

Graduation Check–Off Sheet, Computer Engineering, Year 2013-2014 (Class of 2017)

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 _____	ECE 314 _____	ECE 342 _____
PHY 121 _____	ECE 101 _____	ECE 316 _____	ECP 342 _____
PHY 122 _____	ECE 177 _____	or MAT 332 _____	ECE 473 _____
MAT 126 _____	ECE 210 _____	or CHB 350 _____	ECE 486 _____
MAT 127 _____	ECE 214 _____		
MAT 228 _____	ECP 214 _____	ECE 331 _____	ECE 405 _____
MAT 258 _____	ECE 271 _____	or COS 431 _____	ECE 406 _____
MAT 481 _____	ECE 275 _____	ECE 471 _____	ECE 403 _____
or COS 250 _____	COS 221 _____	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 435 Network Engineering		_____ COS 4 _____
_____ ECE 471 Microprocessor Applications		_____ COS 4 _____
or _____ ECE 477 Hardware Applications in C		_____ ECE 498 (CE focus) _____
_____ ECE 478 Industrial Computer Control		_____ ECE 498 (CE focus) _____
Other ECE courses, non-CE focus: (partial list)		
ECE 324 Renewable Energy		ECE 465 Intro to Sensors
ECE 343 Electronics II (4 cr.)		ECE 4 _____
ECE 351 Fields and Waves		ECE 4 _____
ECE 414 Feedback Control Systems		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 that provides additional Math or Science credit: _____

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 435 Network Engineering	COS 3____
ECE471 Microprocessor Applications	COS 4____
or ECE 477 Hardware Applications in C	COS 4____
ECE 478 Industrial Computer Control	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

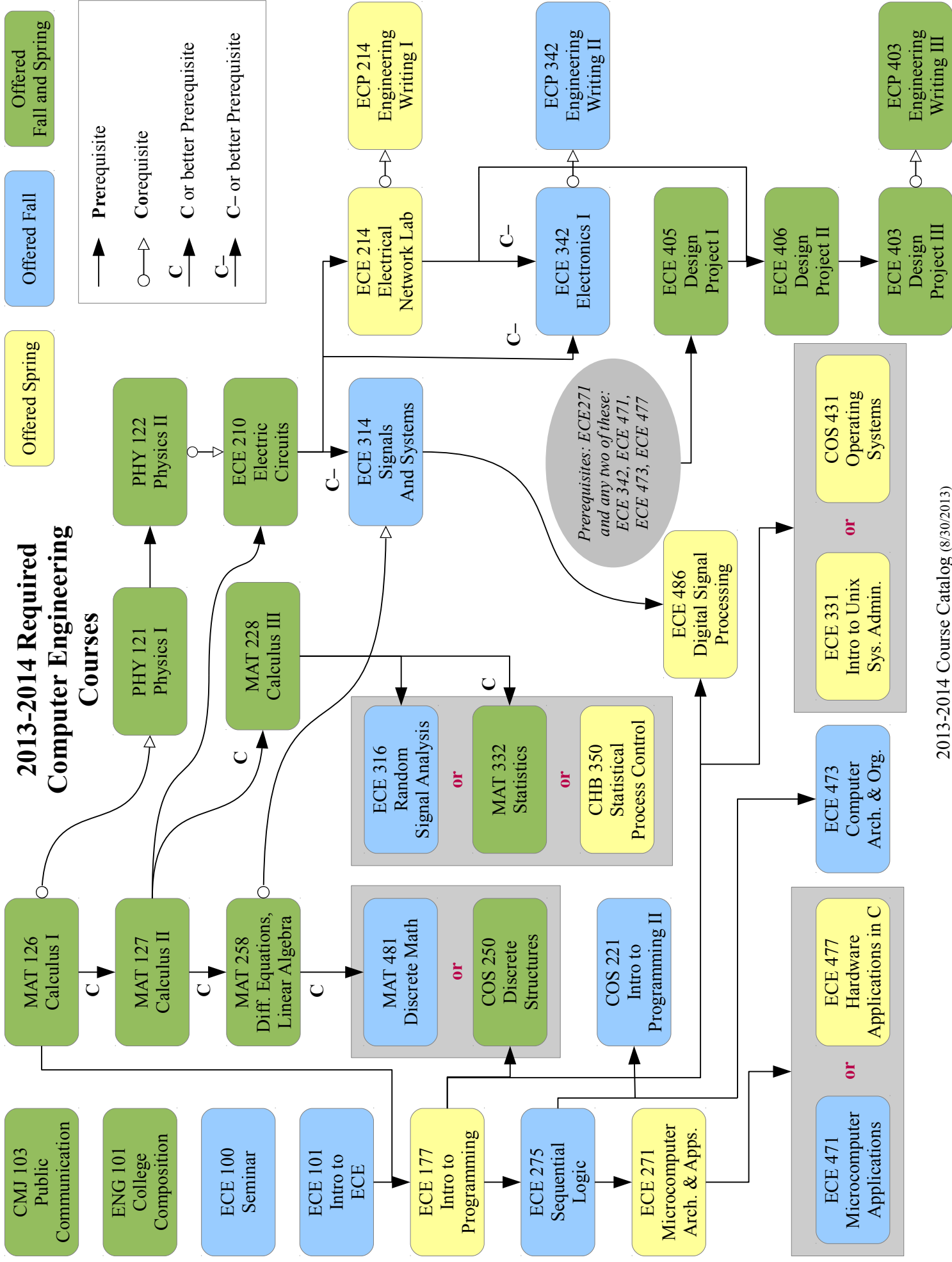
3. **General Education Requirements:** The University requires that all students successfully complete at least 18 credit hours of designated general education courses associated with Human Values and Social Context (HV&SC). These 18 credit hours must encompass the five content areas (i) western cultural 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 can count as a CE focus technical elective.

5. With advisor approval, either as a separate class, or as part of a generic technical elective or as a general education course, 1 additional credit hour of mathematics or science (biological, chemical, or physical science) must be taken. Courses that meet a general education category and simultaneously contain science include: BIO 222, ERS 102, ERE 103, ERS 108, SMS 100, SMS 108, PSE 105. Any non ECE-required mathematics course satisfying the mathematics minor provides 1 credit hour of mathematics.

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

2013-2014 Required Computer Engineering Courses



2013-2014 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 Microprocessor Applications (ECE271)	ECE 478 Industrial Computer Control (ECE271)	COS 3xx Computer Science Elective (varies)
ECE 435 Network Engineering (COS221)	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 concentrate in an area, some possibilities are:

Embedded Control
ECE478, ECE477,
ECE471, ECE414

High Performance Computing
ECE331, ECE477, ECE435

Robotics
ECE417, ECE477,
ECE471, ECE487

ECE 414
Feedback
Control Systems
(ECE314)

ECE 484
Communications
Engineering
(ECE314 & ECE316)

ECE 324
Renewable
Energy Engineering
(ECE209 or ECE210)

ECE 444
Analog IC
Design
(ECE314 & ECE343)

ECE 498
Selected Topics
(varies)

Other Courses
with
Adviser Approval
(varies)

ECE 351
Fields and
Waves
(ECE210 & MAT228)

ECE 450/451
Power
Electronics
(ECE314)

ECE 427
Electric Power
Systems
(ECE210 & ECE 214)

ECE 445
Digital IC
Design
(ECE342)

ECE 462
Semiconductor
Devices
(Chy131,PHY122,MAT258)

ECE 465
Introduction to
Sensors
(junior standing)

ECE 453
Microwave
Engineering
(ECE351)

ECE 455/456
Electric
Drives
(ECE314)

ECE 464
Microelectronics
Engineering
(Chy131,PHY122,MAT258)

ECE 466
Sensor Technology
and Instrumentation
(ECE465)

Computer Engineering 2013-2014 (Class of 2017)

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 MAT 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

Computer Engineering with Honors 2013-2014 (Class of 2017)

Fall First Year		
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
HON 111	Civilizations I	4
MAT 126	Calculus I	4
PHY 121	Physics for Engineers 1	4
		16

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
HON 112	Civilizations II	4
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		16

Fall Sophomore		
COS 221	Intro to Computer Science II	3
ECE 210	Electrical Networks I	4
ECE 275	Sequential Logic Systems	3
HON 211	Civilizations III	4
MAT 228	Calculus III	4
		18

Spring Sophomore		
ECE 214	Electrical Networks Lab	2
ECE 271	Micro Arch & Applications	3
Elective	Generic Focus (1) - Math course	3
ECP 214	Engineering Writing I	1
HON 212	Civilizations IV	4
MAT 258	Diff Eqn. & Linear Algebra	4
		17

Fall Junior		
ECE 316 MAT 332	Random Signal Analysis Statistics	3
ECE 342	Electronics I	4
ECE 473	Computer Architecture & Org	4
ECP 342	Engineering Writing II	1
HON 180	A Cultural Odyssey	1
ECE 314	Signals and Systems	3
		16

Spring Junior		
CMJ 103	Fund of Public Communication	3
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
HON 3XX	Honors Tutorial	3
Elective	Computer Focus (2)	3
		16

Fall Senior		
ECE 471 Elective	Embedded Systems Computer Focus (1)	3
HON 498	Honor Directed Study	3
MAT 481 COS 250	Discrete Mathematics Discrete Structures	3
Elective	Computer Focus (3)	3
Elective	ECE Technical Elective (1)	3
		15

Spring Senior		
ECE 486	Digital Signal Processing	4
ECP 403	Engineering Writing III	1
HON 499	Honors Thesis	3
Elective	Computer Focus (4)	1
Elective	ECE Technical Elective (2)	3
		12

Total Credit Hours **126**

ECE
Math & Science
English
Gen Ed
Honors

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

Double Major 2013-2014 (Class of 2017)

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
Elective	HV & SC (1) Cultural Diversity & International Perspectives	3
		18

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
Elective	HV & SC (2) - Western Cultural Tradition	3
		18

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
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 (3) Population and the Environment	3
		16

Fall Junior		
ECE 316 MAT 332	Random Signal Analysis Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
ECP 342	Engineering Writing II	1
ECE 471 Elective	Embedded Systems Computer Focus (1)	3
		14

Spring Junior		
ECE 343	Electronics II	4
ECE 401/5	Design Project	1
ECE 477 Elective	Hardware Applications in C Computer Focus (1)	3
ECE 486	Digital Signal Processing	4
Elective	Electrical Focus (1)	3
Elective	Computer Focus (2)	3
		18

Fall Senior		
ECE 402/6	Design Project II	4
ECE 473	Computer Architecture & Org	4
MAT 481 COS 250	Discrete Mathematics Discrete Structures	3
Elective	Electrical Focus (2)	3
Elective	Computer Focus (3)	3
Elective	Computer Focus (4)	1
		18

Spring Senior		
ECE 331 COS 431	Introduction to UNIX Systems Administration Operating Systems	3
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
		18

Total Credit Hours	138
--------------------	------------

ECE
Math & Science
English
Gen Ed

Either ECE 401/402 or ECE 405/406 are required, but not both for double major.

Double Major with Honors 2013-2014 (Class of 2017)

Fall First Year		
ECE 100	ELE & CEN Eng Seminar	1
ECE 101	Intro to ELE & CEN Eng	3
HON 111	Civilizations I	4
MAT 126	Calculus I	4
PHY 121	Physics for Engineers I	4
		16

Spring First Year		
ECE 177	Intro to Prog for Engineers	4
HON 112	Civilizations II	4
MAT 127	Calculus II	4
PHY 122	Physics for Engineers II	4
		16

Fall Sophomore		
COS 221	Intro to Computer Science II	3
ECE 210	Electrical Networks I	4
ECE 275	Sequential Logic Systems	3
HON 211	Civilizations III	4
MAT 228	Calculus III	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
HON 212	Civilizations IV	4
MAT 258	Diff Eqn. & Linear Algebra	4
		17

Fall Junior		
ECE 316 MAT 332	Random Signal Analysis Statistics	3
ECE 342	Electronics I	4
ECE 314	Signals and Systems	3
ECP 342	Engineering Writing II	1
ECE 471 Elective	Embedded Systems Computer Focus (1)	3
HON 180	A Cultural Odyssey	1
		15

Spring Junior		
ECE 343	Electronics II	4
ECE 401/5	Design Project	1
ECE 477 Elective	Hardware Applications in C Computer Focus (1)	3
ECE 486	Digital Signal Processing	4
HON 3XX	Honors Tutorial	3
		15

Fall Senior		
ECE 473	Computer Architecture & Org	4
HON 498	Honor Directed Study	3
MAT 481 COS 250	Discrete Mathematics Discrete Structures	3
Elective	Computer Focus (2)	3
Elective	Electrical Focus (1)	3
		16

Spring Senior		
ECE 331 COS 431	Introduction to UNIX Systems Administration Operating Systems	3
ECP 403	Engineering Writing III	1
ECE 414	Feedback Control Systems	3
HON 499	Honors Thesis	3
Elective	Electrical Focus (3)	3
Elective	Computer Focus (3)	1
CMJ 103	Fund of Public Communication Human Values/Social Context	3
		17

Fall Super Senior		
CHY 131	Chemistry for Engineers	3
CHY 133	Chemistry for Engineers Lab	1
Elective	Computer Focus (4)	3
Elective	Electrical Focus (2)	3
		10

Total Credit Hours

140

ECE
Math & Science
English
Gen Ed

Either ECE 401 or ECE 405 is required, but not both for double major.