

## Program of Study: Electrical Engineering 2022-2023

### Math 1150 placement

| <b>General Education</b>   |  |               |
|--|--|---------------|
| For detailed GE curriculum requirements and course lists <a href="#">click here</a> .  |  |               |
| *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 1150  | Pre-calculus   | 5             |
| Math 1151  | Calculus I   | 5             |
| 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             |
| <b>Total</b>   |  | <b>48 hrs</b> |
| 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             |
| <b>Total</b>   |  | <b>34 hrs</b> |
| Engineering Electives (27 hours)   |  |               |
| Major Technical Electives (choose at least 16 hours)   |  |               |
| <ul style="list-style-type: none"> <li>• Must select 6 hours from one domain</li> <li>• Must select 3 hours from at least 2 different domains</li> <li>• Must select at least one 5000-level ECE course</li> <li>• Must select at least one lab course (courses blow ending in a 7)</li> </ul> |  |               |
| Communication and Signal Processing Domain: ECE 5000, 5101, 5200, 5206, 5400, Labs: 5007, 5207, 5307   |  |               |
| Computer and Digital Systems Domain: ECE 3561, 5362, 5460, 5462, 5463, 5465, 5466, 5561, 5567.01, 5567.02, Labs: 3567, 4567  |  |               |
| Control Systems Domain: ECE 3551, 5050, 5550, 5551, 5553, 5554, 5555, 5759   |  |               |
| RF and Analog Electronic Circuits Domain: ECE 4021, 5020, 5021, 5022, 5023, 5120 Labs: 5027, 5227  |  |               |
| Electromagnetics, Microwaves and Electro-optics Domain: ECE 5010, 5011, 5012, 5013, 5017, 5510   |  |               |
| Sustainable Energy and Power Systems Domain: ECE 3047, 5025, 5041, 5042, 5043, 5047, 5127, 5244  |  |               |
| Solid State Electronics and Photonics Domain: ECE 5031, 5033, 5037, 5131, 5132, 5237, 5530, 5832, 5833   |  |               |
| Human & Justice: ECE 5570, 5050, 5550  |  |               |
| Non-Major Electives (choose at most 11 hours)  |  |               |
| At most 12 hours of non-ECE courses approved by the ECE department see link here: <a href="https://ece.osu.edu/students/program-highlights/worksheets-curricula-information">https://ece.osu.edu/students/program-highlights/worksheets-curricula-information</a>                              |  |               |
| At most 7 hours of physical or biological science courses below the 2000-level   |  |               |



Other details:

- Minimum 133 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 (133 hrs)**

|        | Autumn                      |    | Spring               |    |
|--------|-----------------------------|----|----------------------|----|
| Year 1 | Engr 1100                   | 1  | Engr 1182            | 2  |
|        | Engr 1181                   | 2  | Math 1151            | 5  |
|        | Math 1150                   | 5  | Physics 1250         | 5  |
|        | Chem 1250                   | 4  | CSE 1222             | 3  |
|        | GE Foundation               | 3  | GE Launch Seminar    | 1  |
|        |                             | 15 |                      | 16 |
| Year 2 | Physics 1251                | 5  | Math 2568            | 3  |
|        | Math 1172                   | 5  | ECE 2060             | 3  |
|        | GE Theme                    | 4  | ECE 2020             | 3  |
|        | GE Foundation (Philos 1332) | 3  | GE Foundation        | 3  |
|        |                             |    | GE Theme             | 4  |
|        |                             | 17 |                      | 16 |
| Year 3 | ECE 2050                    | 3  | Stat 3470            | 3  |
|        | Math 2415                   | 3  | ECE 3030             | 3  |
|        | ECE 2560                    | 2  | ECE 3050             | 3  |
|        | ECE 3020                    | 3  | ECE 3027             | 1  |
|        | ECE 3040                    | 3  | Engineering Elective | 3  |
|        | GE Foundation               | 3  | Engineering Elective | 3  |
|        |                             | 17 |                      | 16 |
| Year 4 | ECE 3010                    | 3  | ECE 4905             | 3  |
|        | ECE 3906                    | 4  | Engineering Elective | 3  |
|        | Engineering Elective        | 3  | Engineering Elective | 3  |
|        | Engineering Elective        | 3  | Engineering Elective | 3  |
|        | Engineering Elective        | 3  | Engineering Elective | 3  |
|        | ISE 2040                    | 2  | GE foundation        | 3  |
|        |                             | 18 |                      | 18 |