# Electrical Engineering

128 credits, 2018/2019 Catalog

## First Year

### Fall Semester
- ENC 1101 Composition I
- **MAC 2281 or MAC 2311 Calculus I**
- CHS 2440 or CHM 2045 Chemistry I
- R EGN 3000 Foundations of Engineering
- 3 Total Credits

### Spring Semester
- ENC 1102 Composition II
- **MAC 2282 or MAC 2312 Calculus II**
- PHY 2048 General Physics I
- 1 EEL 3705 Fund. Of Digital Circuits
- 14 Total Credits

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## Second Year

### Fall Semester
- **MAC 2283 or MAC 2313 Calculus III**
- EGN 3420 Engineering Analysis
- EEE 3394 EE Science I - Electronic Materials
- 1 EEL 3705L Logic Lab
- 3 State Gen. Ed. Core Humanities Elective
- 3 Total Credits

### Spring Semester
- *EGN 3433 Modeling & Analysis Eng Sys. or MAP 2302 Differential Equations*
- EGN 3373 Electrical Systems I
- **EEL 3472C EE Science II – Electromag.**
- 1 EEL 2161 Electrical Eng Comp Methods
- 1 EEL 3161 Lab I (Circuits)
- **EEL Track Elective**
- 3 Total Credits

### Summer
- 3 EGN 3374 Electrical Sys II
- 3 EGN 3443 Probability & Statistics for Eng. (TGEI)
- 3 EGN 3615 Eng Economics (TGED)
- 9 Total Credits

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## Third Year

### Fall Semester
- EEL 4102 Signals & Systems
- ENC 3246 Communication for Engineers
- EEL 3115L Lab I (Circuits)
- 1 EEL 3163C Computer Tools Lab
- 3 EE Core Technical Elective
- 3 EE Core Technical Elective
- 1 EGS 3071 Professional Formation of Eng 2
- 15 Total Credits

### Spring Semester
- EE Core Technical Elective
- EE Core Technical Elective
- EE Track Elective
- EE Track Elective Lab
- EE Upper Level Technical Elective Lab
- EGS 3072 Professional Formation of Eng 3
- 15 Total Credits

### Internship/Co-op
- List Company/employer name and position

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## Fourth Year

### Fall Semester
- EEL 4906 EE Design I
- EE Track Elective
- EE Track Elective Lab
- EE Upper Level Technical Elective
- EE Upper Level Technical Elective
- 16 Total Credits

### Spring Semester
- EEL 4914 EE Design II
- EE Upper Level Technical Elective
- EE Upper Level Technical Elective Lab
- Upper Level Approved Tech. Elective
- St. Gen. Ed. Core Social Science Elective
- 16 Total Credits

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

- **R** - Required course
- **TGE** = Tampa General Education; **C** = Creative Thinking, **I** = Information & Data Literacy, **D** = Human & Cultural Diversity

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* - Requires a minimum grade of a “B”.
** - If transferring PHY 2049/L, EEL 3472C will apply as EE upper level and lab elective.

Updated 6/26/18
**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.

**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.

<table>
<thead>
<tr>
<th>EE Track Name</th>
<th>Course requirement for Track (EE Core Elective)</th>
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</thead>
<tbody>
<tr>
<td>Bioelectrical Systems</td>
<td>EEE 3302 Electronics I PR: EGN 3373</td>
</tr>
<tr>
<td>Communication Systems</td>
<td>EEL 4512C Intro to Communications PR: EEL 4102</td>
</tr>
<tr>
<td>Energy, Power, and Sustainability</td>
<td>EGN 3375 Electromechanical Systems PR: EGN 3374</td>
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<tr>
<td>Mechatronics, Robotics &amp; Embedded Systems</td>
<td>EEL 4657 Linear Control Systems PR: EEL 4102</td>
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<tr>
<td>Wireless Systems</td>
<td>EEL 4423C Wireless Circuits &amp; Sys Design Lab PR: EEL 3472C or EEL 4471</td>
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<tr>
<td>Micro and Nano-scale Systems</td>
<td>EEE 4351C Semiconductor Devices PR: EEE 3394</td>
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**Course Equivalencies**

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