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| **Catalog Year 2019-2020**BS, Health Physics | ***(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 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 Writing and Rhetoric I | 3 | C- | GE | F, S, Su | Appropriate placement score |  |
| GE Objective 5: CHEM 1111 & 1111L Gen Chem I & Lab | 5 |  | GE | F,S, Su | MATH 1143 or 1147 or appropriate placement score |  |
| GE Objective 5: BIOL 1101 & 1101L General Biology I & Lab | 4 |  | GE | F,S, Su | MATH 1108 or appropriate. placement score | MATH 1108 |
| GE Objective 3: MATH 1170 Calculus I | 4 | C- | GE | F,S, Su | MATH 1144 or 1147 or appropriate placement score |  |
|  Total | 16 |  |  |  |  |  |
| Semester Two |
| GE Objective 1: ENGL 1102 Writing and Rhetoric II | 3 | C- | GE | F, S, Su | ENGL 1101 or equivalent |  |
| CHEM 1112 & 1112 L Gen. Chem II & Lab | 4 |  |  | F,S | CHEM 1111 & 1111L |  |
| MATH 1175 Calculus II | 4 | C- |  | F,S, Su | MATH 1170 |  |
| GE Objective 4 | 3 |  | GE |  |  |  |
| Free Electives | 1 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Three |
| PHYS 2211 & PHYS 2213 Engineering Physics I &Lab | 5 |  |  | F,S |  | MATH 1175 |
| MATH 2275 Calculus III | 4 |  |  | F,S | MATH 1175 |  |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F,S, Su |  |  |
| GE Objective 6 | 3 |  | GE |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Four |  |  |  |  |  |  |
| CHEM 1102 Introduction to Organic & Biochemistry | 3 |  |  | F,S | CHEM 1111 & 11111L or CHEM 1101 | CHEM 1103 |
| CHEM 1103 Introduction to Organic & Biochemistry Lab | 1 |  |  | F,S | CHEM 1101 or CHEM 1111 & 11111L | CHEM 1102 |
| PHYS 2212 & 2214 Engineering Physics II & Lab | 5 |  |  | F,S | PHYS 2211, PHYS 2213 |  |
| GE Objective 6 | 3 |  | GE |  |  |  |
| GE Objective 4 | 3 |  | GE |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Five |  |  |  |  |  |  |
| MATH 3350 Statistical Methods | 3 |  | UM | F,S | MATH 1170 |  |
| BIOL 3301 & 3301 L Anatomy & Physiology I & Lab | 4 |  | UM | F,S | BIOL 1101 & 1101L |  |
| GE Objective 7 : CS 1181 Intro Computer Science & Program | 3 |  | GE | F,S | MATH 1143 or 1147 or appropriate test score |  |
| HPHY 4431 Radiation Physics I | 3 |  | UM | F | Permission of instructor |  |
| Free Electives | 2 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Six |  |  |  |  |  |  |
| BIOL 3302 & 3302 L Anatomy & Physiology II | 4 |  | UM | F,S | BIOL 1101 & 1101L |  |
| ENGL 3307 Professional & Technical Writing | 3 |  | UM | F,S | ENGL 1102 |  |
| HPHY 4416 Intro to Nuclear Measurements | 3 |  | UM | S | CHEM 1111, PHYS 1111 &1113 OR PHYS 2211& 2213 |  |
| HPHY 4432 Radiation Physics II | 3 |  | UM | S | HPHY 4431 and permission of instructor |  |
| GE Objective 9 | 3 |  | GE |  |  |  |
|  Total | 16 |  |  |  |  |  |
| Semester Seven |  |  |  |  |  |  |
| NE 4451 Nuclear Seminar | 1 |  | UM | F,S | Senior standing or permission of instructor |  |
| HPHY 4433 External Dosimetry | 3 |  | UM | F | HPHY 4432 or permission of instructor |  |
| HPHY 4488 Advanced Radiobiology | 3 |  | UM | AF | Permission of instructor |  |
| HPHY 4455 Topics in Health Physics I | 2 |  | UM | F | HPHY 4432 or permission of instructor |  |
| Free Electives | 6 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Eight |  |  |  |  |  |  |
| HPHY 4434 Internal Dosimetry | 3 |  | UM | S | HPHY 4433 or permission of instructor |  |
| HPHY 4480 Health Physics Capstone  | 3 |  | UM | F,S | Permission of instructor |  |
| HPHY 4456 Topics in Health Physics II | 2 |  | UM | S | HPHY 4432 or permission of instructor |  |
| Free Electives | 5 |  |  |  |  |  |
|  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.)  |

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| BS, Health Physics |
| **2019-2020 Major Requirements** | **CR** | **2018-2019 GENERAL EDUCATION OBJECTIVES****Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9** | **36 cr. min** |
| **MAJOR REQUIREMENTS** | **66** | 1. Written English (6 cr. min) ENGL 1101 | 3 |
| BIOL 1101 & 1101L General Biology I & Lab (counted in Objective 5) |  ENGL 1102 | 3 |
| BIOL 3301 & 3301 L Anatomy & Physiology I & Lab | 4 | 2. Oral Communication (3 cr. min) COMM 1101 | 3 |
| BIOL 3302 & 3302 L Anatomy & Physiology II | 4 | 3. Mathematics (3 cr. min) MATH 1170 | 4 |
| CHEM 1102 Introduction to Organic & Biochemistry | 3 | 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** |
| CHEM 1103 Introduction to Organic & Biochemistry Lab | 1 |  |  |
| CHEM 1111 & 1111L General Chemistry I & Lab (counted in Objective 5) |  |  |
| CHEM 1112 & 1112 L General Chemistry II & Lab | 4 | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** |
| CS 1181 Intro Computer Science & Programming (counted in Objective 7) | BIOL 1101 and BIOL 1101L | 4 |
| ENGL 3307 Professional & Technical Writing | 3 | CEM 1111 and CHEM 1111L | 5 |
| HPHY 4416 Intro to Nuclear Measurements | 3 |  |  |
| HPHY 4431 Radiation Physics I | 3 | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** |
| HPHY 4432 Radiation Physics II | 3 |  |  |
| HPHY 4433 External Dosimetry | 3 |  |  |
| HPHY 4434 Internal Dosimetry | 3 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** |
| HPHY 4455 Topics in Health Physics I | 2 | 7. Critical Thinking | CS/INFO 1181 | 3 |
| HPHY 4456 Topics in Health Physics II | 2 | 8. Information Literacy  |
| HPHY 4480 Health Physics Capstone  | 3 | 9. Cultural Diversity **(1 course; 3 cr. min)** |
| HPHY 4488 Advanced Radiobiology | 3 |  |  |
| MATH 1170 Calculus I (counted in Objective 3) | General Education Elective to reach 36 cr. min. **(if necessary)** |
| MATH 1175 Calculus II | 4 |   |  |
| MATH 2275 Calculus III | 4 |  |  |
| MATH 3350 Statistical Methods | 3 |  Total GE | 40 |
| PHYS 2211 & 2213 Engineering Physics I & Lab | 5 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/)  *http://coursecat.isu.edu/undergraduate/programs/* |
| PHYS 2212 & 2214 Engineering Physics II & Lab | 5 |
| NE 4451 Nuclear Seminar | 1 |  |  |
|  |  | **MAP Credit Summary** | **CR** |
|  |  | Major  | 66 |
|  |  | General Education  | 40 |
|  |  | Upper Division Free Electives to reach 36 credits | 0 |
|  |  | Free Electives to reach 120 credits | 14 |
|  |  |  TOTAL | 120 |
|  |  |  |
|  |  | **Graduation Requirement Minimum Credit Checklist** | **Confirmed** |
|  |  | Minimum 36 cr. General Education Objectives (15 cr. AAS) | x |
|  |  | Minimum 15 cr. Upper Division in Major (0 cr. Associate) | x |
|  |  | Minimum 36 cr. Upper Division Overall (0 cr. Associate) |  | x |
|  |  | Minimum of 120 cr. Total (60 cr. Associate) |  | x |
|  |  |  |
|  |  | ***MAP Completion Status (for internal use only)*** |
| **Advising Notes** |  | *Date* |
|  | *Department:*  |  |
|  | *CAA or COT:* |  |
|  | *Registrar:*  |  |
|  | **Complete College American Momentum Year****Math and English course in first year-Specific GE MATH course identified****9 credits in the Major area in first year****15 credits each semester (or 30 in academic year)****Milestone courses** |
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 Form Revised 9.10.2019