

EE Technical Elective courses listed by focus area *B.S. Electrical Engineering degree*

~ plan ahead ~

'EE Technical Elective' courses are offered in the various areas of specialty (focus areas) within ECE. These are not concentrations and are not listed on your diploma. Check the Course Descriptions and Schedule of Classes (SOC) 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 Technical Elective credit. A concentration will be listed on the diploma.

Special Topics vary: **EE 4800** Check SOC and catalog descriptions for additional EE course offerings each semester using EE4800.

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 1 Fall
- EE 4222** Power System Analysis 2 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 & Appls Fall 4 cr.
- EE 4490** Laser Systems and Applications Spring 4 cr.
- EE 4290** Optical Communication Spring (not always available)

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 3373** Intro to Programmable Controllers (PLC's) Fall
- EE 4373** Advanced Programmable Controllers Spring 4 cr.

DSP:

- EE 4252** Digital Signal Processing and It's Applications Fall 4 cr
- EE 4253** Real-time Signal Processing Spring (not offered recently)
- EE 5527** Digital Communications Spring

Electronics:

- EE 4231** Physical Electronics Fall (sometimes Spring)
- EE 4232** Electronic Applications Spring
- 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) CpE's
- EE 4723** Network Security Spring CpE's

Electromagnetics:

- EE 4411 Engineering Electromagnetics Fall (not always available)
- EE 4490** Laser Systems and Applications Fall or Spring-check SOC 4 cr. (offered fall 2019)

Computer Systems

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

Photonics Concentration required courses

EE2190, EE3190, EE3290, EE4490

Photonics Concentration electives

(2009 and later)

Choose 6 credits from the following:

BE4250(s-odd), BE4410(s-odd),
 EE4240(f), EE4252&59(f),
 EE4253(s), EE4290(s), MSE4292(s),
 PH3410(s), PH4510(f),
 PH4640(f-odd)

Also, choose 3 cr. of EE Technical Electives.

EE3171 and EE3120 are not required with the
 Photonics Concentration. Waiver needed for
 EE4901 and ENT4950.

Use Curriculum Add/Drop form to add a
 concentration in Photonics with BSEE.

Check online descriptions for most current pre-requisites and semester offerings. See Schedule of Classes (SOC) for new offerings.

EE Technical Electives are EE courses that are not specifically required, are lecture-based, and not EE3010, EE3805, EE4000, EE4805, EE3901, EE4901, EE4910. EE nXXE – may not be used unless course is approved by the department (syllabus required).

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