EE Elective courses are offered in the various areas of specialty within ECE. These are not concentrations and are not listed on your diploma. Check the Course Descriptions and Schedule of Classes for current course information. It is a good idea to have a strong focus in at least one area for your career or grad school. You can mix and match classes as you like. Plan your electives at least 3 semesters in advance - when you are in JR EE courses and are learning what the different areas involve. Graduate level, lecture-based courses qualify as EE Elective credit. A concentration will be listed on the diploma.

Special Topics vary:  

**EE Elective** courses are EE courses that are not specifically required, are lecture-based, and not EE3010, EE3805, EE4000, EE4805, EE3901, EE4901, EE4910.

Graduate level EE lecture courses may be used - Instructor/level waiver approval needed to register.

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**Power & Energy:**

- EE 4219 Introduction to Electric Machinery and Drives  
  Spring
- EE 4220 Introduction to Electric Machinery and Drives Lab  
  Spring
- EE 4221 Power System Analysis  
  Fall
- EE 4222 Power System Analysis  
  Spring
- EE 5223 Power System Protection  
  Spring or Odd Springs - check schedule of classes
- EE 5224 Power System Protection Lab  
  Spring or Odd Springs - 
- EE 5250 Distribution Engineering  
  Spring or Even Springs - check schedule of classes
- EE 4226 Power Engineering Lab  
  Spring, Summer D(1st week of May)
- EE 4227 Power Electronics  
  Fall
- EE 4228 Power Electronics Lab  
  Fall
- EE 4295 Intro Propulsion Systems for Hybrid Elec Vehicles  
  Fall
- EE 4296 Experiential Studies in HEV  
  Fall

**Photonics:**

- Also See EE Photonics Concentration Requirements (Degree Services – audit)
  - EE 2190 Introduction to Photonics  
    Spring (begins Spring 2019)
  - EE 3090 Geometrical & Wave Optics  
    Fall (ends Fall 2017)
  - EE 3190 Optical Sensing and Imaging  
    Spring
  - EE 3290 Photonic Material, Devices & Apps  
    Fall 4 cr.
  - EE 4490 Laser Systems and Applications  
    Spring 4 cr.
  - EE 4290 Optical Communication  
    Spring

**Control:**

- EE 4219 Introduction to Electric Machinery & Drives  
  Spring
- EE 4220 Introduction to Electric Machinery and Drives Lab  
  Spring
- EE 4262 Digital & Non-Linear Control  
  Spring
- EE 4777 Open-Source 3-D Printing  
  Fall
- EE 5750 Distributed Embedded Control Systems  
  Spring
- EE 4373 Intro to Programmable Controllers (PLCs)  
  Fall
- EE 4373 Advanced Programmable Controllers  
  Spring 4 cr.

**DSP:**

- EE 4252 Digital Signal Processing and Its Applications  
  Fall 4 cr
- EE 4253 Real-time Signal Processing  
  Spring
- EE 5527 Digital Communications  
  Spring

**Electronics:**

- EE 4231 Physical Electronics  
  Spring (previously offered in falls)
- EE 4271 VLSI Design  
  Fall (if offered)
- EE 4240 Introduction to MEMS  
  Alternating Falls 4 cr.

**Communication:**

- EE 5527 Digital Communications  
  Spring
- EE 4272 Computer Networks  
  Fall (Co-listing with CS4461) QcE’s
- EE 4723 Network Security  
  Spring QcE’s

**Electromagnetics:**

- EE 4411 Engineering Electromagnetics  
  Fall (Not offered fall 2018)
- EE 4490 Laser Systems and Applications  
  Fall or Spring-check SOC 4 cr. (offered fall 2018)

**Computer Systems:**

- EE 4272/CS4461 Computer Networks  
  Fall/Spring (Co-listing with CS4461) QcE’s
- EE 5496 GPU and Multicore Programming  
  Fall QcE’s
- EE 4737 Embedded System Interfaces  
  Spring 4 cr. (begins Spring 2019) [EE4735 ended spring 2016]
- EE 4723 Network Security  
  Spring QcE’s
- EE 4271 VLSI Design  
  Fall

Check online descriptions for most current pre-requisites and semester offerings. Plan ahead. See schedules for new offerings.

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