

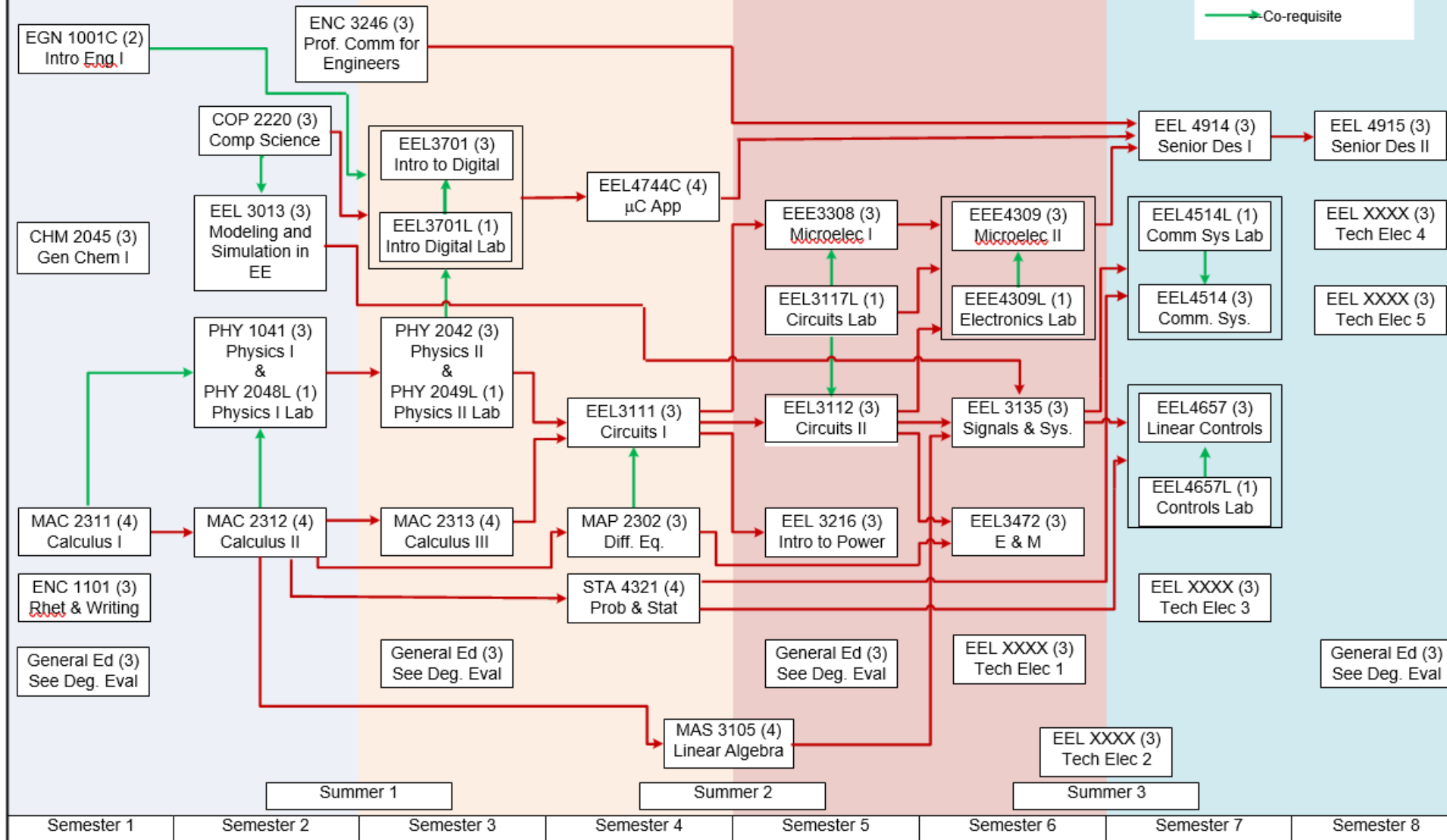


# Bachelors of Science in Electrical Engineering

## 4-Year Curriculum Map – 2020-2021



→ Pre-requisite  
→ Co-requisite



# Bachelors of Science in Electrical Engineering

## 4-Year Curriculum Map for 2020-2021

The page presents a flowchart of required courses arranged in 4 evenly sized vertical boxes. Each vertical box represents one year of the standard four-year curriculum and contains two columns representing the two semesters within each year. Semesters are identified by number indicated by labels at the bottom of each column. From left to right:

- The first column represents Year 1 and contains 2 columns of courses for Semester 1 and Semester 2 respectively
- The second column represents Year 2 and contains 2 columns of courses for Semester 3 and Semester 4 respectively
- The third column represents Year 3 and contains 2 columns of courses for Semester 5 and Semester 6 respectively
- The fourth column represents Year 4 and contains 2 columns of courses for Semester 7 and Semester 8 respectively
- Courses staggered across two vertical boxes indicate summer semesters listed in between the colored rectangles represent summer terms (Summer 1, 2 & 3 respectively)

Each box in the flow chart represents a single course, and contains the course prefix and number, number of credit hours and an abbreviate course title. Lines between the boxes define the relationship between the courses (pre-requisite, co-requisite, or non-engineering general education courses). 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 is fully described below:

### Courses in Year 1, Semester 1:

- EGN 1001C – Introduction to Engineering I (2 credit hours)
  - Co-requisite course MAC 1147 (Precalculus) or any higher-level MAC course (2xxx)
- CHM 2045 – General Chemistry I (3 credit hours)
  - Taught by another department
- MAC 2311 – Calculus I (4 credit hours)
  - Prerequisite MAC 1147 (Precalculus)
  - Taught by another department
- ENC 1101 – Rhetoric and Writing (3 credit hours)
  - Taught by another department
- General Education Requirement, non-engineering course (3 credit hours)
  - Taught by another department – see degree evaluation for details

### Courses in Year 1, Semester 2:

- COP 2200 – Computer Science (3 credit hours)
  - Taught by another department
- EEL 3013 – Modeling and Simulation in Electrical Engineering (3 credit hours)
  - Co-requisite course COP 2200 (Computer Science)
- PHY 1041 – Physics for Engineers I (3 credit hours)
  - Taught by another department
  - Co-requisite course MAC 2311 (Calculus I)
- PHY 2048L – Calculus-based Physics I Lab (1 credit hour)
  - Taught by another department
  - Co-requisite PHY 1041 (Physics for Engineers I) or PHY 2048 (Calculus-based Physics)
- MAC 2312 – Calculus II (4 credit hours)
  - Taught by another department
  - Prerequisite MAC 2311 (Calculus I)

### Courses in Summer 1, Between Year 1 and Year 2:

- ENC 3246 – Professional Communications for Engineers (3 credit hours)
  - Taught by another department

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

- EEL 3701 – Introduction to Digital Design (3 credit hours)
  - Prerequisite course COP 2220 (Computer Science)
  - Co-requisite courses PHY 2042 (Physics for Engineers II) and EGN 1001C (Introduction to Engineering I)
- 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)
- PHY 2042 – Physics for Engineers II (3 credit hours)
  - Taught by another department
  - Prerequisite PHY 1041 (Physics for Engineers I), and MAC 2312 (Calculus II)
- PHY 2049L – Calculus-based Physics II Lab
  - Taught by another department
  - Co-requisite PHY 2049 (Calculus-based Physics II) or PHY 2042 (Physics for Engineers II)
- MAC 2313 – Calculus III (4 credit hours)
  - Taught by another department
  - Prerequisite MAC 2312 (Calculus II)
- General Education Requirement, non-engineering course (3 credit hours)
  - Taught by another department – see degree evaluation for details

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

- EEL 4744C – Microcontroller Applications (4 credit hours)
  - Prerequisite EEL 3701 (Introduction to Digital Design) and EEL 3701L (Introduction to Digital Design Lab)
- 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)
- MAP 2302 – Differential Equations (3 credit hours)
  - Taught by another department
  - Prerequisite MAC 2312 (Calculus II)
- STA 4321 – Probability and Statistics (4 credit hours)
  - Taught by another department
  - Prerequisite MAC 2312 (Calculus II)

**Courses in Summer 2, Between Year 2 and Year 3:**

- MAS 3105 – Linear Algebra (4 credit hours)
  - Taught by another department
  - Prerequisite MAC 2312 (Calculus II)

**Courses in Year 3, Semester 5:**

- 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)
- General Education Requirement, non-engineering course (3 credit hours)
  - Taught by another department – see degree evaluation for details

**Courses in Year 3, Semester 6:**

- 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)
- EEL 3472 – Electromagnetic Fields and Applications (3 credit hours)
  - Prerequisite EEL 3112 (Circuit Analysis II) and MAP 2303 (Differential Equations)
- EEL XXXX – Technical Elective 1 (3 credit hours)
  - See course catalog for details

**Courses in Summer 2, Between Year 3 and Year 4:**

- EEL XXXX – Technical Elective 2 (3 credit hours)
  - See course catalog for details

**Courses in Year 4, Semester 7:**

- EEL 4914 – Senior Capstone Design I (3 credit hours)
  - Prerequisite ENC 4234 (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 3 (3 credit hours)
  - See course catalog for details

**Courses in Year 4, Semester 8:**

- EEL 4915 – Senior Capstone Design II (3 credit hours)
  - Prerequisite EEL 4914 (Senior Capstone Design I)
- 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
- General Education Requirement, non-engineering course (3 credit hours)
  - Taught by another department – see degree evaluation for details