physics II
- ECE 210 Electric Circuits
- ECE 314 Signals and Systems
- PHY 121 Physics I
- MAT 258 Diff. Equations, Linear Algebra
- ECE 351 Fields and Waves
- ECE 414 Feedback Control Systems
- ECE 486 Digital Signal Processing
- CHY 131/133 Chemistry for Engineers
- MAT 126 Calculus I
- MAT 127 Calculus II
- MAT 228 Calculus III
- ECE 316 Random Signal Analysis
- STS 332 Statistics
- CHB 350 Statistical Process Control
- ECE 275 Sequential Logic
- CMJ 103 Public Communication
- ENG 101 College Composition
- ECE 100 Seminar
- ECE 101 Intro to ECE
- ECE 177 Intro to Programming
- ECE 271 Microcomputer Arch. & Apps.

2015–2016 Course Catalog (6/8/2015)

2015-2016 Electrical Engineering Technical Electives

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

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

ECE 427
Electric Power
Systems
(ECE210 & ECE 214)

ECE 484
Communications
Engineering
(ECE314 & ECE 316)

ECE 444
Analog IC
Design
(ECE314 & ECE343)

ECE 462
Semiconductor
Devices
(Chy131,PHY122,MAT258)

ECE 465
Introduction to
Sensors
(junior standing)

ECE 498
Selected Topics
with EE focus
(varies)

ECE 453
Microwave
Engineering
(ECE351)

ECE 445
Digital IC
Design
(ECE342)

ECE 464
Microelectronics
Engineering
(Chy131,PHY122,MAT258)

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

Power and Alternative Energy
ECE 323, ECE427

Communications and Wireless
ECE484, ECE453

Microelectronics and Circuits
ECE444, ECE445, ECE462,
ECE464, PHY236

Solid State and Sensors
ECE453, ECE465,
ECE462, ECE464, PHY236

ECE 477
Hardware
Applications in C
(ECE271)

ECE 478
Industrial
Computer Control
(ECE271)

ECE 471
Embedded
Systems
(ECE271)

ECE 473
Computer
Arch. & Org.
(ECE275)

ECE 498
Selected Topics
(varies)

ECE 331
Intro to Unix
Sys. Admin.
(ECE177)

ECE 417
Introduction to
Robotics
(ECE177 & MAT228)

Other Courses
with
Adviser Approval
(varies)

2015–2016 Course Catalog (6/8/2015)

Electrical Engineering 2015-2016 (Class of 2019)

Fall First Year		
CHY 131	Chemistry for Engineers	3
CHY 133	Chemistry for Engineers Lab	1
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
		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	Electrical Networks I	4
ECE 275	Sequential Logic Systems	3
Elective	HV & SC (1) Cultural Diversity & International Perspectives	3
MAT 228	Calculus III	4
PHY 122	Physics for Engineers II	4
		18

Spring Sophomore		
ECE 214	Electrical Networks Lab	2
ECE 271	Micro Arch & Applications	3
ECE 351	Fields and Waves	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 314	Signals and Systems	3
ECP 342	Engineering Writing II	1
Elective	ECE Technical Elective (1)	3
		14

Spring Junior		
ECE 343	Electronics II	4
ECE 401	Design Project	1
ECE 486	Digital Signal Processing	4
Elective	Electrical Focus (1)	3
Elective	ECE Technical Elective (2)	3
		15

Fall Senior		
ECE 402	Design Project II	4
Elective	Electrical Focus (2)	3
Elective	Generic Focus (2)	3
Elective	Generic Focus (1)	3
Elective	HV & SC (3) Population and the Environment	3
		16

Spring Senior		
ECE 403	Design Project III	2
ECP 403	Engineering Writing III	1
ECE 414	Feedback Control Systems	3
Elective	Electrical Focus (3)	3
Elective	HV & SC (4) Artistic & Creative Expression	3
Elective	HV & SC (5) Ethics	3
		15

Total Credit Hours	**124**

Legend
ECE
Math & Science
English
Gen Ed