Bachelor of Science in Electrical Engineering 2014-2015

The program leading to the BSEE Degree is accredited by the Engineering Accreditation Commission (EAC) of ABET*, http://www.abet.org. The BSEE is the usual degree taken by students planning a career of engineering practice, and can reduce the time required to become a licensed professional engineer. Accreditation and professional licensure are important for some careers, and many states require licensure for those providing engineering services directly to the public, for example, as a consultant. See the section in the General Announcements for the general university degree requirements.

A BSEE program must have a total of at least 134 semester hours and include the following courses. A course can satisfy only one program requirement. Students who place out of required courses without transcript credit must substitute other approved courses in the same area. Current degree requirements and planning sheets may be found on the ECE website: www.ece.rice.edu.

**University Distribution Requirements:** Groups I and II (24 hours)

**Mathematics and Science Courses:**
- CHEM 121, ELEC 261, ELEC 303
- MATH 101, 102, 212, MATH 355 or CAAM 335, PHYS 101/111, PHYS 102/112
- Additional approved math and science courses to bring the total to 32 hours.

**ECE Core:** ELEC 220, 241, 242, 301, 305, and 326

**Computation:** COMP 140

**Design:** ELEC 494 Senior Design - 3 hours/each semester

**Design Laboratory:** Students choose one of the approved design laboratory courses typically based on their Specialization Area:
- a) ELEC 327 Implementation of Digital Systems for Computer Engineering Area;
- b) ELEC 332 Electronic Systems Principles and Practice for Systems Area;
- c) ELEC 327 or ELEC 332 for Neuroengineering Area; and,
- d) ELEC 364 Photonic Measurements: Principles and Practice for Photonics and Nanoengineering Area.

*Note: the required Design Laboratory course does not count as a specialization course.*

**Specialization:** For the BSEE Program, a minimum of 6 Specialization Area courses, including 3 or more in one area, and courses from at least two areas are required. Each course must be at least 3 credit hours. The department may add or delete courses from the areas, and graduate courses and equivalent courses from other departments may be used to satisfy area requirements with permission. **Graduate courses in the 500-level series, can often count as specialization courses with an advisor's approval.** Consult with department advisors and the ECE web site: www.ece.rice.edu for the latest area courses.

*Note: If the Design Laboratory requirement (ELEC 327, 332, or 364) is satisfied with the lab in the student's chosen Major Specialization Area, then the student takes 3 of the 6 courses in his/her chosen Major Area; however, if the Design Laboratory requirement is satisfied with the lab in the student's Minor Area, then it is recommended that the student take 4 of the 6 courses in his/her chosen Major Area. It is important to consult a departmental advisor in this situation or if interested in taking a second Design Laboratory course.*

**Computer Engineering:** ELEC 323\(^1\), 342, 345, 419, 420\(^1\)-421\(^1\), 424, 425, 427, 429\(^1\), 446 and COMP 321\(^1\), and 430\(^1\)

\(^1\)Note: The courses marked above with a plus (+), ELEC 323/COMP 322, ELEC 420/COMP 482, ELEC 421/COMP 421, ELEC 429/COMP 429, COMP 321 and COMP 430 are courses listed or cross-listed with Computer Science.

The sequence of COMP 140, COMP 182, and COMP 215 is recommended for the Computer Engineering Area as these are prerequisites for the cross-listed Computer Science courses.

**Neuroengineering:** ELEC 342, 345, 381, 431, 480, 481, 482, 485, 486, 488\(^1\) and 489\(^1\).

**Photonics and Nanoengineering:** ELEC 262, 306, 342, 361, 365, 462, and PHYS 302 and 311.


**Unrestricted Electives:** Additional courses to satisfy the BSEE minimum requirement of 134 semester hours.