

## Minimum required: 131 semester credit hours

### Admission Requirements

1. The Bachelor of Science (B.S.) degree with a major in Electrical Engineering requires admission to the university and admission to the program. Information about the program admissions can be found at: <http://mycatalog.txstate.edu/undergraduate/science-engineering/ingram-school/#admissionstext>

2. In order to declare Electrical Engineering as a major, students must meet one of the following prerequisites:

- ACT Math score of 24 or higher,
- SAT Math score of 550 (re-centered) or higher, or
- credit for one of the following Math courses with a grade of "C" or higher:

Code	Title	Hours
MATH 1315	College Algebra	3
MATH 1317	Plane Trigonometry	3
MATH 1319	Mathematics for Business and Economics I	3
MATH 1329	Mathematics for Business and Economics II	3

3. Students who do not meet the above prerequisites may choose Pre-Electrical Engineering as their major. Pre-Electrical Engineering students who complete one of the following Math courses with a grade of "C" or higher may declare Electrical Engineering as their major:

Code	Title	Hours
MATH 1315	College Algebra	3
MATH 1317	Plane Trigonometry	3
MATH 1319	Mathematics for Business and Economics I	3
MATH 1329	Mathematics for Business and Economics II	3

### General Requirements

- The general education core curriculum courses are listed in the degree plan below along with the statewide component code number. See the General Education Core Curriculum (<http://mycatalog.txstate.edu/undergraduate/general-education-core-curriculum/>) section of this catalog for the Texas State requirements and options in the core curriculum, including Honors courses.
- For transfer students, 30-31 semester credit hours may be transferred from a Texas public institution of higher education for the Electrical Engineering Field of Study and be applied to the Bachelor of Science degree with a major in Electrical Engineering at Texas State University. More information about the Field of Study (<http://mycatalog.txstate.edu/undergraduate/general-information/academic-policies/texas-legislative-requirements/>) is available in the Academic Policies section of this catalog. The transferable Texas Common Course Number (TCCN) is listed below the Texas State University course number in the following course list.

Code	Title	Hours
MATH 2471	Calculus I	4
TCCN: MATH 2413		
MATH 2472	Calculus II	4
TCCN: MATH 2414		

MATH 2393	Calculus III	3
TCCN: MATH 2315		
MATH 3323	Differential Equations	3
TCCN: MATH 2320		
PHYS 2325 & PHYS 2125	Mechanics and Mechanics Laboratory	4
TCCN: PHYS 2425 or 2325/2125		
PHYS 2326 & PHYS 2126	Electricity and Magnetism and Electricity and Magnetism Laboratory	4
TCCN: PHYS 2426 or 2326/2126		
CS 1428	Foundations of Computer Science I	4
TCCN: COSC 1420 or 1320		
EE 2400	Circuits I	4
TCCN: ENGR 2405 or 2305/2105		
<b>Total Hours</b>		<b>30</b>

- Students must complete a minimum of 36 advanced hours (3000 or 4000 level courses).
- Nine semester credit hours must be writing intensive (WI).
- Students entering Texas State with fewer than 16 credit hours completed after high school graduation will be required to take US 1100. All others will be exempt from taking this course.
- All students in the Electrical Engineering degree programs must complete Electrical Engineering (EE) course prerequisites with a grade of "C" or higher.
- If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.
- The Electrical Engineering degree programs include all the courses required for an Applied Mathematics minor.

### Course Requirements

		Freshman	
First Hours Semester	Second Hours Semester	Summer Hours	
CHEM 1335 (Life and Physical Sciences Component Code 030 [TCCN CHEM 1309 or 1409])	3 PHYS 2325 & PHYS 2125 (Life and Physical Sciences Component Code 030 [TCCN PHYS 2325 & 2125])	4 American History Component Code 060	3
CHEM 1135 (TCCN CHEM 1109 [taken with TCCN 1309])	1 MATH 2472 (Component Area Option Code 090/092 [TCCN MATH 2414])	4	

MATH 2471 (Mathematics Component Code 020 [TCCN MATH 2413])	4 American History Component Code 060	3
PHIL 1305 or 1320 (Language, Philosophy, and Culture Component code 040 [TCCN PHIL 1301 or PHIL 2306])	3 Communica Component Code 010	3
US 1100	1	
ENG 1310 (Communica Component Code 010 [TCCN ENGL 1301])	3	
	<b>15</b>	<b>14</b>

**Sophomore**

First Hours Semester	Second Hours Semester	Summer Hours	
EE 2400 (TCCN: ENGR 2405 or 2305/2105)	4 EE 2420	4 POSI 2310 (Government/ Political Science Component Code 070 [TCCN GOVT 2306])	3
MATH 2393 (TCCN MATH 2315)	3 ENGR 2301 (TCCN ENGR 2301)	3	
MATH 3323 (TCCN MATH 2320)	3 MATH 3377	3	
PHYS 2326 & PHYS 212 (Component Area Option Code 090/093 [TCCN PHYS 2326 & PHYS 2126])	4 PHYS 2335 & PHYS 213	4	

CS 1428 (TCCN COSC 1437)	4 ECO 2301 (Social and Behavioral Sciences Component Code 080 [TCCN ECON 1301 or ECON 2302])	3
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**18**                      **17**                      **3**  
**Junior**

First Hours Semester	Second Hours Semester	
EE 3400	4 EE 3340	3
EE 3420	4 EE 3350	3
EE 4392	3 EE 3355	3
IE 3320	3 EE 3370	3
POSI 2320 (Government/ Political Science Component Code 070 [TCCN GOVT 2305])	3 Creative Arts Component Code 050 [HUMA 1315]	3

**17**                      **15**                      **Senior**

First Hours Semester	Second Hours Semester	
EE 4350	3 EE 4355 or 4394	3
EE 4352	3 EE 4391	3
EE 4390	3 EE Electives <sup>1</sup>	6
ENGR 3315	3	
EE Elective <sup>1</sup>	5	
	<b>17</b>	<b>12</b>

**Total Hours: 131**

<sup>1</sup> A minimum of eleven (11) hours of advanced Electrical Engineering electives chosen from the list below are required.

**Advanced Electrical Engineering Electives**

Code	Title	Hours
EE 3326	Numerical and Scientific Data Analysis Using Python	3
EE 4180	Electric Machines Lab	1
EE 4321	Digital Systems Design Using HDL	3
EE 4323	Digital Image Processing	3
EE 4351	Fundamentals of Electroceramics	3
EE 4353	Fundamentals of Advanced Semiconductor Technology	3
EE 4354	Flexible Electronics	3

EE 4355	Analog and Mixed Signal Design	3
EE 4356	Power Electronics	3
EE 4360	Linear Control Systems	3
EE 4375	Building a Smart Grid Architecture	3
EE 4377	Introduction to Digital Signal Processing	3
EE 4380	Electric Machines	3
EE 4381	Sustainable Energy & Storage	3
EE 4382	Advanced Power Systems	3
ENGR 4395	Independent Studies in Engineering	3
EE 4357	Introduction to Power Systems	3
EE 4359	Advanced Electronic Materials and Devices	3

Choose a maximum of 3 hours from the following:

ENGR 3190	Cooperative Education
ENGR 3290	Advanced Cooperative Education