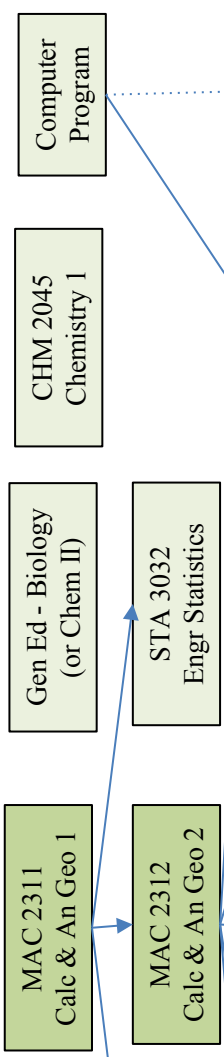


BSEE Curriculum

Draft September 30, 2014

Preparation:



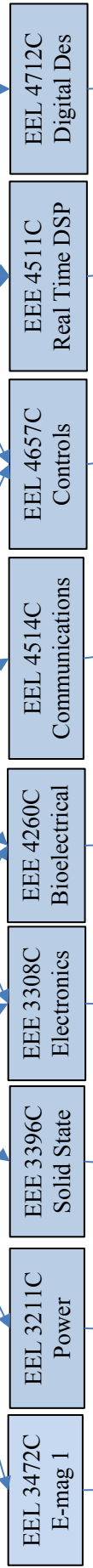
Introductory:



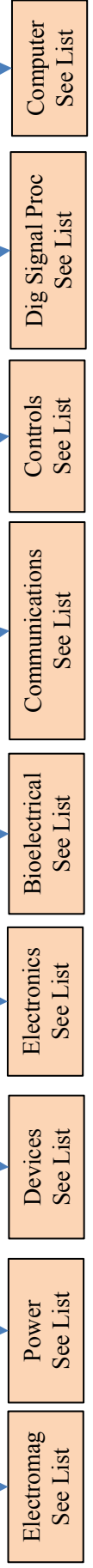
Foundational:



Breadth (Choose 3 courses):



Depth: Choose 2 Courses from the Following Areas (must be from different areas)



Other Requirements:





CURRICULUM LEADING TO THE BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Beginning Catalog Year: 2015
Hours required: 131

General Education and Critical Tracking Courses: 48 Credits

ENC 3246 Professional Comm for Engrs 3
 HUM 2305 What is the Good Life? 3
 Humanities (GE-H) 3
 Social Science (GE-S) 6
 Composition (GE-C) 3
 Humanities or Social Science (GE-H/GE-S) 3
Humanities and Social Sciences courses should be chosen to also satisfy International Studies and Diversity requirements

MAC 2311 Analytical Geom & Calc 1 4
 MAC 2312 Analytical Geom & Calc 2 4
 MAC 2313 Analytical Geom & Calc 3 4
 MAP 2302 Elem Differential Equations 3

CHM 2045 General Chemistry 1 3
 or CHM 2095 Chemistry for Engineers
 CHM 2045 General Chemistry Lab 1
 Biological Science (GE-B) 3
 or CHM 2046 General Chemistry 2
 or CHM 2096 Chemistry for Engineers 2

PHY 2048 Physics with Calculus 1 3
 PHY 2048L Physics Lab 1
 PHY 2049 Physics with Calculus 2 3
 PHY 2049L Physics Lab 1

Technical Breadth Courses: 18 Credits

MAS 3114 Computational Linear Algebra 3
 STA 3032 Engineering Statistics 3
 Computer Programming 3
 COP 2271 & COP 2271L Computer Programming for Engineers & Lab (C++ or C)
 COP 3275 Programming Using C
 EEL 3834 Programming for ECE
 General Technical Electives 9
 Any 3000/4000-level non-ECE course in the College of Engineering, from the Math Department with an MAA, MAD, MAP, MAS prefix, or from the Physics Department with the exception of PHY 3400.

EE Core Courses: 30 Credits

EEL 3000 Intro to ECE2
 EEL 3111C Circuits 14
 EEL 3008 Physics of Electrical Engr3
 EEL 3112 Circuits 23
 EEL 3135 Signals & Systems4
 EEL 3701C Digital Logic & Computer Sys4
 EEL 3923C Electrical Engr Design 13
 EEL 3744C Microprocessor Applications4
 EEL 4924C Electrical Engr Design 23

EE Breadth Courses: 12 credits

Choose 3 courses from this list:

EEL 3211C Basic Electric Energy4
 EEE 3308C Electronic Circuits 14
 EEE 3396C Solid State Devices4
 EEL 3472C Electromagnetic Fields & Apps 14
 EEE 4260C Bioelectrical Systems4
 EEL 4511C Real Time Digital Signal Process4
 EEL 4514C Communications4
 EEL 4657C Linear Controls4
 EEL 4712C Digital Design4

EE Depth Courses: 6 credits

Choose 2 courses. Courses must be from 2 different areas. See the approved list of depth elective courses.

EE Technical Electives: 17 credits

Any 3000 level or higher course in ECE with the exception of EEL 3003.

Approved EE Depth Electives

Choose 2 courses from the list below. Courses must be from 2 different areas.

Any additional courses taken from this list beyond the required two courses will be applied as EE technical electives. Courses cannot be used to simultaneously satisfy both depth and technical elective requirements.

This list is subject to change. Students should contact the EE Undergraduate Advisor for any changes to this list.

Bioelectrical Systems

Prereq: EEL 4260C – Bioelectrical Systems

BME 4931 Neural Systems Modeling	3
BME 4931 Neural Engineering	3
BME 4931 Bioinformatics	3

Communications

Prereq: EEL 4514C – Communication Systems

EEL 4516 Noise in Linear Systems	3
EEL 4598 Data Computer Comm.....	3

Computer

Prereq: EEL 4712C – Digital Design

EEL 4713 Digital Computer Architecture.....	4
EEL 4720 Reconfigurable Computing	3
EEL 4736 Principles of Comp Sys Design	3

Controls

Prereq: EEL 4657C – Linear Controls

EEL 4610 State Variables and Controls	3
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Devices

Prereq: EEL 3396C – Solid State Devices

EEE 4329 Future of Microelect Tech.....	3
EEE 4331 Microelectronic Fab Tech	3
EEL 4420 Intro to Nanodevices.....	3

Digital Signal Processing

Prereq: EEL 4511C – Real-Time DSP

EEL 4750 Fdns of Digital Signal Process.....	3
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Electromagnetics

Prereq: EEL 3472C – Electromagnetic Fields & Applications 1

EEL 4440 Optical Communication Sys.....	3
EEL 4458 Fundamentals of Photonics	3
EEL 4461 Antenna Systems	3
EEL 4473 Electromagnetics & Fields 2	3
EEL 4495 Lightning.....	3

Electric Energy (Power)

Prereq: EEL 3211C Basic Electric Energy

EEL 4251 Power System Analysis.....	3
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Electronics

Prereq: EEE 3308C – Electronic Circuits 1

EEE 4306 Electronic Circuits.....	3
EEE 4310 Digital Integrated Circuits.....	3
EEE 4373 Radio-Frequency Electronics	3

Electrical Engineering - Bachelor of Science Curriculum ~ (Catalog Yr 2015)

Although this is a suggested plan of study, **ALL** courses listed below are **REQUIRED** for this degree. Refer to the Undergraduate Catalog for verification.

Courses with an asterisk (*) require a grade of C or higher. In order to use a course as a prerequisite for an EEE/EEL-prefixed course, a grade of C or better is required in the prerequisite course. Any 3000/4000 level EEL/EEE-prefixed course not taken to satisfy the breadth or depth requirement can be applied as EE Technical Electives excluding EEL 3003 which does not apply towards degree requirements.

To minimize credits in the general education courses, students are strongly encouraged to choose humanities and social science courses which also satisfy International Diversity.

✓	Course Prefix and Number	Cr	Course Title	Pre-Requisites
Semester 1 14 cr				
	CHM 2045 or 2095 *	3	General Chemistry 1 / Chemistry for Engineers 1	Chemistry Readiness Assessment
	CHM 2045L	1	General Chemistry Lab 1	
	HUM 2305 *	3	What Is The Good Life	All students without an AA degree
	MAC 2311 *	4	Analytical Geometry & Calculus 1	Mathematics Placement Exam (ALEKS)
	GE-S	3	General Education – Social/Behavioral Science	Check catalog for pre-requisites
Semester 2 14 cr				
	GE-B	3	General Education - Biological Science	Check catalog for pre-requisites
	ENC 3246 * +	3	Professional Communication for Engineers	ENC1101 or test score equivalency
	MAC 2312 *	4	Analytical Geometry & Calculus 2	MAC 2311
	PHY 2048 *	3	Physics with Calculus 1	MAC 2311
	PHY 2048L	1	Physics Lab 1	
Semester 3 14 cr				
	MAC 2313 *	4	Analytical Geometry & Calculus 3	MAC 2312
	PHY 2049 *	3	Physics with Calculus 2	MAC 2312, PHY 2048
	PHY 2049L	1	Physics Lab 2	
	Computer Programming	3	See approved list	Check catalog for pre-requisites
	GE-H/N	3	General Education – Humanities/International	Check catalog for pre-requisites
Semester 4 14 cr				
	MAS 3114	3	Computational Linear Algebra	MAC 2312, computer programming
	EEL 3111C *	4	Circuits 1	MAC 2312
	EEL 3701C *	4	Digital Logic & Computer Systems	Computer programming suggested
	GE-S (GE-S/D)	3	General Education - Social Behavior Diversity	Check catalog for pre-requisites
Semester 5 (Summer) 10 cr				
	MAP 2302	3	Elementary Differential Equations	MAC 2312
	EEL 3135 *	4	Signals & Systems	MAP 2302, MAS 3114
	STA 3032	3	Engineering Statistics	MAC 2311
Semester 6 12 cr				
	EEL 3008 *	3	Physics of Electrical Engineering	MAC 2313, MAP 2302, EEL 3111C
	EEL 3000 *	2	Introduction to ECE	MAS 3114
	EEL 3744C *	4	Microprocessor Applications	EEL 3701C
	GE-C	3	Composition	
Semester 7 14 cr				
	EE Breadth Elec #1 & 2	8	See approved list. See note below	Check catalog for Pre-requisites
	EEL 3112 *	3	Circuits 2	MAP 2302, EEL 3111C, EEL 3000, EEL 3135
	Gen Technical Elec #1 \$	3	See note below	Check catalog for pre-requisites
Semester 8 15 cr				
	EE Breadth Elec #3	4	See approved list. See note below	Check catalog for Pre-requisites
	EE Depth Elec #1	3	See approved list. See note below	Check catalog for Pre-requisites
	EE Technical Electives ^	5	See approved list. See note below	Check catalog for Pre-requisites
	Gen Technical Elec #2 \$	3	See approved list. See note below	Check catalog for pre-requisites
Semester 9 12 cr				
	Gen Technical Elec #3 \$	3	See approved list. See note below	Check catalog for pre-requisites
	EE Depth Elec #2	3	See approved list. See note below	Check catalog for Pre-requisites
	EEL 3923C *	3	Electrical Engineering Design 1	EEL 3111C, EEL 3744C, 1 breadth elective
	EE Technical Elective ^	3	See approved list. See note below	Check catalog for Pre-requisites
Semester 10 12 cr				
	EEL 4924C *	3	Electrical Engineering Design 2	EEL 3923C, 1 depth elective
	EE Technical Elective ^	9	See approved list. See note below	Check catalog for Pre-requisites
Total Hours		131	<i>Revised 3/17/2015</i>	

Notes:

^ EE Technical Electives must total a minimum of 17 credits. The total of Breadth, Depth and EE Technical Electives must total at least 35 credits.

\$ Any 3000/4000-level course in the College of Engineering or any 3000/4000-level course from the Math Department with an MAA, MAD, MAP, MAD prefix or from the Physics Department with the exception of PHY 3400.

+ ENC 3246 is offered by the Writing Program, 302 Tigert Hall, 352-846-1138