

# Electrical Engineering Program

(Requirements based on Calendar of 2025-26)

The Electrical Engineering Program consists of total of 120 credits including the Engineering Core (30.50 Credits) the Electrical Engineering Core (72.50 Credits), and Elective Courses chosen from Electrical Engineering Electives (minimum of 17.00 credits). Moreover, students should be member of C-Edge Program or Coop program and should complete one or three workterms, respectively.

| 30.50 | Course                    | Engineering Core                                      | Prerequisite and Co-requisite   | Comments |
|-------|---------------------------|---|---|----------|
| 3.50  | ELEC 273                  | Basic Circuit Analysis                                | PHYS 205; ENGR 213;   |          |
| 3.00  | ENCS 282                  | Technical Writing and Communication                   | Engineering Writing Test (EWT) or ENCS 272 (Grade of C- or better)  |          |
| 1.50  | ENGR 201                  | Professional Practice and Responsibility              |   |          |
| 1.50  | ENGR 202                  | Sustainable Development and Environmental Stewardship |   |          |
| 3.00  | ENGR 213                  | Applied Ordinary Differential Equations               | MATH 205; Co-req MATH 204;  |          |
| 3.00  | ENGR 233                  | Applied Advanced Calculus                             | MATH 204, 205   |          |
| 3.00  | ENGR 301                  | Engineering Management Principles and Economics       |   |          |
| 3.00  | ENGR 371                  | Probability and Statistics in Engineering             | ENGR 213, 233   |          |
| 3.00  | ENGR 391                  | Numerical Methods in Engineering                      | ENGR 213, 233; COEN 243   |          |
| 3.00  | ENGR 392                  | Impact of Technology on Society                       | ENCS 282; ENGR 201, 202   |          |
| 3.00  | GEN ED                    | General Education Elective                            | from section 71.110 of the Undergraduate Calendar   |          |
| 72.50 | Course                    | Electrical Engineering Core                           | Prerequisite and Co-requisite   | Comments |
| 3.50  | COEN 212                  | Digital Systems Design I                              | MATH 204  |          |
| 3.00  | COEN 231                  | Introduction to Discrete Mathematics                  | MATH 204  |          |
| 3.50  | COEN 243                  | Programming Methodology I                             | MATH 204  |          |
| 3.00  | COEN 244                  | Programming Methodology II                            | COEN 243  |          |
| 3.50  | COEN 311                  | Computer Organization and Software                    | COEN 212, 243   |          |
| 3.50  | COEN 313                  | Digital Systems Design II                             | COEN 212, 231   |          |
| 3.00  | COEN 352                  | Data Structures and Algorithms                        | COEN 231, 244   |          |
| 3.00  | ELEC 242                  | Continuous-Time Signals and Systems                   | ELEC 273, ENGR 213  |          |
| 3.00  | ELEC 251                  | Fundamentals of Applied Electromagnetics              | ELEC 273, ENGR 233;   |          |
| 3.50  | ELEC 311                  | Electronics I   | ELEC 273  |          |
| 3.50  | ELEC 312                  | Electronics II  | ELEC 311; ELEC 242  |          |
| 3.50  | ELEC 321                  | Introduction to Semiconductor Materials and Devices   | CHEM 205; ENGR 213  |          |
| 3.50  | ELEC 331                  | Fundamentals of Electrical Power Engineering          | ELEC 251, 273   |          |
| 3.50  | ELEC 342                  | Discrete-Time Signals and Systems                     | ELEC 242  |          |
| 3.50  | ELEC 351                  | Electromagnetic Waves and Guiding Structures          | ELEC 251, 242, ENGR 233   |          |
| 3.50  | ELEC 366                  | Telecommunication Networks                            | COEN 352, ELEC 342; ENGR 371  |          |
| 3.50  | ELEC 367                  | Introduction to Digital Communications                | ELEC 342; ENGR 371  |          |
| 3.50  | ELEC 372                  | Fundamentals of Control Systems                       | ELEC 242  |          |
| 3.00  | ENGR 290                  | Introductory Engineering Team Design Project          | ENCS 282; ENGR 213, 233; COEN 243   |          |
| 3.00  | ELEC 390                  | Electrical Engineering Product Design Project         | Minimum of 45 credits in BEng (Electrical); COEN 352; ELEC 311; ENGR 290  |          |
| 6.00  | ELEC 490<br>or<br>ENGR490 | Capstone Electrical Engineering Design Project        | ENGR 301, 371; COEN 311; ELEC 342; ELEC 390; Minimum of 75 credits in BEng in Electrical Engineering; C.Edge work term or one co-op work term. If pre-requisites are not satisfied, permission of the Department is required. |          |
| 0.00  | Workterm                  | C-Edge work term for one term                         | 60 credits or less left for graduation  |          |
| 17.00 | Course                    | Electrical Engineering Electives                      | Consult section 71.30.1 of the Undergraduate Calendar   | Comments |
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