Bachelor of Science in Electrical Engineering Degree (BSEE)
Vehicle Engineering Concentration
Curriculum Effective Fall 2020

Freshman - Fall	
ENGL 1010 English Composition I	3
MATH 1910 Calculus I	4
CHEM 1110 General Chemistry I	4
ECE 1020 Connections to Electrical & Computer Engineering[1]	1
Soc/Beh Sci Elec[2] _____	3
Total	**15**

Freshman - Spring	
ENGL 1020 English Composition II	3
MATH 1920 Calculus II	4
MATH 2010 Introduction to Linear Algebra	3
CSC 1300 Intro. to Problem Solving & Computer Programming	4
Total	**14**

Sophomore - Fall	
ENGL 2130, 2235, or 2330 Literature	3
MATH 2120 Differential Equations	3
PHYS 2110 Calculus-based Physics I	4
ECE 2010 Electric Circuits I	3
ECE 2011 Electrical Engineering Lab. I	1
Soc/Beh Sci Elec[2] _____	3
Total	**17**

Sophomore - Spring	
COMM 2025 or PC 2500 Communication	3
MATH 2110 Calculus III	4
PHYS 2120 Calculus-based Physics II	4
ECE 2001 Computer Aided Engr. in ECE	1
ECE 2020 Electric Circuits II	3
ECE 2110 Intro. to Digital Systems	3
Total	**18**

Junior - Fall	
ECE 3010 Signals & Systems	3
ECE 3060 Electrical Engineering Lab. II	1
ECE 3130 Microcomputer Systems	4
ECE 3300 Electronics I	3
ECE 3510 Electromagnetic Fields I	3
VE 3400 Intro. to Automotive Systems	3
Total	**17**

Junior - Spring	
MATH 3470 Intro. Probability & Statistics	3
ECE 3020 Discrete-Time Signals & Systems	3
ECE 3920 Professional Issues in ECE	1
VE 3500 Sensors, Transducers and Instrumentation	3
EE Breadth Elec[3] _____	3
EE Breadth Elec[3] _____	3
EE Lab. Elec[3] _____	1
Total	**17**

Senior - Fall	
VE 4100 Senior Design Project I	3
EE Breadth Elec[3] _____	3
EE Vehicle Elec[3] _____	3
EE Senior Elec[3] _____	3
EE Lab. Elec[3] _____	1
Hum/Fine Arts Elec[2] _____	3
Total	**16**

Senior - Spring	
VE 4200 Senior Design Project II	3
VE 4500 Reliability and Quality Engineering	3
Career Elec[3] _____	3
Career Elec[3] _____	3
Hum/Fine Arts Elec[2] _____	3
Total	**15**

Notes

(1) This course not included in 128-hour curriculum.

(2) Select from University approved list.

(3) Select from electives list, below.

Course descriptions are in the Undergraduate Catalog.

Electives

The electives list is on another page.

Department of Electrical and Computer Engineering / Tennessee Technological University / Cookeville, Tennessee, U.S.A.

Electrical Engineering

EE Electives (2019 through 2021)

The following are electives for the 2019, 2020, and 2021 EE curricula.

The courses that constitute the approved EE Breadth, EE Depth, EE Senior, EE, EE Laboratory, and Career electives for the Bachelor of Science in Electrical Engineering degree are listed below. Students are encouraged to consult with their advisor when selecting elective courses.

EE Breadth Electives

- ECE 3210 - Control System Analysis
- ECE 3310 - Electronics II
- ECE 3540 - Physical Electronics
- ECE 3610 - Introduction to Power Systems
- ECE 3710 - Introduction to Telecommunications

EE Senior Electives

- All ECE 4000-level courses

EE Electives

- All courses on the EE Breadth Electives list, above
- All courses on the EE Senior Electives list, above

EE Laboratory Electives

- ECE 3160 - Digital Systems Laboratory
- ECE 3260 - Control System Laboratory
- ECE 3270 - Programmable Logic Controller Laboratory
- ECE 3360 - Electronics Laboratory
- ECE 3560 - EM Simulation Laboratory
- ECE 3660 - Electric Power Laboratory
- ECE 3760 - Telecommunications Laboratory

EE Depth Electives

- ECE 4020 - Digital Signal Processing

- ECE 4110 - Digital System Design
- ECE 4120 - Fundamentals of Computer Design
- ECE 4130 - Introduction to Digital VLSI
- ECE 4140 - Embedded System Design
- ECE 4210 - Control System Design
- ECE 4240 - Computer-Based Control Systems (note: course no longer available)
- ECE 4370 - Mechatronics and Intelligent Machines Engineering
- ECE 4510 - Electromagnetic Fields II
- ECE 4520 - Optoelectronic Engineering
- ECE 4610 - Power System Analysis
- ECE 4620 - Power System Operation and Control
- ECE 4630 - Power Electronics
- ECE 4710 - Principles of Telecommunications
- ECE 4720 - Telecommunication Systems Design

EE Vehicle Electives

- Applies only to Vehicle Engineering Concentration
- ECE 4020 - Digital Signal Processing
- ECE 4110 - Digital System Design
- ECE 4140 - Embedded System Design
- ECE 4210 - Control System Design
- ECE 4510 - Electromagnetic Fields II
- ECE 4520 - Optoelectronic Engineering
- ECE 4630 - Power Electronics
- ECE 4720 - Telecommunication Systems Design

Career Electives

- **Engineering**
  - Chemical Engineering
    - All CHE 2000-, 3000- and 4000-level courses (*** see notes)
  - Civil and Environmental Engineering
    - CEE 2110, and all CEE 3000- and 4000-level courses except 3100
  - Computer Science
    - CSC 1310, and all CSC 2000-, 3000-, and 4000-level courses except 3310, 3410, and 4320
  - Electrical and Computer Engineering
    - All ECE 3000- and 4000-level courses except 3810 and 3860
  - Engineering
    - ENGR 4510
  - Mechanical Engineering

        - ME 2330 and all ME 3000- and 4000-level courses except 3110, 4370, and 4810 (*** see notes)
- **Mathematics**
    - All MATH 3000- and 4000-level courses except 3670 and 4610 (*** see notes)
- **Science**
    - Astronomy - ASTR 1010 and ASTR 1020
    - Biology - BIOL 1113, BIOL 1123, BIOL 2010, BIOL 2020, and BIOL 2310
    - Chemistry - CHEM 1120, CHEM 2010, CHEM 3010, CHEM 3410, CHEM 3500, and CHEM 3510
    - Physics - PHYS 1100, PHYS 2420, and PHYS 2920
- **Business**
    - Accounting - ACCT 2110 and ACCT 2120
    - Business Management - BMGT 3510, BMGT 3600, and BMGT 3630
    - Decision Sciences - DS 3520
    - Economics - ECON 2010, ECON 2020, ECON 3810, ECON 3820, and ECON 3830
    - Finance - FIN 3210, FIN 3610, FIN 4230, and FIN 4800
    - Business Law - LAW 3810 and LAW 4720
    - Marketing - MKT 3400, MKT 3900, MKT 4100, and MKT 4550
- **Foreign Language**
    - French - FREN 1010, FREN 1020, FREN 2010, and FREN 2020
    - German - GERM 1010, GERM 1020, GERM 2010, and GERM 2020
    - Spanish - SPAN 1010, SPAN 1020, SPAN 2010, and SPAN 2020
    - Other FREN, GERM, and SPAN courses will be considered provided that foreign language is used in the course
    - Language courses other than FREN, GERM, and SPAN will be considered provided that foreign language is used in the course

Notes

Only one of CHE 3010 and ME 3210 may be taken for elective credit.
If either ME 3710 or ME 3720 is taken for elective credit CHE 3110 may not be taken for elective credit.
Only one of CSC 3020 and MATH 4210 may be taken for elective credit.

ECE courses along with the tentative schedule and course syllabi are on another page.

Course descriptions are in the Undergraduate Catalog.