



# **Bachelors of Science in Electrical Engineering**

## **4-Year Curriculum Map for 2019-2020 – Transfer Students**

The page represents a flowchart of required courses arranged in vertical boxes. There are 3 wider vertical boxes, the first of which represents a list of transfer courses an incoming student with an AA degree should have completed, the second and third wider boxes represent a year and contains two columns representing two semesters within each year. The two narrower boxes represent summer terms. Semesters are identified by number indicated by labels at the bottom of each column. From left to right:

- The first column lists the transfer courses that an incoming student should already have completed.
- The second column represents Summer 1
- The third column represents Year 1 and contains 2 columns of courses for Semester 1 and Semester 2 respectively
- The third column represents Summer 2
- The third column represents Year 2 and contains 2 columns of courses for Semester 3 and Semester 4 respectively

Each box in the flowchart represents a single course, and contains the course prefix and number, number of credit hours and an abbreviated course title. Lines between the boxes define the relationship between courses (pre-requisite, co-requisite, or non-engineering general education course). A legend is provided to explain how colored lines (red and green) are used to indicate a prerequisite vs co-requisite relationship. The relationship indicated by the lines and their colors fully described below:

### **Incoming Students with an AA Degree should have competed the following courses:**

- CHM 2045 – General Chemistry I (3 credit hours)
- COP 2200 – Computer Science (3 credit hours)
- PHY 1041 – Physics for Engineers I (3 credit hours)
- PHY 2048 – Calculus-based Physics I (3 credit hours)
- PHY 2048L – Calculus-based Physics I Lab (1 credit hour)
- PHY 2049 – Calculus-based Physics II (3 credit hours)
- PHY 2049L – Calculus-based Physics II Lab (1 credit hour)
- MAC 2311 – Calculus I (4 credit hours)
- MAC 2312 – Calculus II (4 credit hours)
- MAC 2313 – Calculus III (4 credit hours)
- MAP 2302 – Differential Equations (3 credit hours)

### **Courses in Summer 1:**

- EEL 3111 – Circuit Analysis I (3 credit hours)
  - Prerequisite PHY 2042 (Physics for Engineers II) and MAC 2313 (Calculus III)
  - Co-requisite MAP 2302 (Differential Equations)
- EGN 1001C – Introduction to Engineering I (2 credit hours)
  - Co-requisite course MAC 1147 (Precalculus) or any higher-level MAC course (2xxx)
- MAS 3105 – Linear Algebra (4 credit hours)
  - Taught by another department
  - Prerequisite MAC 2312 (Calculus II)

### **Courses in Year 1, Semester 1:**

- EEL 3701 – Introduction to Digital Design (3 credit hours)
  - Prerequisite course COP 2220 (Computer Science) and EGN 1001C (Introduction to Engineering I)
  - Co-requisite courses PHY 2042 (Physics for Engineers II)
- EEL 3701L – Introduction to Digital Design Lab (1 credit hour)
  - Prerequisite course COP 2220 (Computer Science)
  - Co-requisite course PHY 2042 (Physics for Engineers II) and EEL 3701 (Introduction to Digital Design)
- EEE 3308 – Microelectronics I (3 credit hours)
  - Prerequisite EEL 3111 (Circuit Analysis I)
- EEL 3117L - Electric Circuits Lab (1 credit hour)

- Co-requisite EEL 3112 (Circuit Analysis II)
- EEL 3112 – Circuit Analysis II (3 credit hours)
  - Prerequisite EEL 3111 (Circuit Analysis I)
- EEL 3216 – Introduction to Power Systems (3 credit hours)
  - Prerequisite EEL 3111 (Circuit Analysis I)
- EEL 3013 – Modeling and Simulation in Electrical Engineering (3 credit hours)
  - Co-requisite course COP 2200 (Computer Science)

#### **Courses in Year 1, Semester 2:**

- EEL 4744C – Microcontroller Applications (4 credit hours)
  - Prerequisite EEL 3701 (Introduction to Digital Design) and EEL 3701L (Introduction to Digital Design Lab)
- EEE 4309 – Microelectronics II (3 credit hours)
  - Prerequisite EEE 3308 (Microelectronics I) and EEL 3117L (Electric Circuits Lab)
- EEE 4309L – Electronics Lab (1 credit hour)
  - Prerequisite EEE 3308 (Microelectronics I) and EEL 3117L (Electric Circuits Lab)
  - Corequisite EEE 4309 (Microelectronics II)
- EEL 3135 – Signals and Systems (3 credit hours)
  - Prerequisite EEL 3112 (Circuit Analysis II), MAS 3105 (Linear Algebra) and EEL 3013 (Modeling and Simulation in EE)
- STA 4321 – Probability and Statistics (4 credit hours)
  - Taught by another department
  - Prerequisite MAC 2312 (Calculus II)

#### **Courses in Summer 2:**

- ENC 3250 – Professional Communications (3 credit hours)
  - Taught by another department
- EEL XXXX – Technical Elective 1 (3 credit hours)
  - See course catalog for details

#### **Courses in Year 2, Semester 3:**

- EEL 4914 – Senior Capstone Design I (3 credit hours)
  - Prerequisite ENC 3250 (Professional Communications for Engineers), EEL 4744C (Microcontroller Applications), EEE 4309 (Microelectronics I) and EEE 4309L (Electronics Lab)
- EEL 4514 – Communication Systems (3 credit hours)
  - Prerequisite EEL 3135 (Signals and Systems) and STA 4321 (Probability and Statistics)
- EEL 4514L – Communication Systems (1 credit hour)
  - Prerequisite EEL 3135 (Signals and Systems) and STA 4321 (Probability and Statistics)
  - Co-requisite EEL 4514 (Communication Systems)
- EEL 4657 – Linear Control Systems (3 credit hours)
  - Prerequisite EEL 3135 (Signals and Systems) and STA 4321 (Probability and Statistics)
- EEL 4657L – Linear Control Systems Lab (1 credit hour)
  - Prerequisite EEL 3135 (Signals and Systems) and STA 4321 (Probability and Statistics)
  - Co-requisite EEL 4657 (Linear Control Systems)
- EEL XXXX – Technical Elective 2 (3 credit hours)
  - See course catalog for details

#### **Courses in Year 2, Semester 4:**

- EEL 4915 – Senior Capstone Design II (3 credit hours)
  - Prerequisite EEL 4914 (Senior Capstone Design I)
- EEL XXXX – Technical Elective 3 (3 credit hours)
  - See course catalog for details
- EEL XXXX – Technical Elective 4 (3 credit hours)
  - See course catalog for details
- EEL XXXX – Technical Elective 5 (3 credit hours)

- See course catalog for details
- EEL 3472 – Electromagnetic Fields and Applications (3 credit hours)
  - Prerequisite EEL 3112 (Circuit Analysis II) and MAP 2303 (Differential Equations)