

Electrical Engineering

128 credits, 2019/2020 Catalog

First Year

Fall Semester		Spring Semester	
3	ENC 1101 Composition I	3	ENC 1102 Composition II
4	MAC 2281 or MAC 2311 Calculus I	4	MAC 2282 or MAC 2312 Calculus II
3	CHS 2440 or CHM 2045 Chemistry I	3	PHY 2048 General Physics I
1	CHS 2440L or CHM 2045L Chemistry I Lab	1	PHY 2048L General Physics I Lab
R	EGN 3000 Foundations of Engineering	3	EEL 3705 Fund. Of Digital Circuits
3	EGN 3000L Foundations of Engineering Lab (TGEC)		
14	<i>Total Credits</i>	14	<i>Total Credits</i>

Second Year

Fall Semester		Spring Semester		Summer	
4	MAC 2283 or MAC 2313 Calculus III	3	*EGN 3433 Modeling & Analysis Eng Sys. or MAP 2302 Differential Equations	3	EGN 3374 Electrical Sys II
4	EGN 3420 Engineering Analysis	3	EGN 3373 Electrical Systems I	3	EGN 3443 Probability & Statistics for Eng. (TGEI)
3	EEE 3394 EE Science I - Electronic Materials	4	**EEL 3472C EE Science II – Electromag.	3	EGN 3615 Eng Economics (TGED)
1	EEL 3705L Logic Lab	3	EEL 2161 Electrical Eng Comp Methods		
3	State Gen. Ed. Core Humanities Elective	1	EGS 2070 Prof. Formation of Eng 1 (ERCE)		
15	<i>Total Credits</i>	14	<i>Total Credits</i>	9	<i>Total Credits</i>

Third Year

Fall Semester		Spring Semester		Internship/Co-op	
3	EEL 4102 Signals & Systems	3	EE Core Technical Elective	List Company/employer name and position	
3	ENC 3246 Communication for Engineers	3	EE Core Technical Elective		
1	EEL 3115L Lab I (Circuits)	3	EE Track Elective		
1	EEL 3163C Computer Tools Lab	3	EE Track Elective		
3	EE Core Technical Elective	1	EE Track Elective Lab		
3	EE Core Technical Elective	1	EE Upper Level Technical Elective Lab		
1	EGS 3071 Prof. Formation of Eng 2 (ERCE)	1	EGS 3072 Prof. Formation of Eng 3 (ERCE)		
15	<i>Total Credits</i>	15	<i>Total Credits</i>		

Fourth Year

Fall Semester		Spring Semester	
3	EEL 4906 EE Design I	3	EEL 4914 EE Design II (HIP)
3	EE Track Elective	3	EE Upper Level Technical Elective
3	EE Track Elective	3	EE Upper Level Technical Elective
1	EE Track Elective Lab	1	EE Upper Level Technical Elective Lab
3	EE Upper Level Technical Elective	3	Upper Level Approved Tech. Elective
3	EE Upper Level Technical Elective	3	*** Gen. Ed. Core Social Science Elective
1	Apply for Graduation		
16	<i>Total Credits</i>	16	<i>Total Credits</i>

Notes: Courses in bold must be completed with an overall grade point average of 2.75, see overleaf.

R - Required course * - Requires a minimum grade of a "B".

** - If transferring PHY 2049/L, EEL 3472C will apply as EE upper level and lab elective.

*** Students must meet the Civic Literacy requirement with credit for AMH 2020, POS 2041 or passing the Civic Literacy test.

TGE = Tampa General Education; C = Creative Thinking, I = Information & Data Literacy, D = Human & Cultural Diversity

ERCE = Ethical Reasoning & Civic Engagement HIP = High Impact Practice Capstone

Entrance Requirements for B.S. in Electrical Engineering

- Completion of the following courses with a minimum grade of C and a cumulative 2.75* GPA (based on best attempt) for the following courses:

- ___ Calculus I or Engineering Calculus I (MAC2311 or MAC2281)
- ___ General Chemistry I (CHM2045 & 2045L)
- ___ Calculus II or Engineering Calculus II (MAC2312 or MAC2282)
- ___ Physics I with lab (PHY2048 or PHY2060, PHY2048L)
- ___ Calculus III or Engineering Calculus III (MAC2313 or MAC 2283)

* Students may be admitted conditionally with a 2.50 GPA with department approval and transcript review.

- Need a USF GPA and an Overall GPA of 2.0 or better

Continuation Requirements:

- **Completion of Differential Equations (MAP 2302) or Modeling Analysis of Eng Systems (EGN 3433) with a grade of B or higher (best attempt)**
- Unless otherwise stated, the minimum acceptable grade in BSEE required math, science, engineering and specialization courses is a C or higher (C- is insufficient).
- A minimum GPA of 2.0 in the following categories must be maintained at all times: Overall, USF, Math/Science, Engineering Courses and Specialization Courses.
- All math, science and engineering courses must be successfully completed in no more than **two** registered attempts. Grades of W, I, IF, U, R, and M are considered attempts. Registration that is canceled for non-payment is also considered an attempt.

Technical Tracks Options

Students must choose a minimum of two tracks and take a minimum of two 3-credit courses and a 1-credit laboratory course under each track. See department website for track options.

EE Technical Track Name	Course requirement for Track (EE Core Elective)	
Bioelectrical Systems	EEE 3302 Electronics I	PR: EGN 3373
Communication Systems	EEL 4512C Intro to Communications	PR: EEL 4102
Energy, Power, and Sustainability	EGN 3375 Electromechanical Systems	PR: EGN 3374
Mechatronics, Robotics & Embedded Systems	EEL 4657 Linear Control Systems	PR: EGN 3374
Wireless Circuits & Systems	EEL 4423C Wireless Circuits & Sys Design Lab	PR: EEL 3472C
Micro and Nano-scale Systems	EEE 4351C Semiconductor Devices	PR: EEE 3394

Course Equivalencies

Courses at USF	Courses at a Florida State Institution
MAC 2281 Engineering Calculus I or MAC 2311 Calculus I	MAC X311 or MAC X281
MAC 2282 Engineering Calculus II or MAC 2312 Calculus II	MAC X312 or MAC X282
MAC 2283 Engineering Calculus III or MAC 2313 Calculus III	MAC X313 or MAC X283
MAP 2302 Differential Equations or EGN 3433 Modeling Analysis of Eng Systems	MAP X302 or MAP X305
CHM 2045/CHM 2045L General Chemistry I with Lab Or CHS 2440/2440L General Chemistry for Engineers with lab	CHM X045/X045L or CHM X045C or CHM X041/X045L or CHS X440/X440L
PHY 2048/2048L General Physics I with PHY 2048L	PHY X048/X048L or PHY X048C or PHY X043/X048L
PHY 2049/2049L General Physics II or EEL 3472C or PHY 2061 Enriched Physics II with PHY 2049L	PHY X049/X049L or PHY X049C or PHY X044/X049L