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| **Catalog Year 2023-2024**B.S., Applied Mathematics  | ***(For internal use only)***[ ]  *No change*[ ]  *UCC proposal* |

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| **Course Subject and Title** | **Cr.**  | **Min.** **Grade** | **\*GE,** **UU or UM** | **\*\*Sem. Offered** | **Prerequisite** | **Co-Requisite** |
| Semester One |
| GE Objective 3: MATH 1170 Calculus I  | 4 |  | GE | F, S, Su | Math 1144 or Math 1147 |  |
| GE Objective 1: ENGL 1101 English Composition | 3 |  | GE | F, S, Su | Appropriate placement score |  |
| GE Objective 4: | 3 |  | GE | F, S, Su |  |  |
| GE Objective 6: | 3 |  | GE | F, S, Su |  |  |
| Free Electives | 1 |  |  |  |  |  |
|  Total | 14 |  |  |  |  |  |
| Semester Two |
| MATH 1175 Calculus II | 4 |  |  | F, S, Su | Math 1170 |  |
| MATH 2240 Linear Algebra | 3 |  |  | F, S, Su | Math 1170 |  |
| GE Objective 7: CS 1181 Intro to CS & Programming I | 3 |  | GE | F, S | Math 1143 or Math 1147 | Math 1143 or Math 1147 |
| GE Objective 1: ENGL 1102 Critical Reading & Writing | 3 |  | GE | F, S, Su | ENGL 1101 or (1101P) or equivalent  |  |
| GE Objective 4: | 3 |  | GE | F, S, Su |  |  |
|  Total | 16 |  |  |  |  |  |
| Semester Three |
| MATH 2275 Calculus III | 4 |  |  | F, S | Math 1175 |  |
| MATH 3310 Mathematical Modeling | 3 |  |  | D | Math 1175, and either CS1181 or ME 1165  |  |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F, S, Su |  |  |
| GE Objective 5: No lab | 3 |  | GE | F, S, Su |  |  |
| Free Electives | 2 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Four |
| MATH 3326 Elementary Analysis | 3 |  | UM | F, S | Math 1175 and either Math 2240 or Math 2287 |  |
| MATH 3360 Differential Equations | 3 |  | UM | F, S | Math 1175; MATH 2240 or Math 2275 recommended |  |
| GE Objective 6: | 3 |  | GE | F, S, Su |  |  |
| GE Objective 9:  | 3 |  | GE | F, S, Su |  |  |
| Free Electives | 3 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Five |
| Either MATH 4421 Advanced Engineering Mathematics  | 3 |  | UM | F | Math 3360 |  |
| or MATH 4465 Partial Differential Equations |  |  |  |  |  |
| MATH 4423 Introduction to Real Analysis | 3 |  | UM | F | Math 2240 and Math 3326 |  |
| GE Objective 5: w/lab | 4 |  | UM |  |  |  |
| Free Electives | 5 |  |  |  |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Six |
| MATH 3352 | 3 |  | UM |  | Math 1175 |  |
| Applied Mathematics Elective (see list) | 3 |  | UM |  | See Catalog |  |
| Free Electives | 9 |  | GE | F, S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Seven |
| MATH 4441 | 3 |  | UM |  | Math 2240, Math 3326, Math 3360 |  |
| Applied Mathematics Elective (see list) | 3 |  | UM | F | See Catalog |  |
| Free Electives | 9 |  |  |  |  |  |
|  Total  | 15 |  |  |  |  |  |
| Semester Eight  |
| Applied Mathematics Elective (see list) | 3 |  | UM |  | See Catalog |  |
| Upper Division Free Electives | 6 |  | UU |  |  |  |
| Free Electives  | 6 |  |  |  |  |  |
|  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.)  |

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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| **2023-2024 Major Requirements** | **CR** | **GENERAL EDUCATION OBJECTIVES****Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9** | **36 cr. min** |
| **MAJOR REQUIREMENTS** | **41** | 1. Written English (6 cr. min) ENGL 1101 | 3 |
| **Mathematics Core**  | 14 |  ENGL 1102 | 3 |
| MATH 1170 Calculus I (4 cr counted in Objective 3) | 2. Spoken English (3 cr. min) COMM 1101 | 3 |
| MATH 1175 Calculus II | 4 | 3. Mathematics (3 cr. min) MATH 1170 | 4 |
| MATH 2275 Calculus III | 4 | 4. Humanities, Fine Arts, Foreign Lang. **(2 courses; 2 categories; 6 cr. min)** |
| MATH 2240 Linear Algebra | 3 |  |  |
| MATH 3326 Elementary Analysis | 3 |  |  |
| CS 1181 Computer Science & Progrm. I^ (3 cr counted in Objective 7) | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** |
|  **Major Requirements** | **27** |  |  |
| MATH 3310 Mathematical Modeling | 3 |  |  |
| MATH 3352 Introduction to Probability | 3 |  |  |
| MATH 3360 Differential Equations | 3 | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** |
| MATH 4423 Introduction to Real Analysis I | 3 |  |  |
| MATH 4441 Introduction to Numerical Analysis I | 3 |  |  |
| ***Choose 1 of the following two courses:*** |  | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** |
| Either MATH 4421 Advanced Engineering Mathematics I | 3 | 7. Critical Thinking CS 1181  | 3 |
|  Or MATH 4465 Partial Differential Equations | 8. Information Literacy  |
| ***Choose 9 Upper Division credits from list below^^:*** | **9** | 9. Cultural Diversity **(1 course; 3 cr. min)** |
| MATH 3362 Introduction to Complex Analysis | 3 |  |  |
| MATH 4405 Numerical Linear Algebra | 3 | General Education Elective to reach 36 cr. min. **(if necessary)** |
| MATH 4422 Advanced Engineering Mathematics II | 3 |   |  |
| MATH 4424 Introduction to Real Analysis II | 3 |  **Total GE** | **38** |
| MATH 4442 Introduction to Numerical Analysis II | 3 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/) *http://coursecat.isu.edu/undergraduate/programs/* |
| MATH 4450 Mathematical Statistics I | 3 |
| MATH 4451 Mathematical Statistics II | 3 |  |
| MATH 4463 Topics in Applied Mathematics | 3 |
|  |  |
|  |  | **MAP Credit Summary** | **CR** |
|  |  | Major  | 41 |
|  |  | General Education  | 38 |
|  |  | Upper Division Free Electives to reach 36 credits | 6 |
|  |  | Free Electives to reach 120 credits | 35 |
|  |  |  TOTAL | 120 |
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|  |  | **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 |
|  |  |  |  |
| **Advising Notes** | ***MAP Completion Status (for internal use only)*** |
| Student must select additional Upper Division credits to reach 36 |  | *Date* |
| ^Two courses (ME 1165 and ME 2266) may be substituted for  | *Department:* |  |
| CS 1181. | *CAA or COT:* |  |
| ^^ With department approval, up to 3 of these credits may be  | *Registrar:* |  |
| completed by taking an Upper Division course in this or another | **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** |
| department. |
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|  |  Form Revised 9.10.2019 |

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