

**Catalog Year 2018-2019**

BS, Civil Engineering

Engineering Geology

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 English Composition | 3 | C- | GE | F,S, Su | Appropriate placement score |  | | | | |
| GE Objective 3: MATH 1170 Calculus I | 4 | C- | GE | F, S, Su | Appropriate Placement score or MATH 1147 or MATH 1144 | | | | |  |
| GE Objective 5: CHEM 1111 & 1111L General Chem I & Lab | 5 | C- | GE | F,S, Su | MATH 1143 or 1147 or equivalent |  | | | | |
| GE Objective 5: GEOL 1101 & Lab OR BIOL 1100 & Lab | 4 |  | GE | F,S, Su |  |  | | | | |
| 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- |  | S, S, Su | MATH 1170 |  | | | | |
| PHYS 2211 Engineering Physics I | 4 |  |  | F,S, Su |  | MATH 1175 | | | | |
| CE 1105 Engineering Graphics | 2 |  |  | F,S | MATH 1147 or equivalent |  | | | | |
| GE Objective 7: CS/INFO 1181 | 3 |  | GE | F,S | MATH 1143 or 1147 | MATH 1143 or MATH 1147 | | | | |
| Total | 16 |  |  |  |  |  | | | | |
| Semester Three | | | | | | | | | | |
| CE/ME 2210 Engineering Statistics | 3 | C- |  | F,S | CE 1105, PHYS 2211, MATH 1175 | CE 1105, PHYS 2211, MATH 1175 | | | | |
| MATH 3352 Introduction to Probability | 3 |  | UM | F,S | MATH 1175 or permission of instructor | |  | | | |
| MATH 2240 Linear Algebra | 3 |  |  | F,S, Su | MATH 1170 |  | | | | |
| CE 2200 Civil Engineering Tools | 1 |  |  | F | MATH 1170, CS/INFO 1181 |  | | | | |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F,S, Su |  |  | | | | |
| GE Objective 4 | 3 |  | GE | F,S, Su |  |  | | | | |
| Total | 16 |  |  |  |  |  | | | | |
| Semester Four |  |  |  |  |  |  | | | | |
| CE/ME 2220 Engineering Dynamics | 3 |  |  | F,S | CE/ME 2210,CE/ME1105, PHYS 2211, MATH 1175 | | | |  | |
| CE/ME 3350 Mechanics of Materials | 3 | C- | UM | F,S | CE/ME 2210,CE/ME1105, PHYS 2211, MATH 1175 | | | |  | |
| MATH 3360 Differential Equations | 3 |  | UM | F,S | MATH 1175; MATH 2240 or MATH 2275 recommended | | | |  | |
| CE 3332 Basic Geotechnics | 3 | C- | UM | S | CE/ME 2210,CE/ME1105, PHYS 2211, MATH 1175 | | | |  | |
| CE 3337 Geotechnical Engineering Lab | 1 |  | UM | S | ENGL 1102, CE.ME 3332 | CE/ME 3332 | | | | |
| GE Objective 4 | 3 |  | GE | F, S, Su |  |  | | | | |
| Total | 16 |  |  |  |  |  | | | | |
| Semester Five |  |  |  |  |  |  | | | | |
| CE 3362 Structural Analysis | 3 |  | UM | F | CE/ME 2210,CE/ME 3350, MATH 2240 | |  | | | |
| CE 3366 Civil Engineering Materials | 2 |  | UM | F | CE/ME 3350, CE/ME 2210 | | CE 3367 | | | |
| CE 3367 Civil Engineering Materials Lab | 1 |  | UM | F | ENGL 1102, CE/ME 3350, CE/ME 2210, | | CE 3366 | | | |
| CE 3301 Surveying | 3 |  | UM | F,D | CE/ME 2210 |  | | | | |
| CE 3361 Engineering Economics & Management | 3 |  | UM | F,S | CE/ME 2210 |  | | | | |
| CE 4434 Geotechnical Design | 3 |  | UM | F | CE/ME 3350, CE 3332 |  | | | | |
| CE/GEOL 4454 | 3 |  | UM | D | CE 3332 or GEOL 3314 |  | | | | |
| Total | 18 |  |  |  |  |  | | | | |
| Semester Six |  |  |  |  |  |  | | | | |
| CE/ME 3341 Fluid Mechanics | 3 | C- | UM | S | CE/ME 2220, MATH 3360 |  | | | | |
| CE 3351 Engineering Hydrology | 3 |  | UM | S | CE/ME 3341 | CE/ME 3341 | | | | |
| ENVE 4408 Water & Waste Water Quality | 3 |  | UM | S,D | Minimum of C- in CHEM 1111 and 1111L | | |  | | |
| Either CE 4462 Steel Structure OR  CE 4464 Concrete Structure | 3 |  | UM | OS  ES | CE 3362 |  | | | | |
| CE/GEOL 4483 Earthquake Engineering | 3 |  | UM | D | CE 3332/GEOL 3313 |  | | | | |
| CE/GEOL 4455 Geologic Data Methods | 3 |  | UM | D | CE/GEOL 4454 |  | | | | |
| Total | 18 |  |  |  |  |  | | | | |
| Semester Seven |  |  |  |  |  |  | | | | |
| ENVE 4410 Intro to Environmental Engineering | 3 |  | UM | F | ENVE 4408 or equivalent |  | | | | |
| CE 4435 Hydraulic Design | 3 |  | UM | F | C- in CE/ME 3341 |  | | | | |
| CE 4496 A Project Design I | 3 |  | UM | F | See Catalog |  | | | | |
| CE Technical Elective (consult catalog and advisor) | 3 |  | UM | F | See Catalog |  | | | | |
| CE Technical Elective (consult catalog and advisor) | 3 |  | UM | F | See Catalog |  | | | | |
| CE/GEOL 4475 Essentials of Geomechanics | 3 |  | UM | D | CE/ME 3350 or GEOL 4421 |  | | | | |
| Total | 18 |  |  |  |  |  | | | | |
| Semester Eight |  |  |  |  |  |  | | | | |
| CE 4436 Transportation Engineering | 3 |  | UM | S | CE 3301, CE 3337, CE 3367 |  | | | | |
| CE 4496 B Project Design II | 3 |  | UM | S | CE 4496 A |  | | | | |
| CE Technical Elective (consult catalog and advisor) | 3 |  | UM | S | See Catalog |  | | | | |
| CE/GEOL 4476 Engineering Geology Project | 1 |  | UM | D | CE/GEOL 4454 |  | | | | |
| GE Objective 6 (two different departments) | 6 |  | GE | F,S, Su |  |  | | | | |
| GE Objective 9 | 3 |  | GE | F,S, Su |  |  | | | | |
| Total | 19 |  |  |  |  |  | | | | |
| \*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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| **2018-2019 Major Requirements** | **CR** | **GENERAL EDUCATION OBJECTIVES**  **Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9** | | | | | | **36 cr. min** |
| **MAJOR REQUIREMENTS** | **97** | 1. Written English (6 cr. min) ENGL 1101 | | | | | | 3 |
| ENGL 1102 Critical Reading & Writing (3 cr counted in Obj. 1) | | ENGL 1102 | | | | | | 3 |
| MATH 1170 Calculus I (4cr counted in Objective 4) | | 2. Spoken English (3 cr. min) COMM 1101 | | | | | | 3 |
| BIOL 1100 & 1100L Concepts of Biology OR  GEOL 1101 & 1101L Physical Geology (4cr counted in Obj.5) | | 3. Mathematics (3 cr. min) MATH 1170 | | | | | | 4 |
| 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** | | | | | | |
| CHEM 1111 & CHEM 1111L General Chem I (5cr counted in Obj.5) | |  | | | | | |  |
| MATH 1175 Calculus II | 4 |  | | | | | |  |
| PHYS 2211 Engineering Physics I | 4 | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** | | | | | | |
| CE 1105 Engineering Graphics | 2 | CHEM 1111 & 1111L | | | | | | 5 |
| CE/ME 2210 Engineering Statics | 3 | BIOL 1100 & 1100L OR GEOL 1101& 1101L | | | | | | 4 |
| CS/INFO 1181 Computer Science & Progrmg I (3 cr counted in Obj. 8) | |  | | | | | |  |
| MATH 3352 Introduction to Probability | 3 | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** | | | | | | |
| MATH 2240 Linear Algebra | 3 |  | | | | | |  |
| CE 2200 Engineering Tools | 1 |  | | | | | |  |
| COMM 1101 Principles of Speech (3 cr counted in Obj. 2) | | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** | | | | | | |
| CE/ME 2220 Engineering Dynamics | 3 | 7. Critical Thinking CS 1181 | | | | | | 3 |
| CE/ME 3350 Mechanics of Materials^ | 3 | 8. Information Literacy | | | | | |
| MATH 3360 Differential Equations | 3 | 9. Cultural Diversity **(1 course; 3 cr. min)** | | | | | | |
| CE 3332 Basic Geotechnics^ | 3 |  | | | | | |  |
| CE 3337 Geotechnical Engineering Lab | 1 | General Education Elective to reach 36 cr. min. **(if necessary)** | | | | | | |
| CE 3301 Surveying | 3 |  | | | | | |  |
| CE 3362 Structural Analysis | 3 | **Total GE** | | | | | | **40** |
| CE 3361 Engineering Economics & Management | 3 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/) | | | | | | |
| CE 3366 Civil Engineering Materials | 2 |
| CE 3367 Civil Engineering Materials Lab | 1 |  | | | | | | |
| CE 4434 Geotechnical Design | 3 |
| CE/ME 3341 Fluid Mechanics^ | 3 |
| CE 3351 Engineering Hydrology | 3 | **MAP Credit Summary** | | | | | **CR** | |
| ENVE 4408 Water & Waste Water Quality^^ | 3 | Major | | | | | 97 | |
| CE 4462 Dsgn of Steel -OR- CE 4464 Dsgn of Concrete Structures | 3 | General Education | | | | | 40 | |
| ENVE 4410 Introduction to Environmental Engineering | 3 | Free Electives to reach 120 credits | | | | | 0 | |
| CE 4435 Hydraulic Design | 3 | TOTAL | | | | | 137 | |
| CE 4496 A Project Design I | 3 |  | | | | | | |
| CE 4436 Transportation Engineering | 3 |
| CE 4496 B Project Design II | 3 |
| CE Technical Electives (see approved list in Catalog) | 6 |
| CE Technical Electives (see approved list in Catalog) | 3 | **Graduation Requirement Minimum Credit Checklist** | | | **Confirmed** | | | |
| **Engineering Geology Emphasis** | **13** | Minimum 36 cr. General Education Objectives (15 cr. AAS) | | | yes | | | |
| CE/GEOL 4454 Basic Engineering Geology | 3 | Minimum 16 cr. Upper Division in Major (0 cr. Associate) | | |  | yes | | |
| CE/GEOL 4455 Geologic Data Methods | 3 | Minimum 36 cr. Upper Division Overall (0 cr. Associate) | | |  | yes | | |
| CE/GEOL 4475 Essentials of Geomechanics | 3 | Minimum of 120 cr. Total (60 cr. Associate) | | |  | yes | | |
| CE 4480/GEOL 4483 Earthquake Engineering | 3 |  | |  | | | | |
| CE/GEOL 4476 Engineering Geology Project | 1 |  | |  | | | | |
| **Advising Notes** | | ***MAP Completion Status (for internal use only)*** | | | | | | |
| ^Students must earn at least a C- in the course | |  | *Date* | | | | | |
| ^^Prerequisite is a C- in CHEM 1111 & 1111L before enrolling | | *Department:* |  | | | | | |
|  | | *CAA or COT:* | 3.9.2018 SF jh | | | | | |
|  | | *Registrar:* |  | | | | | |
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Form Revised 1.24.2018