

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.

**Catalog Year 2018-2019**

B.S., Biochemistry

|  |  |  |  |  |  |  |  |  |  |  |
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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 1144 or 1147 or appropriate test score | | | |  | |
| GE Objective 5: CHEM 1111 & 1111L Gen Chem I & Lab | 5 | C- | GE | F,S, Su | MATH 1143 or 1147 or appropriate test score | | | |  | |
| GE Objective 5 : BIOL 1101 & 1101L General Biology I & Lab | 4 | C- | GE | F,S, Su | MATH 1108 or appropriate test score | | | |  | |
| 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 1175 C- | | | |  | |
| CHEM 1112 & 1112L General Chemistry II & Lab | 4 | C- |  | F,S, Su | CHEM 1111 & 1111L and MATH 1143 or | | | |  | |
| BIOL 1102 & BIOL 1102 L General Biology II & Lab | 4 | C- |  | F,S | BIOL 1101 & Lab | | | |  | |
| Total | 15 |  |  |  |  | | | |  | |
| Semester Three |  |  |  |  |  | | | |  | |
| BIOL 2235 & 2235L General Microbiology & Lab\*\*\* | 4 |  |  |  | | BIOL 1101, BIOL 1102, CHEM 1112 | | |  | |
| PHYS 1111 & 1113 General Physics I & Lab\*\*\* | 4 | C- |  | F,S | MATH 1143 or 1147 or appropriate test score | | | | MATH 1175 | |
| CHEM 3301 & CHEM 3303 Organic Chemistry I & Lab | 4 | C- | UM | F F,S | CHEM 1112 & 1112L or permission of instructor | | | |  | |
| GE Objective 2: COMM 1101 Principles of Speech | 3 | C- | GE | F, S, Su |  | | | |  | |
| Total | 15 |  |  |  |  | | | |  | |
| Semester Four | | | | | | | | | | |
| BIOL 3358 Genetics | 3 | C- | UM | F,S | BIOL 2235 or BIOL 2206 | | | |  | |
| PHYS 1112 & PHYS 1114 General Physics II & Lab\*\*\* | 4 | C- |  | F | PHYS 1111 & PHYS 1113 | | | |  | |
| CHEM 3302 & CHEM 3304 Organic Chemistry II & Lab | 4 | C- |  | S | CHEM 3301 & CHEM 3303 | | | |  | |
| CHEM 2232 & CHEM 2234 Qualitative Analysis & Lab | 4 | C- |  | S | CHEM 1112 & Lab, MATH 1160 or 1170 | | | CHEM 2234 or permission | | |
| Total | 15 |  |  |  |  | | | |  | |
| Semester Five | | | | | | | | | | |
| BIOL/CHEM 4445 Biochemistry I | 3 |  | UM | F | BIOL 1101 & CHEM 3302 | | | |  | |
| CHEM 3341 Topics in Physical Chemistry\*\*\* | 3 | C- | UM | F | CHEM 1112 & 1112 L, PHYS 1112 or 2211, MATH 1160 or 1175 | | | | |  |
| BIOL electives from approved list | 4 | C- |  | F,S | See catalog | | | |  | |
| CHEM elective from approved list | 4 | C- |  | F,S | See catalog | | | |  | |
| GE Objective 6: | 3 |  | GE | F,S, Su |  | | | |  | |
| Total | 17 |  |  |  |  | | | |  | |
| Semester Six | | | | | | | | | | |
| BIOL/CHEM 4447 Biochemistry II | 3 | C- |  |  | BIOL /CHEM 4445 | | | |  | |
| CHEM 3342 Topics in Physical Chemistry\*\*\* | 3 | C- | UM | S | CHEM 3341 Topics in Physical Chemistry | | | |  | |
| BIOL 4437/CHEM 4438 Experimental Biochemistry | 1 | C- | UM | S | BIOL 4432 or CHEM 4445 | | | |  | |
| BIOL electives from approved list | 4 | C- | UM | F,S | See catalog | | | |  | |
| GE Objective 4: | 3 |  | GE | F,S |  | | | |  | |
| Total | 14 |  |  |  |  | | | |  | |
| Semester Seven |  |  |  |  |  | | | |  | |
| BIOL 4444 & BIOL 4444L Cell & Molecular Biology & Lab | 4 | C- | UM | F | BIOL 3358 & CHEM 3302 | | | |  | |
| CHEM electives from approved list | 4 | C- |  | 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 |  |  |  |  |  | | | |  | |
| BIOL/CHEM 4498 Seminar in Biochemistry | 1 | C- | UM | F,S |  | | Senior standing or permission of instructor | | | |
| BIOL or CHEM elective from approved list | 4 | C- |  | F,S | See catalog | | | |  | |
| Free electives | 3 |  |  |  |  | | | |  | |
| GE Objective 9: | 3 |  | GE |  |  | | | |  | |
| GE Objective 4: | 3 |  | GE | F,S, Su |  | | | |  | |
| Total | 14 |  |  | F, S, Su |  | | | |  | |
| \*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** | **77** | 1. Written English (6 cr. min) ENGL 1101 | | | | | | 3 |
| **CORE Requirements** | **45** | ENGL 1102 | | | | | | 3 |
| BIOL 1101 & 1101L General Biology I & Lab (4 cr counted in Obj. 5) | | 2. Spoken English (3 cr. min) COMM 1101 | | | | | | 3 |
| BIOL 1102 & BIOL 1102 L General Biology II & Lab | 4 | 3. Mathematics (3 cr. min) MATH 1170 | | | | | | 4 |
| BIOL 2235 & 2235L Gen Micro/lab \* | 4 | 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** | | | | | | |
| BIOL 3358 Genetics | 3 |  | | | | | |  |
|  |  |  | | | | | |  |
| BIOL/CHEM 4445 Biochemistry I | 3 | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** | | | | | | |
| BIOL/CHEM 4447 Biochemistry II | 3 | BIOL 1101 & 1101L General Biology I & Lab | | | | | | 4 |
| BIOL 4437/CHEM 4438 Experimental Biochemistry | 1 | CHEM 1111 & 1111L General Chemistry I & Lab | | | | | | 5 |
| BIOL 4444 & BIOL 4444L Cell & Molecular Biology & Lab | 4 |  | | | | | |  |
| BIOL/CHEM 4498 Seminar in Biochemistry | 1 | 6. Behavioral an Social Sciences **(2 courses-different prefixes; 6 cr min)** | | | | | | |
| CHEM 1111 & 1111L General Chemistry I & Lab (5 cr counted in Obj.5) | |  | | | | | |  |
| CHEM 1112 & 1112L General Chemistry II & Lab | 4 |  | | | | | |  |
| CHEM 2232 & CHEM 2234 Qualitative Analysis & Lab | 4 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** | | | | | | |
| CHEM 3301 & CHEM 3303 Organic Chemistry I & Lab | 4 | 7. Critical Thinking | | | | | |  |
| CHEM 3302 & CHEM 3304 Organic Chemistry II & Lab | 4 | 8. Information Literacy | | | | | |
| CHEM 3341 Topics in Physical Chemistry\* | 3 | 9. Cultural Diversity **(1 course; 3 cr. min)** | | | | | | |
| CHEM 3342 Topics in Physical Chemistry\* | 3 |  | | | | | |  |
| **BIOL/CHEM Approved Electives** | **20** | General Education Elective to reach 36 cr. min. **(if necessary)** | | | | | | |
| Approved BIOL Electives (see list of Upper Division courses in catalog) | 8 |  | | | | | |  |
| Approved CHEM Electives (see list in catalog) | 8 | Total GE | | | | | | 40 |
| Approved BIOL OR CHEM Electives (see list in catalog) | 4 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/) | | | | | | |
| **MATH requirements** | **12** |
| MATH 1170 Calculus (4 cr counted in Objective 3) | |  | | | |  | | |
| MATH 1175: Calculus II | 4 | **MAP Credit Summary** | | | | **CR** | | |
| PHYS 1111 & 1113 General Physics I & Lab\* | 4 | Major | | | | 77 | | |
| PHYS 1112 & PHYS 1114 General Physics II & Lab\* | 4 | General Education | | | | 40 | | |
|  |  | Free Electives to reach 120 credits | | | | 3 | | |
|  |  | TOTAL | | | | 120 | | |
|  |  |  | | | | | | |
|  |  |
|  |  |  | | |  | | | |
|  |  | 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)*** | | | | | | |
| **All major courses must be passed with a C- or better.** | |  | *Date* | | | | | |
| \*\*\*Alternative choices: | | *Department:* |  | | | | | |
| -BIOL 2206 and 2207 can be taken instead of BIOL 2235 and 2235L | | *CAA or COT:* | 3.6.2018 SF | | | | | |
| -CHEM 3351 and 3352 can be taken instead of CHEM 3341 and 3342 | | *Registrar:* |  | | | | | |
| -PHYS 2211,2212, 2213, and 2214 may be taken instead of | |  | | | | | | |
| PHYS 1111, 1112, 1113, 1114 | |
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Form Revised 1.24.2018