

Catalog Year 2017-2018

BS Electrical Engineering

A Major Academic Plan (MAP) illustrates one way to complete a degree in a recommended number of semesters. Below is an example of an efficient and recommended plan, but actual plans will vary by individual student needs. Program requirements are based on Catalog Year. See page two for a detailed summary of Major, General Education, Elective, and university requirements.

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| **Course Subject and Title** | **Cr.** | **Min.**  **Grade** | **\*GE,**  **UU or UM** | **\*\*Sem. Offered** | **Prerequisite** | | **Co Requisite** | | | | | | |
| Semester One | | | | | | | | | | | | | |
| GE Objective 1: ENGL 1101 English Composition | 3 | C- | GE | F,S,Su | | Appropriate placement score |  | | | | | | |
| GE Objective 3: MATH 1170 Calculus I | 4 | C- | GE | F,S,Su | | MATH 1147 or 1144 or appropriate placement score | | | | |  | | |
| GE Objective 5: CHEM 1111 and 1111L General Chemistry I & lab | 5 |  | GE | F,S,Su | | MATH 1143, 1147 ,or 1144 or appropriate placement score | | | | | | |  |
| GE Objective 4 | 3 |  |  | F,S,Su | |  |  | | | | | | |
| EE 1101 Electrical Engineering and Society | 1 |  |  | F | |  |  | | | | | | |
| Total | 16 |  |  |  | |  |  | | | | | | |
| Semester Two | | | | | | | | | | | | | |
| GE Objective 1: ENGL 1102 Critical Reading and Writing | 3 | C- | GE | F,S,Su | ENGL 1101 or equivalent | |  | | | | | | |
| MATH 1175 Calculus II | 4 | C- |  | F,S,Su | MATH 1170 | |  | | | | | | |
| GE Objective 5: PHYS 2211 Engineering Physics | 4 |  | GE | F,S | MATH 1175 | | MATH 1175 | | | | | | |
| GE Objective 4 | 3 |  | GE | F,S,Su |  | |  | | | | | | |
| Total | 14 |  |  |  |  | |  | | | | | | |
| Semester Three | | | | | | | | | | | | | |
| GE Objective 2: Principles of Speech | 3 |  | GE | F,S,Su |  | |  | | | | | | |
| PHYS 2212 Engineering Physics II | 4 |  | GE | F,S,Su | PHYS 2211 | |  | | | | | | |
| MATH 2240 Linear Algebra | 3 |  |  | F,S,Su | MATH 1170 | |  | | | | | | |
| EE 2274 Introduction to Digital Systems | 3 |  |  | F | EE 1101, EE 2274 L | | EE 2274 L | | | | | | |
| EE 2274L Introductions to Digital Systems Lab | 1 |  |  | F | EE 2274 | | EE 2274 | | | | | | |
| EE 2240 Introduction to Electrical Circuits | 3 |  |  | F | MATH 1170 | |  | | | | | | |
| Total | 17 |  |  |  |  | |  | | | | | | |
| Semester Four |  |  |  |  |  | |  | | | | | | |
| MATH 2275 Calculus III | 4 |  |  | F,S | MATH 1175 | |  | | | | | | |
| ENGL 3307 Professional & Technical Writing | 3 |  | UM | F,S | ENGL 1102, 45 credits | |  | | | | | | |
| EE 3340 Fundamentals of Electrical Devices | 3 |  | UM | S | EE 2240, EE 3340 L, MATH 1175 | | EE 3340 L, MATH 1175 | | | | | | |
| EE 3340 Fundamentals of Electrical Devices Lab | 1 |  | UM | S | EE 2240 | | EE 2240 | | | | | | |
| CE 3361 Engineering Economics & Management | 3 |  | UM | F,S | ME/CE 2210 or permission of instructor | | |  | | | | | |
| Total | 14 |  |  |  |  | |  | | | | | | |
| Semester Five |  |  |  |  |  | |  | | | | | | |
| MATH 3360 Differential Equations | 3 |  | UM | F,S | MATH 1175, MATH 2275 recommended | | | |  | | | | |
| EE 4472 Electrical Machines & Power | 3 |  | UM | F | EE 3340, EE 3340L, EE 4472L | | EE 4472L | | | | | | |
| EE 4472 L Electrical Machines & Power Lab | 1 |  | UM | F | EE 4472 | | EE 4472 | | | | | | |
| EE 3345 Signals & Systems | 3 |  | UM | F | EE 3340, MATH 3360 | | MATH 3360 | | | | | | |
| EE 3325 Electromagnetics | 3 |  | UM | F | EE 3340, MATH 2275, PHYS 2212; MATH 3360 recommended | | | | |  | | | |
| EE 4426 Computer Architecture & Organization | 3 |  | UM | F | EE 2274, EE 2274L (replaces EE 2275) | | | | | | |  | |
| Total | 16 |  |  |  |  | |  | | | | | | |
| Semester Six |  |  |  |  |  | |  | | | | | | |
| EE 4427 Embedded Systems Engineering | 2 |  | UM | S | EE 4426 or CS 2275; EE 4427 L | | EE 4427L | | | | | | |
| EE 4427 L Embedded Systems Engineering Lab | 1 |  | UM | S | EE 4426 or CS 2275,EE 4427 | | EE 4427 | | | | | | |
| EE 3329 Introduction to Electronics | 3 |  | UM | S | EE 3340, CHEM 1111 | | EE 3340 | | | | | | |
| EE 4473 Automatic Control Systems | 3 |  | UM | S | EE 3345 or ME 4405 | |  | | | | | | |
| EE 4416 Applied Engineering Methods | 3 |  | UM | S | MATH 1175 | |  | | | | | | |
| GE Objective 6 | 3 |  | GE | F,S,Su |  | |  | | | | | | |
| Total | 15 |  |  |  |  | |  | | | | | | |
| Semester Seven |  |  |  |  |  | |  | | | | | | |
| EE 4429 Advanced Electronics | 3 |  | UM | F | EE 3329, EE 4429 | | EE4429 L | | | | | | |
| EE 4429L Advanced Electronics Lab | 1 |  | UM | F | EE 4429 | | EE 4429 | | | | | | |
| EE 4400 Senior Seminar | 1 |  | UM | F | Permission of instructor | |  | | | | | | |
| Upper Division Technical Elective from list | 3 |  | UM | F,S | See catalog | |  | | | | | | |
| GE Objective 6 | 3 |  | GE | F,S,Su |  | |  | | | | | | |
| GE Objective 7 or 8 | 3 |  | GE | F,S,Su |  | |  | | | | | | |
| Total | 14 |  |  |  |  | |  | | | | | | |
| Semester Eight |  |  |  |  |  | |  | | | | | | |
| Upper Division Technical Elective (see catalog & advisor) | 3 |  | UM | F,S | See catalog & Degree Works | |  | | | | | | |
| EE 4418 Communication Systems | 3 |  | UM | S | EE 3329, EE 3345 | |  | | | | | | |
| EE 4496 Project Design | 3 |  | UM | S | EE 4400 | |  | | | | | | |
| EE 4475 Digital Signal Processing | 3 |  | UM | S | EE 3345 | |  | | | | | | |
| EE Elective (see catalog & advisor) | 3 |  | UM | F,S | See catalog & Degree Works | |  | | | | | | |
| GE Objective 9 | 3 |  | GE | F,S,Su |  | |  | | | | | | |
| Total | 15 |  |  |  |  | |  | | | | | | |
| \*GE=General Education Objective, UU=Upper Division University, UM= Upper Division Major  \*\*See Course Schedule section of Course Policies page in the e-catalog (or input F, S, Su, etc.) | | | | | | | | | | | | | |

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| **2017-2018 Major Requirements** | **CR** | **2017-2018 GENERAL EDUCATION OBJECTIVES**  **Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9** | | | | | | **36 cr. min** |
| **MAJOR REQUIREMENTS** | **81** | 1. Written English (6 cr. min) ENGL 1101 | | | | | | 3 |
| CHEM 1111 & 1111L Gen Chemistry I & lab 5 cr counted in Objective 5) | | ENGL 1102 | | | | | | 3 |
| CE 3361 Engineering Economics and Management | 3 | 2. Spoken English (3 cr. min) COMM 1101 | | | | | | 3 |
| ENGL 3307 Professional and Technical Writing | 3 | 3. Mathematics (3 cr. min) MATH 1170 | | | | | | 4 |
| MATH 1170 Calculus I (4 cr counted in Objective 3) | | 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** | | | | | | |
| MATH 1175 Calculus II | 4 |  | | | | | |  |
| MATH 2275 Calculus III | 4 |  | | | | | |  |
| MATH 2240 Linear Algebra | 3 | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** | | | | | | |
| MATH 3360 Differential Equations | 3 | CHEM 1111 & CHEM 1111L | | | | | | 5 |
| PHYS 2211 Engineering Physics I (4 cr counted in Objective 5) | | PHYS 2211 | | | | | | 4 |
| PHYS 2212 Engineering Physics II | 4 |  | | | | | |  |
| EE 1101 Electrical Engineering and Societ | 1 | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** | | | | | | |
| EE 2240 Introduction to Electrical Circuits | 3 |  | | | | | |  |
| EE 2274 Introduction to Digital Systems | 3 |  | | | | | |  |
| EE 2274L Introduction to Digital Systems Lab | 1 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** | | | | | | |
| EE 3325 Electromagnetics | 3 | 7. Critical Thinking CS 1181 recommended | | | | | |  |
| EE 3329 Introduction to Electronics | 3 | 8. Information Literacy | | | | | |
| EE 3340 Fundamentals of Electronic Devices | 3 | 9. Cultural Diversity **(1 course; 3 cr. min)** | | | | | | |
| EE 3340L Fundamentals of Electronic Devices Lab | 1 |  | | | | | |  |
| EE 3345 Signals and Systems | 3 | General Education Elective to reach 36 cr. min. **(if necessary)** | | | | | | |
| EE 4400 Senior Seminar | 1 |  | | | | | |  |
| EE 4416 Applied Engineering Methods | 3 | Total GE | | | | | | 40 |
| EE 4418 Communication Systems | 3 | GE Objectives Courses:  [2017-2018 General Education Requirements (PDF)](https://www.isu.edu/media/libraries/central-academic-advising/pdf-files/gened-requirements/2017-2018-General-Education-Requirements.pdf) | | | | | | |
| EE 4426 Computer Architecture and Organization | 3 |
| EE 4427 Embedded Systems Engineering | 2 |  | | | | |  | |
| EE 4427L Embedded Systems Engineering Lab | 1 | **MAP Credit Summary** | | | | | **CR** | |
| EE 4429 Advanced Electronics | 3 | Major | | | | | 81 | |
| EE 4429 Advanced Electronics Lab | 1 | General Education | | | | | 40 | |
| EE 4472 Electrical Machines and Power | 3 | Free Electives to reach 120 credits | | | | | 0 | |
| EE 4472L Electrical Machines and Power Lab | 1 | TOTAL | | | | | 121 | |
| EE 4473 Automatic Control Systems | 3 |  | | | | | | |
| EE 4475 Digital Signal Processing | 3 |
| EE 4496 Project Design | 3 | **Graduation Requirement Minimum Credit Checklist** | | | **Confirmed** | | | |
| Upper Division Technical Electives – consult advisor; list in catalog/DW | 3 | Minimum 36 cr. General Education Objectives (15 cr. AAS) | | | yes | | | |
| Electrical Engineering Electives – consult advisor; list in catalog/DW | 3 | Minimum 16 cr. Upper Division in Major (0 cr. Associate) | | |  | yes | | |
|  |  | Minimum 36 cr. Upper Division Overall (0 cr. Associate) | | |  | yes | | |
|  |  | Minimum of 120 cr. Total (60 cr. Associate) | | |  | yes | | |
|  |  |  | |  | | | | |
| **Advising Notes** | | ***MAP Completion Status (for internal use only)*** | | | | | | |
| Consult faculty advisor for selection of technical upper division and EE electives. | |  | *Date* | | | | | |
|  | | *Department:* | 06/12/2017 Steve Chiu | | | | | |
|  | | *CAA or COT:* | 06/12/2017 SF | | | | | |
|  | | *Registrar:* |  | | | | | |
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Form Revised: 4.14.2017