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| **Catalog Year 2022-2023**BS BiologyBiomedical Sciences Concentration (BMS) | ***(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 |  |
| GE Objective 5: CHEM 1111/L General Chemistry I, Lab | 5 |  | GE | F, S, Su | MATH 1143 or 1147 |  |
| GE Objective 5: BIOL 1101/L Biology I, Lab | 4 |  | GE | F, S, Su | Placement in 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/L Biology II, Lab | 4 |  |  | F, S | BIOL 1101/L |  |
| CHEM 1112/L General Chemistry II, Lab | 4 |  |  | F, S, Su | CHEM 1111/L, MATH 1143 or 1147 |  |
| BIOL 1191 Wonder about Biology | 1 |  |  | F, S |  |  |
| GE Objective 4:  | 3 |  | GE | F, S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Three |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F, S, Su |  |  |
| BIOL 2209/L General Ecology, Lab | 4 |  |  | F, S | BIOL 1101/L and BIOL 1102/L |  |
| BIOL 2221/L Introduction to Microbiology, Lab | 4 |  |  | F, S, Su | CHEM 1101/L, CHEM 1111/L, BIOL 1101/L |  |
| OR BIOL 2235/L General Microbiology, Lab |  |  | F, S | BIOL 1101/L, BIOL 1102/L, CHEM 1112/L |  |
| CHEM 3301, 3303 Organic Chemistry I, Lab | 4 |  | UM | F | CHEM 1112/L |  |
|  Total | 15 |  |  |  |  |  |
| Semester Four |  |  |  |  |  |  |
| BIOL 2206, 2207 Cell Biology, Lab | 4 |  |  | F, S | BIOL 1101/L, BIOL 1102/L, 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 |
| GE Objective 6: | 3 |  | GE | F, S, Su |  |  |
| Either CHEM 3302, 3304 OR BIOL 4432 | 3 or 4 |  | UM | S | CHEM 3301 |  |
|  | UM | F, S | BIOL 1101 and CHEM 3301 |  |
|  Total | 14 / 15 |  |  |  |  |  |
| Semester Five |  |  |  |  |  |  |
| BIOL 3301/L Adv Human Anatomy & Physiology I, Lab | 4 |  | UM | F, S | BIOL 1101/L |  |
| 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 |  |  |  |  |  |  |
| BIOL 3302/L Adv Human Anatomy & Physiology II, Lab  | 4 |  | UM | F, S | BIOL 1101/L |  |
| BIOL 3358 Genetics | 3 |  | UM | F, S | BIOL 2206/2207 or BIOL 2235/L |  |
| Either CHEM 3302, 3304 OR PHYSOR BIOL 4432 | 3 or 4 |  | UM | S | CHEM 3301 |  |
|  |  | S | PHYS 1111 |  |
|  | UM | F, S | BIOL 1101 and CHEM 3301 |  |
| GE Objective 6: | 3 |  | GE | F, S, Su |  |  |
| Free Electives | 3 |  |  |  |  |  |
|  Total | 16 / 17 |  |  |  |  |  |
| Semester Seven |  |  |  |  |  |  |
| BIOL 4417 Organic Evolution | 3 |  | UM | F, S | BIOL 3358 and BIOL 2209/L |  |
| Choose two course from BMS Requirements | 7 |  | UM |  |  |  |
| GE Objective 7 or 8: | 3 |  | GE | F, S, Su |  |  |
| Free Electives | 3 |  |  |  |  |  |
|  Total  | 16 |  |  |  |  |  |
| Semester Eight |   |  |  |  |  |  |
| Choose two courses from BMS Requirements | 6 |  | UM |  |  |  |
| BIOL 4491/4492 Seminar | 1 |  | UM | F, S | Senior status or permission of department |  |
| GE Objective 9: | 3 |  | GE | F, S, Su |  |  |
| Free Electives | 3 |  |  |  |  |  |
|  Total  | 13 |  |  |  |  |  |
| \*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.)  |

 BS Biology, Biomedical Sciences Page 2

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| **2022-2023 Major Requirements** | **CR** | **GENERAL EDUCATION OBJECTIVES****Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9** | **36 cr. min** |
| **MAJOR REQUIREMENTS** | **68** |  |  |
| **CORE Requirements** | **43** | 1. Written English (6 cr. min) ENGL 1101 | 3 |
| BIOL 1101/L Biology I, Lab (4 credits counted in Obj. 5) |  ENGL 1102 | 3 |
| BIOL 1102/L Biology II, Lab | 4 | 2. Spoken English (3 cr. min) COMM 1101 | 3 |
| BIOL 1191 Wonder about Biology | 1 | 3. Mathematics (3 cr. min) MATH 1160 | 3 |
| BIOL 2206, 2207 Cell Biology, Lab | 4 |  OR MATH 1170  | 4 |
| BIOL 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 Seminar | 1 | BIOL 1101/ Biology I, Lab | 4 |
| MATH 1160 Applied Calculus (3 credits counted in Objective 3) | CHEM 1111/L General Chemistry I, Lab | 5 |
| MATH 3350 Statistical Methods | 3 |  |  |
| CHEM 1111/L General Chem I, Lab (5 cr. counted in Objective 5) | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** |
| CHEM 1112/L General Chemistry II, Lab | 4 |  |  |
| CHEM 3301, 3303 Organic Chemistry I, Lab | 4 |  |  |
| PHYS 1111, 1113 General Physics I, Lab | 4 | One Course from EITHER Objective 7 OR 8 **(1 course; 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** | **25** | 9. Cultural Diversity **(1 course; 3 cr. min)** |
| BIOL 3301/L Advanced Human Anatomy & Physiology I | 4 |  | 68+3 |
| BIOL 3302/L Advanced Human Anatomy & Physiology II | 4  | General Education Elective to reach 36 cr. min. **(if necessary)** |
| Upper Division BMS Electives (Select 12 credits)  | 13 |  |  |
| BIOL 3306 Introduction to Pathobiology**;** BIOL 3324/L Developmental Biology, Lab;BIOL 4415L Human Neurobiology LabBIOL 4430 Bioethics;BIOL 4432 Biochemistry;BIOL 4437 Experimental Biochemistry;BIOL 4443 Endocrinology;BIOL 4444/L Cell and Molecular Biology, Lab;BIOL 4451/L Immunology, Lab;BIOL 4453 Foundations of Neuroscience;BIOL 4454 Advanced Immunology;BIOL 4475 General Virology;BIOL 4481/4482 Ind. Problems; | BIOL 2280 or BIOL 4480 Mentored Research Alliance;CPH 4406 Epidemiology;CPH 4442 Environmental Health in Community Public Health;HPSS 3301/L Physiology of Exercise, Lab;PSCI 3301 Introduction to Pharmacology;HPSS 3302/L Biomechanics, Lab; PSCI 3368 Introduction to ToxicologyNTD 3340 Nutrition for Health ProfessionalsPSYC 3301 Abnormal Psychology PSYC 3352 Cognitive Neuroscience |  |  |
|  Total GE | 39 |
| Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/)  |
|  |  |
| **MAP Credit Summary** | **CR** |
| Major  | 68 |
| General Education  | 39 |
| Upper Division Free Electives to reach 36 credits | 0 |
| Free Electives to reach 120 credits | 13  |
|  TOTAL | 120 |
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| **Graduation Requirement Minimum Credit Checklist** | **Confirmed** |
|  | Minimum 36 cr. General Education Objectives (15 cr. AAS) |  Yes |
| Microbiology | 4 | Minimum 15 cr. Upper Division in Major (0 cr. Associate) |  | Yes |
| Either BIOL 2221/L Intro Micro or BIOL 2235/L General 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/L 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:* | 5/31/22 vs |
| *Registrar:*  |  |
| Consult catalog for BMS electives. |  |
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 Form Revised 9.10.2019