



Degree Map

CATALOG YEAR: 2025-2026

Degree: BSEE

MAJOR: Electrical Engineering
CONCENTRATION: Vehicle Engineering

The major map illustrates one path to completing your major, based on faculty members' advice on course sequence and course schedule. This document provides general direction.

Course	Cr. Hrs.	Course	Cr. Hrs.
FIRST YEAR			
Semester: Fall	Total Credit Hours: 17	Semester: Spring	Total Credit Hours: 15
ENGL 1010 Writing Comp I	3	ENGL 1020 Writing Comp II	3
MATH 1910 Calculus I	4	MATH 1920 Calculus II	4
CHEM 1110 General Chemistry I	4	CSC 1300 Intro to Problem Solv & Comp Prog	4
ECE 1000 Explorations in ECE	3	ECE 2140 Intro to Digital Systems	4
Humanities/Fine Arts Elective	3		
Course	Cr. Hrs.	Course	Cr. Hrs.
SOPHOMORE YEAR			
Semester: Fall	Total Credit Hours: 17	Semester: Spring	Total Credit Hours: 15
ENGL 2130, 2235, or 2330 Literature	3	COMM 2025 or PC 2500 Communication	3
MATH 2120 Differential Equations	3	MATH 2110 Calculus III	4
ECE 2050 Circuits & Electronics I	4	PHYS 2110 Calc-based Physics I	4
CSC 1310 Data Structures & Algorithms	4	ECE 3050 Circuits & Electronics II	4
MATH 2010 Intro to Linear Algebra	3		
Course	Cr. Hrs.	Course	Cr. Hrs.
JUNIOR YEAR			
Semester: Fall	Total Credit Hours: 18	Semester: Spring	Total Credit Hours: 16
MATH 3470 Intro to Probability & Stats	3	ECE 3920 Professional Issues in ECE	1
PHYS 2120 Calc-based Physics II	4	ECE 3510 Electromagnetic Fields	3
ECE 3330 Signals & Systems	4	VE 3500 Sensors, Transducers & Instrumentation	3
ECE 3130 Microcomputer Systems	4	VE 4050 Autonomous Vehicles	3
VE 3400 Intro to Automotive Systems	3	ECE 3210 Control System Analysis	3
		ECE 3610 Intro to Power Systems	3
Course	Cr. Hrs.	Course	Cr. Hrs.
SENIOR YEAR			
Semester: Fall	Total Credit Hours: 15	Semester: Spring	Total Credit Hours: 15
VE 4102 Senior Design Project I - EE	3	VE 4202 Senior Design Project II - EE	3
ECE 4050 Circuits & Electronics III	3	VE 4500 Reliability & Quality Engineering	3
EE Vehicle Concentration Elective ¹	3	Social/Behavioral Science Elective	3
EE Vehicle Concentration Elective ¹	3	Humanities/Fine Arts Elective	3
Social/Behavioral Science Elective	3	Career Elective ²	3

Notes:

A detailed list of electives is available: <https://www.tntech.edu/engineering/programs/ece/electives-25.php>

- EE Vehicle Engineering Concentration Electives: ECE 3140, ECE 3150, ECE 3710, ECE 4010, ECE 4020, ECE 4140, ECE 4210, ECE 4630
- Career Electives can be chosen from any of the following:
 - ECE: Any 3000-level ECE course except 3850; any 4000-level ECE course.
 - Engineering: CHE 2015, CEE 2110, CEE 3110, CEE 3413, CEE 3710, CSC 2310, CSC 2400, CSC 2510, CSC 2570, CSC 2700, CSC 2770, CSC 3020, CSC 3710, CSC 4100, CSC 4200, CSC 4240, CSC 4575, CSC 4750, CSC 4760, CSC 4780, ENGR 3020, ENGR 3710, ENGR 4500, ENGR 4510, ME 2330, ME 3210, ME 3610, ME 4140, VE 3400, VE 3500, VE 4050, VE 4500
 - Mathematics: MATH 2110, MATH 2610, MATH 3070, MATH 3080, MATH 3400, MATH 3810, or any 4000-level MATH course except 4610 and 4620.
 - Science: ASTR 1010, ASTR 1020, BIOL 1113, BIOL 1123, BIOL 2310, BIOL 2350, CHEM 1120, CHEM 2010, PHYS 1100, PHYS 2420, PHYS 2920

- e. Business: ACCT 3720, BMGT 3510, ECON 2010, ECON 2020, FIN 3210, LAW 2810, MKT 3400, MKT 3900
- f. Foreign Language: FREN 1010, FREN 1020, FREN 2010, FREN 2020, GERM 1010, GERM 1020, GERM 2010, GERM 2020, SPAN 1010, SPAN 1020, SPAN 2010, SPAN 2020
- g. Only one of CSC 3020 (ENGR 3020) and MATH 4210 may be taken for elective credit.