

Catalog Year 2017-2018

B.S. Geology

Engineering Geology Emphasis

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 5: GEOL 1100 Dynamic Earth **OR**  GEOL 1101 Physical Geology (lecture) | 3 | C | GE  | F,S,ASu |  |  |
| GE Objective 5: GEOL 1110 Physical Geol. for Scientists Lab | 1 |  | GE | F,S |  |  |
| GE Objective 3: MATH 1170 | 4 | C- | GE | F,S,Su | MATH 1144 or 1147 or appropriate placement score |  |
| GE Objective 4  | 3 |  | GE  |  |  |  |
| Free Electives | 1 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Two |
| GE Objective 1: ENGL 1102 Critical Reading and Writing | 3 | C- | GE | F,S | ENGL 1101 or equivalent |  |
| GE Objective 5: CHEM 1111 & 1111L General Chemistry I | 5 |  | GE | F,S,Su | MATH 1143 or 1147 or equivalent |  |
| MATH 1175 Calculus II **OR** MATH 3350 Statistical Methods | 4 or 3 |  |  | F,S,Su | MATH 1170 |  |
| GEOL 2210 Earth in Space & Time | 3 |  |  | F,S | GEOL 1100 or 1110, GEOL 1110 | GEOL 1110 |
| Free Electives | 0 or 1 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Three |
| PHYS 1111 General Physics I **OR** PHYS 2211 Engr. Physics I | 3 or 4 |  |  | F/F,S | MATH 1143 or 1147 /MATH 1175 | MATH 1175 for Phys 2211 |
| CHEM 1112 & 1112L General Chemistry II | 4 |  |  | F,S,Su | CHEM 1111 & 1111L and MATH 1143 or 1147 or equivalent |  |
| GEOL 2202 Historical Geology | 3 |  |  | F | GEOL 1100 or GEOL 1101 |  |
| GEOL 3313 Earth Materials I | 3 |  | UM | F | GEOL 1110, CHEM 1111 & 1111L | CHEM 1111 & 1111L |
| Free Electives | 1 or 2 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Four |  |  |  |  |  |  |
| PHYS 1112 General Physics II OR PHYS 2212 Engr. Physics II | 3 or 4 |  |  | S/F,S | PHYS 1111 & MATH 1143 or 1147 or equivalent/PHYS 2211  |  |
| GEOL 3314 Earth Materials II | 3 |  | UM | S | GEOL 2210 & GEOL 3313 |  |
| CE/GEOL 4454 Basic Engineering Geology | 3 |  | UM | D |  | GEOL 3314 or CE 3332 |
| GEOL Upper Division Electives | 4 |  | UM |  |  |  |
| Free Electives | 1 or 2 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Five |  |  |  |  |  |  |
| GEOL 4452 Sedimentation-Stratigraphy & GEOL 4452L Lab | 4 |  | UM | F | GEOL 2210 & ENGL 1102 or permission, CHEM 1111/L  | CHEM 1111 &Lab, GEOL 4452L |
| GEOL 4403 Principles of GIS & GEOL 4403 L Lab | 3 |  | UM | F,S |  | GEOL 4403 L |
| GE Objective 6 | 3 |  |  GE |  |  |  |
| CE/GEOL 4455 Geologic Data Methods | 3 |  | UM | D | GEOL/ CE 4454 |  |
| GEOL Upper Division Electives | 2 |  | UM |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Six |  |  |  |  |  |  |
| GEOL 3315 Evolution of Earth’s Surface  | 4 |  | UM | S | GEOL 1100 or GEOL 1101 & GEOL 1110 |  |
| GEOL 4421 Structural Geology | 4 |  | UM | S | MATH 1147 or both MATH 1143 & 1144, GEOL 4452 |  |
| GE Objective 6 | 3 |  | GE |  |  |  |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F,S,Su |  |  |
| GEOL Upper Division Electives | 1 |  | UM |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Summer Semester between 3rd and 4th year |  |  |  |  |  |  |
| GEOL 4450 Field Geology | 6 |  | UM | Su | GEOL 3314 (recommend) or GEOL 4420; GEOL 4421 & GEOL 4452 |
|  Total | 6 |  |  |  |  |  |
| Semester Seven |  |  |  |  |  |  |
| CE 4480 Earthquake Engineering^ | 3 |  | UM | D | GEOL 3313, CE 3332 or permission of instructor |  |
| GE Objective 7 OR 8 | 3 |  | GE |  |  |  |
| CE/GEOL 4475 Essentials of Geomechanics | 3 |  | UM | D | GEOL 4421 or CE/ENGR/ME 3350 |  |
| GEOL Upper Division Electives | 3 |  | UM |  |  |  |
|  Total  | 12 |  |  |  |  |  |
| Semester Eight |   |  |  |  |  |  |
| GEOL Upper Division Electives | 3 |  | UM |  | See Catalog |  |
| GE Objective 9 | 3 |  | GE |  |  |  |
| CE/GEOL 4476 Engineering Geology Project | 1 |  | UM | D | GEOL/CE 4454  |  |
| GE Objective 4 | 3 |  | GE |  |  |  |
| Free Electives | 2 |  |  |  |  |  |
|  Total  | 12 |  |  |  |  |  |
| \*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** | **72-75** |  |  |
| **BS GEOLOGY requirements** | **13-16** | 1. Written English (6 cr. min) ENGL 1101 | 3 |
| MATH 1170 Calculus I (4 cr counted in Objective 3) |  ENGL 1102 | 3 |
| MATH 1175 Calculus II **OR** MATH 3350 Statistical Methods | 3 or 4 | 2. Spoken English (3 cr. min) COMM 1101 | 3 |
| GEOL 1100 Dynamic Earth **OR**  GEOL 1101 Physical Geology (3 cr counted in Objective 5) | 3. Mathematics (3 cr. min) MATH 1170 | 4 |
| 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** |
| GEOL 1110 Physical Geology for Scientists Lab (1 cr counted in Obj. 5) |  |  |
| CHEM 1111 & 1111L General Chemistry I & Lab (5 cr counted in Obj.5) |  |  |
| CHEM 1112 & 1112L General Chemistry II & Lab | 4 | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** |
| PHYS 1111 General Physics I **OR** PHYS 2211 Engr. Physics I | 3 or 4 | GEOL 1100 OR GEOL 1101 | 3 |
| PHYS 1112 General Physics II **OR** PHYS 2212 Engr. Physics II | 3 or 4 | GEOL 1110 | 1 |
|  |  | CHEM 1111 & 1111L | 5 |
|  | 46 | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** |
| GEOL 2202 Historical Geology | 3 |  |  |
| GEOL 2210 Earth in Space and Time | 3 |  |  |
| GEOL 3313 Earth Materials I | 3 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** |
| GEOL 3314 Earth Materials II | 3 | 7. Critical Thinking |  |
| GEOL 3315 Evolution of Earth’s Surface | 4 | 8. Information Literacy  |
| GEOL 4403 & 4403 L Principles of GIS and Lab | 3 | 9. Cultural Diversity **(1 course; 3 cr. min)** |
| GEOL 4421 Structural Geology | 4 |  |  |
| GEOL 4450 Field Geology | 6 | General Education Elective to reach 36 cr. min. **(if necessary)** |
| GEOL 4452 Sedimentation-Stratigraphy | 4 |   |  |
| GEOL Electives (Upper Division)  | 13 |  **Total GE** | **40** |
|  |  | GE Objectives - Catalog Requirements: [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) |
|  **Emphasis in Engineering Geology**  | **13** |
| CE/GEOL 4454 Basic Engineering Geology | 3 |  |
| CE/GEOL 4455 Geologic Data Methods | 3 |
| CE/GEOL 4475 Essentials of Geomechanics | 3 |
| CE/GEOL 4476 Engineering Geology Project | 1 | **MAP Credit Summary** | **CR** |
| CE 4480 Earthquake Engineering ^ | 3 | Major  | 72-75 |
|  |  | General Education  | 40 |
|  |  | Free Electives to reach 120 credits | 5-8 |
|  |  |  TOTAL | 120 |
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|  |  |
|  |  | **Graduation Requirement Minimum Credit Checklist** | **Confirmed** |
|  |  | Minimum 36 cr. General Education Objectives (15 cr. AAS) | yes |
|  |  | 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)*** |
| 37 credits listed under Required Courses for the B.S.in Geology plus 5 unique upper division Geoscience Elective credits to equal at least 50 Geoscience credits plus the 13 credits of Engineering Geology courses are required for this degree. |  | *Date* |
| *Department:*  | 10.26.2017 mmc |
| *CAA or COT:* | 10.10.2017 sfjh |
| ^Student should contact the Department of Civil Engineering early on for additional advising regarding CE 4480 course availability. | *Registrar:*  |  |
| GEOL Electives (Upper Division): Students must take 5 unique courses total at least 13 credits. Consultation with GEOL faculty advisor is strongly encouraged. |  |