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| **Catalog Year 2019-2020**  BS, Electrical Engineering | ***(For internal use only)***  *No change*  *UCC proposal* |

A Major Academic Plan (MAP) is one way to complete a degree in a set number of semesters. The *example* below is an efficient strategy only. Actual plans for individual students will vary based on advisor recommendations and academic needs. Official Program Requirements including Major, General Education, Elective, and university requirements (see pg.2) are based on Catalog Year.

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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 Writing and Rhetoric I | 3 |  | 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 4 | 3 |  | GE | F,S, Su |  |  | | | | | | |
| GE Objective 4 | 3 |  | GE | F,S, Su |  |  | | | | | | |
| EE 1101 Electrical Engineering and Society | 1 |  |  | F |  |  | | | | | | |
| Total | 14 |  |  |  |  |  | | | | | | |
| Semester Two | | | | | | | | | | | | |
| GE Objective 1: ENGL 1102 Writing and Rhetoric II | 3 | C- | GE | F, S, Su | ENGL 1101 or equivalent |  | | | | | | |
| MATH 1175 Calculus II | 4 | C- |  | F,S, Su | MATH 1170 |  | | | | | | |
| GE Objective 5: CHEM 1111 & 1111L Gen.Chemistry I & Lab | 5 |  | GE | F,S, Su | MATH 1143 or 1147 or equivalent | |  | | | | | |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F,S, Su |  |  | | | | | | |
|  |  |  |  |  |  |  | | | | | | |
| Total | 15 |  |  |  |  |  | | | | | | |
| Semester Three | | | | | | | | | | | | |
| MATH 2275 Calculus III | 4 |  |  | F,S | MATH 1175 |  | | | | | | |
| GE Objective 5: PHYS 2211 Engineering Physics I | 4 |  | GE | F,S, Su | MATH 1175 | MATH 1175 | | | | | | |
| 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 | | | | | | |
| GE Objective 7/8: CS/INFO 1181 | 3 |  | GE | F,S, Su | MATH 1143 or 1147 |  | | | | | | |
| Total | 15 |  |  |  |  |  | | | | | | |
| Semester Four |  |  |  |  |  |  | | | | | | |
| PHYS 2212 Engineering Physics II | 4 |  |  | F,S , Su | PHYS 2211 |  | | | | | | |
| MATH 2240 Linear Algebra | 3 |  |  | F,S,S u | MATH 1170 |  | | | | | | |
| ENGL 3307 Professional & Technical Writing | 3 |  | UM | F, S | ENGL 1102 , 45 credits completed | | |  | | | | |
| GE Objective 6 | 3 |  | GE | F,S, Su |  |  | | | | | | |
| GE Objective 6 | 3 |  | GE | F,S, Su |  |  | | | | | | |
| Total | 16 |  |  |  |  |  | | | | | | |
| Semester Five |  |  |  |  |  |  | | | | | | |
| MATH 3360 Differential Equations | 3 |  | UM | F,S | MATH 1175; MATH 2240 or MATH 2275 recommended | | | | | |  | |
| EE 3301 Software Methodology and Tools for EE | 3 |  | UM | F | CS/INFO 1181 |  | | | | | | |
| 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 2240 Introduction to Electrical Circuits | 3 |  |  | F | MATH 1170, MATH 2240 |  | | | | | | |
| EE 2240L Introduction to Electrical Circuits Lab | 1 |  |  |  |  | EE 2240 | | | | | | |
| Total | 16 |  |  |  |  |  | | | | | | |
| Semester Six |  |  |  |  |  |  | | | | | | |
| GE Objective 9 | 3 |  | GE | F,S, Su |  |  | | | | | | |
| EE 3340 Fundamentals of Electrical Devices | 3 |  | UM | S | EE 2240, EE 3340 L, MATH 1175 | EE 3340 L, MATH 1175 | | | | | | |
| EE 3340L Fundamentals of Electrical Devices Lab | 1 |  | UM | S | EE 2240 | EE 2240 | | | | | | |
| EE 3329 Introduction to Electronics | 3 |  | UM | S | EE 3340, CHEM 1111 | EE 3340 | | | | | | |
| EE Elective from list | 3 |  | UM | F,S | See catalog |  | | | | | | |
| EE 4416 Applied Engineering Methods | 3 |  | UM | S | MATH 1175 |  | | | | | | |
| Total | 16 |  |  |  |  |  | | | | | | |
| Semester Seven |  |  |  |  |  |  | | | | | | |
| EE 4426 Computer Architecture & Organization | 3 |  | UM | F | EE 2274, EE 2274L (replaces EE 2275) | | |  | | | | |
| 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 4495 Senior Seminar | 3 |  | UM | F | Permission of instructor and completion of all EE 2000 and 3000 level courses | | | |  | | | |
| 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 | | | | | | |
| Total | 14 |  |  |  |  |  | | | | | | |
| Semester Eight |  |  |  |  |  |  | | | | | | |
| 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 4427 Embedded Systems | 2 |  | UM | S | EE 4426 or CS 2275, EE 24427 L | EE 4427 L | | | | | | |
| EE 4427L Embedded Systems Engineering Lab | 1 |  | UM | S | EE 4426 or CS 2275,EE 4427 | EE 4427 | | | | | | |
| EE 4473 Automatic Control Systems | 3 |  | UM | S | EE 3345 or ME 4405 |  | | | | | | |
| 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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| BS, Electrical Engineering | | | | | | | | |
| **2019-2020 Major Requirements** | **CR** | **2019-2020 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 (included in Gen Ed Obj. 5) | | ENGL 1102 | | | | | | 3 |
| CS 1181 Computer Science and Programing (included in Gen Ed Obj. 7) | | 2. Oral Communication (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 (included in Gen Ed Obj. 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 General Chemistry | | | | | | 4 |
| PHYS 2211 Engineering Physics (included in Gen Ed Obj. 5) | | CHEM 1111L General Chemistry Lab | | | | | | 1 |
| PHYS 2212 Engineering Physics II | 4 | PHYS 2212 Engineering Physics II | | | | | | 4 |
| EE 1101 Electrical Engineering and Society | 1 | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** | | | | | | |
| EE 2240 Introduction to Electrical Circuits | 3 |  | | | | | |  |
| EE 2240L Introduction to Electrical Circuits Lab | 1 |  | | | | | |  |
| EE 2274 Introduction to Digital Systems | 3 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** | | | | | | |
| EE 2274L Introduction to Digital Systems Lab | 1 | 7. Critical Thinking | | INFO/CS 1181 | | | | 3 |
| EE 3325 Electromagnetics | 3 | 8. Information Literacy | |
| EE 3329 Introduction to Electronics | 3 | 9. Cultural Diversity **(1 course; 3 cr. min)** | | | | | | |
| EE 3301 Software Methodology and Tools for EE | 3 |  | | | | | |  |
| EE 3340 Fundamentals of Electrical Devices | 3 | General Education Elective to reach 36 cr. min. **(if necessary)** | | | | | | |
| EE 3340L Fundamentals of Electrical Devices Lab | 1 |  | | | | | |  |
| EE 3345 Signals and Systems | 3 |  | | | | | |  |
| EE 4416 Applied Engineering Methods | 3 | Total GE | | | | | | 40 |
| EE 4418 Communication Systems | 3 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/)  *http://coursecat.isu.edu/undergraduate/programs/* | | | | | | |
| 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 4429L 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 | **Graduation Requirement Minimum Credit Checklist** | | | **Confirmed** | | | |
| EE 4495 Senior Seminar | 3 | Minimum 36 cr. General Education Objectives (15 cr. AAS) | | | x | | | |
| EE 4496 Project Design | 3 | Minimum 15 cr. Upper Division in Major (0 cr. Associate) | | | x | | | |
| Electrical Engineering Elective | 3 | Minimum 36 cr. Upper Division Overall (0 cr. Associate) | | |  | x | | |
|  |  | Minimum of 120 cr. Total (60 cr. Associate) | | |  | x | | |
|  |  |  | | | | | | |
|  |  | ***MAP Completion Status (for internal use only)*** | | | | | | |
| **Advising Notes** | |  | *Date* | | | | | |
| Consult faculty advisor for selection of upper division | |  |  | | | | | |
| Technical and EE electives. | | *CAA or COT:* |  | | | | | |
|  | |  |  | | | | | |
|  | | **Complete College American Momentum Year**  **Math and English course in first year-Specific GE MATH course identified**  **9 credits in the Major area in first year**  **15 credits each semester (or 30 in academic year)**  **Milestone courses** | | | | | | |
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Form Revised 9.10.2019