# Program of Study: Electrical Engineering 2023-2024
## Math 1140 Placement

| General Education | |
|---|---|
| For detailed GE curriculum requirements and course lists click here | |
| *Philosophy 1332 is required of all ECE students. This course will fit into the "Historical and Cultural Studies" category | |
| The most efficient path to complete the GE theme requirement is to take two 4-hour courses | |

| Correlate Courses | | Hours |
|---|---|---|
| Engr 1100.15 | Introduction to Ohio State and Electrical and Computer Engineering | 1 |
| Engr 1181 | Fundamentals of Engineering I | 2 |
| Engr 1182 | Fundamentals of Engineering II | 2 |
| Math 1140 | Calculus with Review I | 4 |
| Math 1141 | Calculus with Review II | 4 |
| Math 1172 | Engineering Mathematics A | 5 |
| Physics 1250 | Mechanics, Thermal Physics, Waves | 5 |
| Physics 1251 | Electricity and Magnetism, Optics, Modern Physics | 5 |
| Chem 1250 | General Chemistry for Engineers (will accept Chem 1210) | 4 |
| CSE 1222 | Introduction to Computer Programming in C++ for Engineers and Scientists | 3 |
| Math 2568 | Linear Algebra | 3 |
| Math 2415 | Ordinary and Partial Differential Equations | 3 |
| Stat 3470 | Introduction to Probability and Statistics for Engineers | 3 |
| ISE 2040 | Engineering Economics | 2 |
| **Total** | | **46 hrs** |

| Major Core Courses | | |
|---|---|---|
| ECE 2060 | Introduction to Digital Logic | 3 |
| ECE 2020 | Introduction to Analog Systems and Circuits | 3 |
| ECE 2050 | Introduction to Discrete Time Signals & Systems | 3 |
| ECE 2560 | Introduction to Microcontroller-Based Systems | 2 |
| ECE 3010 | Introduction to Radio Frequency and Optical Engineering | 3 |
| ECE 3020 | Introduction to Electronics | 3 |
| ECE 3027 | Electronics laboratory | 1 |
| ECE 3030 | Semiconductor Electronic Devices | 3 |
| ECE 3040 | Sustainable Energy and Power Systems I | 3 |
| ECE 3050 | Signals and Systems | 3 |
| ECE 3906 | Capstone Design I | 4 |
| ECE 4905 | Capstone Design II | 3 |
| **Total** | | **34 hrs** |

## Engineering Electives (27 hours)

*Major Technical Electives (choose at least 16 hours)*

- *Must select 6 hours from one domain:*
- *Must select 3 hours from at least 2 different domains*
- *Must select at least one 5000-level ECE course*
- *Must select at least one lab course (courses below ending in a 7)*
- *5050 and 5550 can count in the Control or the Humans and Justice domain*
- *5078 (3) counts towards 16 hours of technical electives, but is not in a domain*
- *No more than 3 hours of S/U graded courses may count towards Electives*

**Communication and Signal Processing Domain**: ECE 5000 (3), 5101 (3), 5200 (3), 5206 (3), 5400 (3), **Labs**: 5007(.5), 5207 (.5), 5307 (4)

**Computer Domain**: ECE 3561 (3), 5362 (3), 5460 (3), 5462 (3), 5463 (3), 5465 (3), 5466 (3), 5560 (3) 5561 (3), 5567.01 (3), 5567.02 (3), **Labs**: 3567 (1), 4567 (4)

**Control Systems Domain**: ECE 3551 (3), 5050 (3), 5500 (3), 5550 (3), 5551 (3), 5553 (3), 5554 (3), 5555 (3), 5759 (3)

**Electronic Circuits Domain**: ECE 4021 (3), 5020 (3), 5021 (3), 5022 (3), 5023 (3), 5120 (3) Labs: 5027 (4), 5227 (4)

**Electromagnetics, Microwaves and Electro-optics Domain**: ECE 5010 (3), 5011 (3), 5012 (3), 5013 (3), 5510 (3) **Lab**: 5017 (4)

**Sustainable Energy and Power Systems Domain**: 5025 (3), 5041 (3), 5042 (3), 5043 (3), 5244 (3) **Labs** 3047 (1) 5127 (1), 5047 (3)

**Solid State Electronics and Photonics Domain**: ECE 5031 (3), 5033 (3), 5131 (3), 5132 (3), 5530 (3), 5832 (3), 5833 (3) **Labs**: 5037 (4), 5237 (4)

**Human & Justice Domain**: ECE 5570 (4), 5050 (3), 5550 (3)

*Directed Electives (choose at most 11 hours)*

| | |
|---|---|
| At most 11 hours of non-ECE courses approved by the ECE department see link here: https://ece.osu.edu/students/program-highlights/worksheets-curricula-information | |
| At most 7 hours of physical or biological science courses below the 2000-level | |

Other details:

- Minimum 131 hours required for degree
- At least 30 hours of ECE courses must be completed at Ohio State
- Must complete 30 hours of Basic Math and Science Courses
- Need both Major and Cumulative GPA to be a 2.0 or higher to graduate
- Philosophy 1332 is required of all ECE students and fulfills Historical and Cultural Studies Foundation GE
- The most efficient path to complete the GE Theme requirement is to take two 4-hour courses

### Electrical Engineering Sample Schedule (131 hrs)

| | Autumn | | Spring | |
|---|---|---|---|---|
| **Year 1** | Engr 1100 *Survey* | 1 | Engr 1182 *Fund Of Eng II* | 2 |
| | Engr 1181 *Fund Of Eng I* | 2 | Math 1141 | 4 |
| | Math 1140 | 4 | Physics 1250 *Physics I* | 5 |
| | GE Foundation | 3 | CSE 1222 *Programming C/C++* | 3 |
| | GE Foundation | 3 | GE Foundation (Philos 1332) | 3 |
| | GE Launch | 1 | | |
| | | 14 | | 17 |
| **Year 2** | Physics 1251 *Physics II* | 5 | Math 2568 *Linear Algebra* | 3 |
| | Math 1172 *Eng Calculus II* | 5 | ECE 2020 *Analog Sys. & Circ* | 3 |
| | GE Theme | 4 | ECE 2050 *Discrt Time Sig & Sys* | 3 |
| | ECE 2060 *Digital Logic* | 3 | Chem 1250 *Chemistry for Eng* | 4 |
| | | | GE Theme | 4 |
| | | 17 | | 17 |
| **Year 3** | GE Foundation | 3 | Stat 3470 *Prob & Stat* | 3 |
| | Math 2415 *Diff Eqns* | 3 | ECE 3030 *Semicndct ElectDev* | 3 |
| | ECE 2560 *Microcontrollers* | 2 | ECE 3050 *Signals & Systems* | 3 |
| | ECE 3020 *Intro Electronics* | 3 | ECE 3027 *Electronics Lab* | 1 |
| | ECE 3040 *Energy & Power* | 3 | Engineering Elective | 3 |
| | GE Foundation | 3 | Engineering Elective | 3 |
| | | 17 | | 16 |
| **Year 4** | ECE 3010 *RF & Optical Eng* | 3 | ECE 4905 *Capstone Design II* | 3 |
| | ECE 3906 *Capstone Design I* | 4 | Engineering Elective | 3 |
| | Engineering Elective | 3 | Engineering Elective | 3 |
| | Engineering Elective | 3 | Engineering Elective | 3 |
| | Engineering Elective | 3 | Engineering Elective | 3 |
| | ISE 2040 *Eng Economics* | 2 | | |
| | | 18 | | 15 |