

# Electrical Engineering Bachelor of Science Degree

Curriculum Year 2020-2021  
FRESHMAN YEAR

| Fall Semester  |   | Cr | Term Completed | Spring Semester |  | Cr | Term Completed |
|----------------|---|----|----------------|-----------------|--|----|----------------|
| ENGR 1020/1021 | Engineering Disciplines and Skills <sup>1</sup> | 2  |                | ENGR 1410/1411  | Programming and Problem Solving <sup>3</sup> | 3  |                |
| CH 1010/1011   | General Chemistry                               | 4  |                | CH 1020/1021    | General Chemistry II                         | 4  |                |
| ENGL 1030      | Composition and Rhetoric                        | 3  |                | MATH 1080       | Calculus II                                  | 4  |                |
| MATH 1060      | Calculus I                                      | 4  |                | PHYS 1220       | Physics with Calculus I                      | 3  |                |
|                | Humanities/Social Science Req. <sup>2</sup>     | 3  |                |                 | Humanities/Social Science Req. <sup>2</sup>  | 3  |                |
|                |   | 16 |                |                 |  | 17 |                |

## SOPHOMORE YEAR

| Fall Semester  |                              | Cr | Term Completed | Spring Semester |   | Cr | Term Completed |
|----------------|------------------------------|----|----------------|-----------------|---|----|----------------|
| CPSC 1110/1111 | Intro to Programming in C    | 3  |                | ECE 2120        | Electrical Engineering Lab II                 | 1  |                |
| ECE 2010       | Logic and Computing Devices  | 3  |                | ECE 2620        | Electric Circuits II                          | 3  |                |
| ECE 2020       | Electric Circuits I          | 3  |                | ECE 2720        | Computer Organization                         | 3  |                |
| ECE 2090       | Logic Lab                    | 1  |                | ECE 2730        | Computer Organization Lab                     | 1  |                |
| ECE 2110       | Electrical Engineering Lab I | 1  |                | MATH 2080       | Differential Equations                        | 4  |                |
| MATH 2060      | Calculus III                 | 4  |                |                 | Humanities/Social Science Req. <sup>2,4</sup> | 3  |                |
| PHYS 2210      | Physics with Calculus II     | 3  |                |                 |   |    |                |
|                |                              | 18 |                |                 |   | 15 |                |

## JUNIOR YEAR

| Fall Semester    |  | Cr       | Term Completed | Spring Semester  |                                   | Cr       | Term Completed |
|------------------|--|----------|----------------|------------------|-----------------------------------|----------|----------------|
| ECE 3110         | Electrical Engineering Lab III         | 1        |                | ECE 3120         | Electrical Engineering Lab IV     | 1        |                |
| ECE 3200         | Electronics I                          | 3        |                | ECE 3170         | Random Signal Analysis            | 3        |                |
| ECE 3300         | Signals, Systems and Transforms        | 3        |                | ECE 3210         | Electronics II                    | 3        |                |
| <b>ECE 3710*</b> | <b>Microcontroller Interfacing</b>     | <b>3</b> |                | <b>ECE 3600*</b> | <b>Electric Power Engineering</b> | <b>3</b> |                |
| <b>ECE 3720*</b> | <b>Microcontroller Interfacing Lab</b> | <b>1</b> |                | ECE 3810         | Fields, Waves and Circuits        | 3        |                |
| ECE 3800         | Electromagnetics                       | 3        |                | ENGL 3140        | Technical Writing                 | 3        |                |
|                  | Advanced Mathematics Req. <sup>5</sup> | 3        |                |                  |                                   |          |                |
|                  |  | 17       |                |                  |                                   | 16       |                |

## SENIOR YEAR

| Fall Semester |   | Cr | Term Completed | Spring Semester |   | Cr | Term Completed |
|---------------|---|----|----------------|-----------------|---|----|----------------|
| ECE 4090      | Intro to Linear Control Systems         | 3  |                | ECE 4960        | Integrated Systems Design II                | 2  |                |
| ECE 4270      | Communications Systems                  | 3  |                |                 | Humanities/Social Science Req. <sup>2</sup> | 3  |                |
| ECE 4950/4951 | Integrated Systems Design I             | 2  |                |                 | EE Technical Elective <sup>6</sup>          | 3  |                |
|               | EE Technical Elective <sup>6</sup>      | 3  |                |                 | EE Technical Elective <sup>6,8</sup>        | 3  |                |
|               | Communications Requirement <sup>7</sup> | 3  |                |                 | Special Requirement <sup>9</sup>            | 3  |                |
|               |   | 14 |                |                 |   | 14 |                |

<sup>1</sup> Or ENGR 1050/1060.

<sup>2</sup> See General Education section of the *Undergraduate Announcements*. Six of these credit hours must also satisfy General Education Cross-Cultural Awareness and Science and Technology in Society Requirements.

<sup>3</sup> Or ENGR 1070/1080/1090.

<sup>4</sup> Or EE Technical Elective (ECE 2220 Systems Programming Concepts for Computer Engineering).

<sup>5</sup> **MATH 3650, MATH 4190\*, MATH 4340, MATH 4400\*, MATH 4410\*\* or STAT 4110.**

**Notes: \*requires MATH 3110 as prereq; \*\*MATH 4000 is prereq. Students will need override to use ECE 3170 in place of MATH 4000. See MATH Dept.**

<sup>6</sup> Select from approved Technical Elective listing found on the ECE website [https://www.clemson.edu/cecas/departments/ece/resources/undergrad\\_resources/curriculum.html](https://www.clemson.edu/cecas/departments/ece/resources/undergrad_resources/curriculum.html).

<sup>7</sup> COMM 1500/1501 or COMM 2500/2501.

<sup>8</sup> Or Humanities/Social Science Req. if ECE 2220 taken in sophomore year.

<sup>9</sup> Special Requirement Options:

- a. A [3-credit approved Humanities/Social Sciences](#) course (see listing in the current Undergraduate Catalog: <http://catalog.clemson.edu/>); or
- b. An additional 3-credit, 4000-level course from the EE Technical Elective List or the CpE Technical Elective List; or
- c. An additional 3-credit MATH course from the following list: MATH 3110 (Linear Algebra), MATH 4120 (Intro to Modern Algebra), MATH 4190 (Discrete Math), MATH 4340 (Advanced Engineering Math), MATH 4350 (Complex Variables), MATH 4400 (Linear Programming), MATH 4410 (Intro to Stochastic Models), MATH 4530 (Advanced Calculus I), MATH 4540 (Advanced Calculus II).