



Degree Map

CATALOG YEAR: 2022-23

Degree: BSEE

MAJOR: Electrical Engineering

CONCENTRATION: Mechatronics

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: 17 |
| ENGL 1010 Writing Composition I | 3 | ENGL 1020 Writing Composition II | 3 |
| MATH 1910 Calculus I | 4 | MATH 1920 Calculus II | 4 |
| CHEM 1110 General Chemistry I | 4 | CSC 1300 Intro to Problem Solving & Comp Prog | 4 |
| ECE 1000 Explorations in ECE | 3 | ECE 2140 Intro to Digital Systems | 4 |
| Humanities/Fine Arts Elective | 3 | ENGR 1110 Engineering Graphics | 2 |
| Course | Cr. Hrs. | Course | Cr. Hrs. |
| SOPHOMORE YEAR | | | |
| Semester: Fall | Total Credit Hours: 18 | Semester: Spring | Total Credit Hours: 17 |
| 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 | ECE 3050 Circuits & Electronics II | 4 |
| PHYS 2110 Cal Based Physics I | 4 | CEE 2110 Statics | 3 |
| CSC 1310 Data Structures & Algorithms | 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: 12 |
| MATH 3470 Intro to Probability & Statistics | 3 | ECE 3920 Professional Issues in ECE | 1 |
| ECE 3130 Microcomputer Systems | 4 | ECE 3510 Electromagnetic Fields I | 3 |
| ME 2330 Dynamics | 3 | ME 3610 Dynamics of Machinery | 3 |
| ECE 3330 Signals & Systems | 4 | ECE 3210 Control Systems Analysis | 3 |
| PHYS 2120 Calculus-based Physics II | 4 | ECE 3260 Control Systems Lab | 1 |
| | | ECE 3270 Programmable Logic Controller Lab | 1 |
| Course | Cr. Hrs. | Course | Cr. Hrs. |
| SENIOR YEAR | | | |
| Semester: Fall | Total Credit Hours: 15 | Semester: Spring | Total Credit Hours: 14 |
| ECE 4961 Capstone Design I | 3 | ECE 4971 Capstone Design II | 3 |
| ECE 4050 Circuits & Electronics III | 3 | EE Mechatronics Concentration Elective ¹ | 3 |
| ME 4140 Intro to Robotics & Intelligent Mach Engr | 3 | EE Mechatronics Concentration Elective ¹ | 3 |
| Social/Behavioral Science Elective | 3 | Social/Behavioral Science Elective | 3 |
| Humanities/Fine Arts Elective | 3 | Free Elective | 2 |

Notes:

A detailed list of electives is available: <https://www.tntech.edu/engineering/programs/ece/undergraduate/electives-22.php>

1. EE Mechatronics Concentration Electives: ECE 3610, ECE 3660, ECE 4010, ECE 4140, ECE 4210, ECE 4630, ME 4640, VE 3500