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| **Catalog Year 2021-2022**  BS Biology  Integrated Organismal Biology Concentration (IOB) | ***(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 only one strategy. Actual plans for individual students will vary based on advisor recommendations and academic needs. Official Program Requirements including Major, General Education, Electives, 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 or equivalent | |  | | | |
| GE Objective 5: BIOL 1101/L Biology I, Lab | 4 |  | GE | F, S, Su | | Placement in MATH 1108 | | MATH 1108 | | | |
| GE Objective 4: | 3 |  | GE | F, S, Su | |  | |  | | | |
| Free Electives | 2 |  |  |  | |  | |  | | | |
| 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/L Biology II, Lab | 4 |  |  | F, S | | BIOL 1101/L | |  | | | |
| GE Objective 6: | 3 |  | GE | F, S, Su | |  | |  | | | |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F, S, Su | |  | |  | | | |
| Total | 13 |  |  |  | |  | |  | | | |
| Semester Three | | | | | | | | | | | |
| BIOL 2209/L General Ecology, Lab | 4 |  |  | F, S | | BIOL 1101/L and BIOL 1102/L | | | |  | |
| GE Objective 5: CHEM 1111/L General Chemistry I, Lab | 5 |  | GE | F, S, Su | | MATH 1143 or 1147 or equivalent | |  | | | |
| 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 | | | |
| Free Electives | 2 |  |  |  | |  | |  | | | |
| Total | 15 |  |  |  | |  | |  | | | |
| Semester Four |  |  |  |  | |  | |  | | | |
| BIOL 2206, 2207 Cell Biology, Lab | 4 |  |  | F, S | BIOL 1101/L, BIOL 1102/L, CHEM 1111/L | | CHEM 1112/L | | | | |
| Biology Elective | 4 |  |  |  | |  | |  | | | |
| CHEM 1112/L General Chemistry II, Lab | 4 |  |  | F, S, Su | | CHEM 1111/L, MATH 1143 or MATH 1147 | | | | |  |
| Upper Division Free Electives | 4 |  | UU |  | |  | |  | | | |
| Total | 16 |  |  |  | |  | |  | | | |
| Semester Five |  |  |  |  | |  | |  | | | |
| BIOL 3358 Genetics | 3 |  | UM | F, S | | BIOL 2206 or 2235 | |  | | | |
| Anatomy, Physiology, Development course (Upper Division) | 4 |  | UM |  | |  | |  | | | |
| CHEM 3301, 3303 Organic Chemistry I, Lab | 4 |  | UM | F | | CHEM 1112/L | |  | | | |
| GE Objective 6: | 3 |  | GE | F, S, Su | |  | |  | | | |
| Upper Division Free electives | 2 |  | UU |  | |  | |  | | | |
| Total | 16 |  |  |  | |  | |  | | | |
| Semester Six |  |  |  |  | |  | |  | | | |
| BIOL 4417 Organic Evolution | 3 |  | UM | F, S | | BIOL 3358, BIOL 2209/L | |  | | | |
| Diversity or Evolutionary course | 4 |  |  |  | |  | |  | | | |
| CHEM 3302, 3304 Organic Chemistry II, Lab | 4 |  | UM | S | | CHEM 3301 or permission of instructor | |  | | | |
| GE Objective 7 or 8 | 3 |  | GE | F, S, Su | |  | |  | | | |
| Free Electives | 1 |  |  |  | |  | |  | | | |
| Total | 15 |  |  |  | |  | |  | | | |
| Semester Seven |  |  |  |  | |  | |  | | | |
| Diversity or Evolutionary Course | 4 |  |  |  | |  | |  | | | |
| Biology 4491 Senior Seminar | 1 |  | UM | F, S | | Senior standing or permission of department | | | |  | |
| PHYS 1111, 1113 General Physics, Lab | 4 |  |  |  | | MATH 1143 or 1147 or equivalent | |  | | | |
| GE Objective 4: | 3 |  | GE | F, S, Su | |  | |  | | | |
| Upper Division Free electives | 3 |  | UU |  | |  | |  | | | |
| Total | 15 |  |  |  | |  | |  | | | |
| Semester Eight |  |  |  |  | |  | |  | | | |
| BIOL 4492 Senior Seminar | 1 |  | UM | F, S | | Senior standing or permission of department | | | |  | |
| Anatomy, Physiology, Development Course | 4 |  |  |  | |  | |  | | | |
| BIOL 4432 Biochemistry | 3 |  | UM | F,S | | BIOL 1101, CHEM 3301 | |  | | | |
| Biology elective | 4 |  |  |  | |  | |  | | | |
| GE Objective 9: | 3 |  | GE | F, S, Su | |  | |  | | | |
| 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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| **2021-2022 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** | 1. Written English (6 cr. min) ENGL 1101 | | | | | | 3 |
| **Core Requirements** | **36** | ENGL 1102 | | | | | | 3 |
| BIOL 1101/L Biology I, Lab | 4 | 2. Spoken English (3 cr. min) COMM 1101 | | | | | | 3 |
| BIOL 1102/L Biology II, Lab | 4 | 3. Mathematics (3 cr. min) MATH 1160 or 1153 | | | | | | 3 |
| BIOL 2206, 2207 Cell Biology, Lab | 4 | 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** | | | | | | |
| BIOL 2209/L General Ecology, Lab | 4 |  | | | | | |  |
| BIOL 3358 Genetics | 3 |  | | | | | |  |
| BIOL 3316 Biometry Lab | 1 | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** | | | | | | |
| BIOL 4417 Organic Evolution | 3 | PHYS 1111/L | | | | | | 4 |
| BIOL 4491 and 4492 Seminars | 2 | CHEM 1111/L | | | | | | 5 |
| MATH 1160 Applied Calculus (3 credits counted in Objective 3) | |  | | | | | |  |
| CHEM 1111/L General Chemistry I, Lab (5 credits counted in Objective 5) | | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** | | | | | | |
| CHEM 1112/L General Chemistry II, Lab | 4 |  | | | | | |  |
| MATH 3350 Statistical Methods | 3 |  | | | | | |  |
| CHEM 3301,3303 Organic Chemistry I, Lab | 4 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** | | | | | | |
| PHYS 1111, 1113 General Physics, Lab (4 credits counted in Objective 5) | | 7. Critical Thinking | | | | | |  |
|  |  | 8. Information Literacy | | | | | |
| **CHOOSE Two (7 cr. minimum)** | **7** | 9. Cultural Diversity **(1 course; 3 cr. min)** | | | | | | |
| PHYS 1112, 1114 General Physics II, Lab | 4 |  | | | | | |  |
| BIOL 4432 Biochemistry | 3 | General Education Elective to reach 36 cr. min. **(if necessary)** | | | | | | |
| CHEM 3302, 3304 Organic Chemistry II, Lab | 4 |  | | | | | |  |
| **Anatomy, Physiology & Development courses** |  | Total GE | | | | | | 39 |
| **Select 8 credits (Upper Division):** | **8** | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/) | | | | | | |
| BIOL 3301/L Advanced Anatomy & Physiology I, Lab | 4 |
| BIOL 3302/L Advanced Anatomy & Physiology II, Lab | 4 |  | | | | |  | |
| BIOL 3303/L Principles of Animal Physiology, Lab | 4 | **MAP Credit Summary** | | | | | **CR** | |
| BIOL 3314/L Comparative Vertebrate Anatomy, Lab | 4 | Major | | | | | 67 | |
| BIOL 3324/L Developmental Biology, Lab | 4 | General Education | | | | | 39 | |
| BIOL 4404/L Plant Physiology | 4 | Upper Division Free Electives to reach 36 credits | | | | | 9 | |
| BIOL 4405/L Plant Form and Function, Lab | 4 | Free Electives to reach 120 credits | | | | | 5 | |
| BIOL 4419/L Mammalian Histology, Lab | 4 | TOTAL | | | | | 120 | |
| BIOL 4443 Endocrinology | 3 |  | | | | | | |
| BIOL 4464 Lectures in Human Physiology | 4 |
| **Diversity or Evolutionary Courses** |  |
| **Select 8 credits:** | **8** | **Graduation Requirement Minimum Credit Checklist** | | | **Confirmed** | | | |
| BIOL 2212 Fall Flora | 2 | Minimum 36 cr. General Education Objectives (15 cr. AAS) | | | Yes | | | |
| BIOL 2214 Spring Flora | 2 | Minimum 15 cr. Upper Division in Major (0 cr. Associate) | | |  | Yes | | |
| BIOL 3310/L Invertebrate Zoology, Lab | 4 | Minimum 36 cr. Upper Division Overall (0 cr. Associate) | | |  | Yes | | |
| BIOL 4406/L Plant Diversity & Evolution, Lab | 4 | Minimum of 120 cr. Total (60 cr. Associate) | | |  | Yes | | |
| BIOL 4412/L Systematic Botany, Lab | 4 |  | | | | | | |
| BIOL 4423 General Parasitology | 3 |
| BIOL 4431/L General Entomology, Lab | 3 |
| BIOL 4434/L Microbial Diversity, Lab | 4 |
| BIOL 4438 Ornithology | 4 |
| BIOL 4441/L Mammalogy, Lab | 4 |
| BIOL 4442 Plant Animal Interactions | 3 |  | |  | | | | |
| BIOL 4495 Animal Behavior | 4 |
| **Biology Electives** | **8** |
| Students must fulfill a minimum of an additional 8 credits of upper division biology electives for which they can select any upper division course in Biology, including Independent Problems ([BIOL 4481](https://next.coursecat.isu.edu/search/?P=BIOL%204481) and/or [BIOL 4482](https://next.coursecat.isu.edu/search/?P=BIOL%204482)) and/or Mentored Research Alliance ([BIOL 4480](https://next.coursecat.isu.edu/search/?P=BIOL%204480)). | |  | |  | | | | |
| **Advising Notes** | | ***MAP Completion Status (for internal use only)*** | | | | | | |
| BIOL 2235/L can substitute for BIOL 2206 and 2207 in the IOB option. | |  | *Date* | | | | | |
|  | | *Department:* |  | | | | | |
|  | | *CAA or COT:* |  | | | | | |
|  | | *Registrar:* |  | | | | | |

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