

McKelvey School of Engineering
BS in Electrical Engineering Curriculum¹
2024-2025 Catalog Year, 4/23/24

FIRST YEAR

Units	Fall Semester
3	Math 132 Calculus II [Math131] ⁵
3	Phys 191 or 193 Physics I [Math 132] ⁶
1	Phys 191L or 193L Physics I Lab
4	ESE 105 Intro to Electrical and Systems Engineering
3	CSE 131 Intro to Computer Science
14	Semester Total

Units	Spring Semester
3	Math 233 Calculus III [Math 132] ⁵
3	Phys 192 or 194 Physics II [Math 132, Phys 191 or 193] ⁵
1	Phys 192L or 194L Physics II Lab
3	ESE 205 Intro to Engineering Design
3	ESE 217 Differential Equations and Dynamical Systems Modeling in Engineering [ESE 105] ⁵
3	H&SS Elective ²
16	Semester Total

SECOND YEAR

Units	Fall Semester
3	ESE 2180 Linear Algebra and Component Analysis [ESE 105] ⁵
3	ESE 260 Intro to Digital Logic and Computer Design [CSE 131] ⁵
3	Chem 105 or 111A Chemistry ⁷
2	Chem 151 Lab [Chem 105 or 111A] ⁶
4	ESE 230 Intro to Circuits [Phys 192 or 194] ⁵ [ESE 217 or Math 217] ⁶
15	Semester Total

Units	Spring Semester
3	ESE 2190 Vector Calculus and Dynamics [ESE 2180, (ESE 217 or MATH 217)] ⁵
3	ESE 326 Probability and Statistics for Engineering [Math 233] ⁵
3	ESE 351 Signals and Systems ⁹
3	ESE 232 Intro to Electronic Circuits [ESE 230] ⁵
3	H&SS Elective ²
15	Semester Total

THIRD YEAR

Units	Fall Semester
3	Electrical Engineering Laboratory ³
3	Engineering and science breadth elective ⁸
3	ESE 330 Engr Electromagnetics Principles [Phys 198, ESE 2190] ⁵
3	Electrical Engineering electives with engineering topics units ¹⁰
3	H&SS Elective ²
15	Semester Total

Units	Spring Semester
3	Electrical Engineering Laboratory ³
3	Engr 310 Technical Writing [Junior] ⁶
6	Electrical Engineering electives with engineering topics units ¹⁰
3	H&SS Elective ²
15	Semester Total

FOURTH YEAR

Units	Fall Semester
3	Free electives ⁴
3	H&SS Elective ²
1	Engr 4501 Engineering Ethics and Sustainability
6	Electrical Engineering electives with engineering topics units ¹⁰
3	Engineering and science breadth elective ⁸
16	Semester Total

Units	Spring Semester
3	ESE 498 Electrical Engineering Capstone Design Projects
3	H&SS Elective ²
5	Free electives ⁴
3	Engineering and science breadth elective ⁸
14	Semester Total

Bolded courses are typically taught fall and spring semesters.

¹ A minimum of 120 units (an average course load of 15 units per semester) are required for the BSEE degree.

² A minimum of 18 units of H&SS are required

³ Two upper-level lab courses (6 units) from following list: ESE 331, ESE 3301, ESE 435, ESE 4480, ESE 4481, ESE 465, ESE488. Must include one of ESE 331, ESE 3301, ESE 465, ESE 488.

⁴ Free Elective: Any course from Engineering or other WU schools

⁵ Pre-requisite

⁶ Co-requisite

⁷ Chem 111A recommended, but Chem 105 accepted

⁸ 9 units in engineering or science outside EE required. Choose from the following areas: BME, EECE, CS, MechE, econ, math, phys, biol, chem, E&P sci, pre-med

⁹ Prerequisites: Physics 192 or 194, ESE 217, ESE 2180, and ESE 105 or ESE 230

¹⁰ At least 15 units of elective ESE courses in electrical engineering subjects. There are 45 topics units in the entire course sequence for the BSEE. For more information, visit [here](#).