Electrical Engineering B.S.E.E.

128 credits, 2024/2025 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	*Total Credits*	14	*Total Credits*

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	ENC 3246 Communication for Engineers
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 (TGEE)		
!	Appy for Progression to Upper Division				
15	*Total Credits*	*14*	*Total Credits*	*9*	*Total Credits*

Third Year

Fall Semester		Spring Semester		Summer
3	EEL 4102 Signals & Systems	3	EEL 4835 Programming Design	Recommended
3	EGN 3374 Electrical Sys II	1	EGS 3072 Prof. Formation of Eng 3 (TGEE)	**Internship/Co-op**
1	EEL 3115L Lab I (Circuits)	3	EE Core Technical Elective	List
1	EEL 3163C Computer Tools Lab	3	EE Core Technical Elective	Company/employer
3	EE Core Technical Elective	3	EE Track Elective	name and position
3	EE Core Technical Elective	1	EE Track Elective Lab	
1	EGS 3071 Prof. Formation of Eng 2 (TGEE)	1	EE Upper Level Technical Elective Lab	
15	*Total Credits*	*15*	*Total Credits*	

Fourth Year

Fall Semester		Spring Semester	
3	EEL 4906 EE Design I	3	EEL 4914 EE Design II (TGEH)
3	EE Track Elective	3	EE Track 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
!	Apply for Graduation		
16	*Total Credits*	16	*Total Credits*

Notes: Courses in bold must be completed with an overall grade point average of 3.0, see overleaf.

R - Required course

* EEL 3472C is required. If transferring PHY 2049/L, it will apply as EE upper level and lab elective if taken prior to admission.

** Students must meet the Civics req. with credit for AMH 2010 (fall 2024 or later), AMH 2020, or POS 2041 **and** passing the Florida Civics Literacy Exam.

TGEC = Gen Ed Creative Thinking, TGEI = Gen Ed Information & Data Literacy, TGED = Gen Ed Human & Cultural Diversity
TGEE = Gen Ed Ethical Reasoning & Civic Engagement, TGEH = Gen Ed High Impact Practice Capstone

Electrical Engineering Requirements for Progression to Upper Division

- Completion of the following courses with a minimum grade of C and a cumulative **3.0 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 2.75 GPA with department approval and transcript review.*
- Need a USF GPA and an Overall GPA of 2.0 or better

Continuation and Graduation Requirements*:*

Reference Catalog: https://catalog.usf.edu/preview_program.php?catoid=21&poid=10332

- Unless otherwise stated, the minimum acceptable grade in BSEE required math, science, engineering and specialization courses is a C or higher (C- is insufficient).
- Students must have and maintain a minimum 2.0 Semester GPA, 2.0 Math and Science GPA, 2.0 Engineering GPA, 2.0 Specialization GPA, 2.0 USF GPA, and 2.0 Overall GPA.
- All math, science and engineering courses must be successfully completed in no more than two registered attempts. Grades of W, IF, U, and R are considered attempts.

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)**	
#1	Bioelectrical Systems	EEE 3302 Electronics I	PR: EGN 3373
#2	Communication Systems	EEL 4512C Intro to Communications	PR: EEL 4102
#3	Energy, Power, and Sustainability	EGN 3375 Electromechanical Systems	PR: EGN 3374
#4	Mechatronics, Robotics & Embedded Systems	EEL 4657 Linear Control Systems	PR: EGN 3374
#5	Micro and Nano-scale Systems	EEE 4351C Semiconductor Devices	PR: EEE 3394
#6	Wireless Circuits & Systems	EEL 4423C Wireless Circuits & Sys Design Lab	PR: EEL 3472C
#7	Systems and Security	EEL 4512C Intro to Communications	PR: EEL 4102

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