

**Catalog Year 2018-2019**

B.S., Biology

Concentration: Biomedical Sciences

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 1160 Applied Calculus | 3 | C- | GE | F,S, Su | MATH 1143 or 1147 |  |
| GE Objective 5: CHEM 1111, 1111L General Chemistry I | 5 |  | GE | F,S, Su | MATH 1143 or 1147 |  |
| GE Objective 5: BIOL 1101, 1101L Biology I | 4 |  | GE | F,S, Su | MATH 1108 | MATH 1108 |
|  Total | 15 |  |  |  |  |  |
| Semester Two |
| GE Objective 1: ENGL 1102 Critical Reading and Writing | 3 | C- | GE | F,S, Su | ENGL 1101 or equivalent |  |
| BIOL 1102, 1102L Biology II | 4 |  |  | F,S | BIOL 1101 |  |
| CHEM 1112, 1112L General Chemistry II | 4 |  |  | F,S, Su | CHEM 1111/Lab, MATH 1143 or 1147 |  |
| GE Objective 4:  | 3 |  | GE | F,S, Su |  |  |
| Free Electives | 1 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Three |
| BIOL 2209, 2209L General Ecology | 4 |  |  | F,S | BIOL 1101 and BIOL 1102 |  |
| BIOL 2221, 2221L Intro Micro | 4 |  |  | F,S | CHEM 1101, CHEM 1111/Lab, BIOL 1101 |  |
| OR BIOL 2235, 2235L Gen Micro |  |  |  |  | BIOL 1101, BIOL 1102, CHEM 1112 |  |
| CHEM 3301, 3303 Organic Chemistry I, Lab | 4 |  | UM | F | CHEM 1112/Lab |  |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F,S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Four |  |  |  |  |  |  |
| BIOL 2206, 2207 Cell Biology, Lab | 4 |  |  | F,S | BIOL 1101, BIOL 1102, CHEM 1111/L, 1112/L | CHEM 1112/L |
| MATH 3350 Statistical Methods | 3 |  | UM | F,S | MATH 1160 or 1170 C- minimum grade |  |
| BIOL 3316 Biometry Lab | 1 |  | UM | F,S | MATH 3350 | MATH 3350 |
| Choose one course from Set 1 | 4 |  | UM | S | CHEM 3301 or permission of instructor |  |
| GE Objective 6: | 3 |  | GE | F,S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Five |  |  |  |  |  |  |
| BIOL 3301 and 3301L | 4 |  | UM | F,S | BIOL 1101 and 1101L |  |
| PHYS 1111, 1113 General Physics I, Lab | 4 |  |  | F | MATH 1143 or 1147 |  |
| GE Objective 4: | 3 |  | GE | F,S, Su |  |  |
| Free Electives | 4 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Six |  |  |  |  |  |  |
| Either BIOL 3302, 3302L OR BIOL 3304, 3304L | 4 or 5 |  | UM | F,S | BIOL 1101 and 1101LBIOL 1101,1101L & 1102, 1102L and 1 yr college Chem |  |
| BIOL 3358 Genetics | 3 |  | UM | F,S | BIOL 2206 or BIOL 2235 |  |
| GE Objective 6: | 3 |  | GE | F,S, Su |  |  |
| Choose one course from Set 1 | 3 |  |  |  |  |  |
| Free Electives | 1 or 2 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Seven |  |  |  |  |  |  |
| Upper Division BMS Electives | 4 |  | UM |  |  |  |
| BIOL 4491 Seminar | 1 |  | UM | F,S | Senior status or permission of department |  |
| BIOL 4417 Organic Evolution | 3 |  | UM | F,S | BIOL 3358 and BIOL 2209 |  |
| GE Objective 7 or 8: | 3 |  | GE | F,S, Su |  |  |
| Free Electives | 4 |  |  |  |  |  |
|  Total  | 15 |  |  |  |  |  |
| Semester Eight |   |  |  |  |  |  |
| Upper Division BMS Electives | 8 |  | UM |  |  |  |
| BIOL 4492 Seminar | 1 |  | UM | F,S | Senior status or permission of department |  |
| GE Objective 9: | 3 |  | GE | F,S, Su |  |  |
| Free Electives | 3 |  |  |  |  |  |
|  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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| **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** | **67 or 68** |  |  |
| **CORE Requirements** | **43** | 1. Written English (6 cr. min) ENGL 1101 | 3 |
| BIOL 1101, 1101L Biology I, Lab (4 credits counted in Obj. 5) |  ENGL 1102 | 3 |
| BIOL 1102, 1102L Biology II | 4 | 2. Spoken English (3 cr. min) COMM 1101 | 3 |
| BIOL 2206, 2207 Cell Biology, Lab | 4 | 3. Mathematics (3 cr. min) MATH 1160 | 3 |
| BIOL 2209, 2209 L General Ecology, Lab | 4 | 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** |
| BIOL 3316 Biometry Lab | 1 |  |  |
| BIOL 3358 Genetics | 3 |  |  |
| BIOL 4417 Organic Evolution | 3 | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** |
| BIOL 4491/4492 Seminars | 2 | BIOL 1101 & Biology I and Lab | 4 |
| MATH 1160 Applied Calculus (3 credits counted in Objective 3) | CHEM 1111 & 1111L General Chemistry I & Lab | 5 |
| MATH 3350 Statistical Methods | 3 |  |  |
| CHEM 1111, 1111L General Chem I, Lab (5 cr. counted in Objective 5) | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** |
| CHEM 1112, 1112L General Chemistry II and Lab | 4 |  |  |
| CHEM 3301/3303 Organic Chemistry I, and Lab | 4 |  |  |
| PHYS 1111, 1113 General Physics I and Lab | 4 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** |
| **CHOOSE Two Courses (minimum of 7 cr) Set 1:** | 7 | 7. Critical Thinking |  |
| PHYS 1112, 1114 Gen Phys II, lab; CHEM 3302, 3304 Organic Chem II, Lab; BIOL 4432 Biochemistry | 8. Information Literacy  |
| **BMS REQUIREMENTS** | **24 or 25** | 9. Cultural Diversity **(1 course; 3 cr. min)** |
| BIOL 3301 and 3301L | 4 |  |  |
| Either BIOL 3302 and 3302L or BIOL 3304 and 3304L | 4 or 5 | General Education Elective to reach 36 cr. min. **(if necessary)** |
| Upper Division BMS Electives (Select 12 credits)  | 12 |  |
| BIOL 3305 Introduction to Pathobiology**;** BIOL 3324,3324L Developmental Biology; |   |  |
| BIOL 4400,4400L Oral Histology & Embryology; BIOL 4419,4419L Mammalian Histology, Lab; |  Total GE | 39 |
| BIOL 4423 General Parasitology; BIOL 4432 Biochemistry; | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/)  |
| BIOL 4437 Experimental Biochemistry; BIOL 4433,4433L Microbial Physiology, Lab; |
| BIOL 4440,4440L Human Gross Anatomy, Lab; BIOL 4443 Endocrinology; |  |  |
| BIOL 4444,4444L Cell and Molecular Biology, Lab; BIOL 4449 Human Physiology I; | **MAP Credit Summary** | **CR** |
| BIOL 4450,4450L Head and Neck Anatomy, Lab; BIOL 4451, 4451L Immunology, Lab; | Major  | 67 or 68 |
| BIOL 4455 Pathogenic Microbiology; BIOL 4466 Medical Mycology; | General Education  | 39 |
| BIOL 4470 Cross-sectional Anatomy; BIOL 4475 General Virology; | Free Electives to reach 120 credits | 13 or 14 |
| BIOL 4486,4486L Human Systemic Physiology, Lab; BIOL 4481 or 4482 Indep. Problems ; |  TOTAL | 120 |
| BIOL 4453 Foundations in Neuroscience; BIOL 4456 Human Physiology II; |  |
| BIOL 4463 & 4463L Human Pathophysiology & Lab;  |
| BIOL 4486 & 4486L Human Systemic Physiology& Lab; | **Graduation Requirement Minimum Credit Checklist** | **Confirmed** |
| BIOL 2280 or BIOL 4480 Mentored Research Alliance; | Minimum 36 cr. General Education Objectives (15 cr. AAS) |  Yes |
| Microbiology | 4 | Minimum 16 cr. Upper Division in Major (0 cr. Associate) |  | Yes |
| Either BIOL 2221 & 2221L Intro Micro or BIOL 2235 & 2235L Gen Micro |  | 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)*** |
| **BIOL 3324 and 4432 are strongly recommended and often**  |  | *Date* |
| **required by Medical, Dental, and Veterinary schools.**  | *Department:*  |  |
| The MCAT has Psychology section and thus Psychology 1101 in  GE Objective 6 may be a good choice for some students. | *CAA or COT:* | 3.23.2018 sf jh |
| *Registrar:*  |  |
| Consult catalog for BMS electives. |  |
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 Form Revised 1.24.2018