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. The program leading to the BSEE Degree is accredited by the Engineering Accreditation Commission (EAC) of ABET^ (abet.org).

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. See the section in the General Announcements for the general university degree requirements.

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

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

**ECE Core Courses:** ELEC 220, 241, 242/244, 301, 305, 326

**Computation:** COMP 140

**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; Data Science Area; and  
d) ELEC 364 Photonic Measurements: Principles and Practice for Photonics, Electronics and Nano-devices.

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

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

**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 may count as specialization courses with an advisor's approval.** Consult with department advisors and the ECE web site: 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†, 342, 345, 419, 421†, 422, 424, 425, 427, 429†, 446, 475, and COMP 321†, 330, 382† and 430†  
*Note: The courses marked above with a dagger (†) are courses listed or cross-listed with Computer Science. The sequence of COMP 140, COMP 182, and COMP 215 is recommended in addition for the Computer Engineering Area as these are prerequisite for the cross-listed Computer Science courses.*

**Data Science:** ELEC 345, 424, 425, 427, 431, 439, 480, 488*, 489*, COMP 430†, and STAT 444††  
*Note: The courses marked above with an asterisk (*) are courses cross-listed with Computational and Applied Mathematics and Neuroscience; with a dagger (†) are courses listed or cross-listed with Computer Science; with a double dagger († †) are courses listed with Statistics that may have additional prerequisites.*

**Neuroengineering:** ELEC 342, 345, 381, 431, 480, 481, 482, 485, 486, 488* and 489*  
*Note: The courses marked above with an asterisk (*) are courses cross-listed with Computational and Applied Mathematics and Neuroscience.*

**Photonics, Electronics and Nano-devices:** ELEC 262, 306 (or PHYS 302), 342, 361 (or PHYS 311), 365, 462, and PHYS 412 and 416

**Systems: Communications, Control, Networks & Signal Processing:** ELEC 302, 306, 345, 430, 431, 433, 434, 435, 436, 437, 438, 439 and 498

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

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