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| **Catalog Year 2022-2023**B.S., Mechanical Engineering | ***(For internal use only)***[ ]  *No change*[x]  *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 |  | GE | F, S, Su | Appropriate placement score |  |
| GE Objective 3: MATH 1170 Calculus I | 4 | C- | GE | F, S, Su | MATH 1144 or 1147 or appropriate test score |  |
| GE Objective 5: CHEM 1111 & 1111L Gen Chemistry I & Lab | 5 |  | GE | F, S, Su | MATH 1143 or 1147 or appropriate test score |  |
| GE Objective 4 | 3 |  | GE | F, S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Two |
| GE Objective 1: ENGL 1102 Writing and Rhetoric II | 3 | C- | GE | F, S, Su | ENGL 1101 or equivalent |  |
| MATH 1175 Calculus II | 4 | C- |  | F, S, Su | MATH 1170 |  |
| GE Objective 5: PHYS 2211 Engineering Physics I  | 4 |  | GE | F, S |  | MATH 1175 |
| ME 1165 Structured Programming | 2 | C- |  | F, S | MATH 1170 |  |
| ME 1105 Solid Modeling | 2 | C- |  | F, S | MATH 1147 (or 1143 & 1144) |  |
|  Total | 15 |  |  |  |  |  |
| Semester Three |
| MATH 2275 Calculus III | 4 |  |  | F, S | MATH 1175 |  |
| PHYS 2212 Engineering Physics II | 4 |  |  | F, S | PHYS 2211 |  |
| ME/CE 2210 Engineering Statics | 3 |  |  | F, S | ME/CE 1105, PHYS 2211, MATH 1175 |
| ECE 2205 Principles of Electrical Circuits | 3 |  |  | F | Math 1175, PHYS 2212 | Math 1175, PHYS 2212 |
| GE Objective 2: COMM 1101 Principles of Speech | 3 |  | GE | F, S, Su |  |  |
|  Total | 17 |  |  |  |  |  |
| Semester Four |  |  |  |  |  |  |
| MATH 3360 Differential Equations | 3 |  | UM | F, S | MATH 1175; MATH 2240 or MATH 2275 recommended |  |
| MATH 2240 Linear Algebra | 3 |  |  | F, S, Su | MATH 1170 |  |
| ME/CE 3350 Mechanics of Materials | 3 |  | UM | F, S | ME/CE 2210, PHYS 2211, ME/CE 1105, MATH 1175 |  |
| ME/CE 2220 Engineering Dynamics | 3 |  |  | F, S | ME/CE 2210, PHYS 2211, ME/CE 1105, MATH 1175 |  |
| GE Objective 4 | 3 |  | GE | F, S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Five |  |  |  |  |  |  |
| ME 3307 Thermodynamics | 3 |  | UM | F, S | ME 2220, MATH 2275 | MATH 2275 |
| ME 3320 Kinematics and Dynamics of Machinery | 3 |  | UM | F | ME 1165, ME 2220, MATH 2275, MATH 2240 | MATH 2275 |
| ME 3323 Machine Design | 3 |  | UM | F | ME/CE 3350, ME 3320, ME 3322 | ME 3320, ME 3322 |
| ME 3322 Mechanical Engineering Materials | 3 |  | UM | F, S | ME/CE 3350, ME/CE 2210, MATH 1175, CHEM 1111/L | ME/CE 3350 |
| GE Objective 7 or 8 | 3 |  | GE | F, S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Six |  |  |  |  |  |  |
| ME/CE 3341 Fluid Mechanics | 3 |  | UM | F, S | ME 2220, MATH 3360 |  |
| ME 4476 Heat Transfer | 3 |  | UM | S | ME 3307, ME/CE 3341 | ME/CE 3341 |
| ME 3325 Advanced Machine Design | 3 |  | UM | S | ME 3320, ME 3323 |  |
| CE 3360 Engineering Economics or CE 3361 (3cr) | 2-3 |  | UM | F, S | ME/CE 2210 or permission of instructor |  |
| ME 4406 Measurement System Lab | 1 |  | UM | S | MATH 3360, ECE 2205 |  |
| GE Objective 6 | 3 |  | GE | F, S, Su |  |  |
|  Total | 15 |  |  |  |  |  |
| Semester Seven |  |  |  |  |  |  |
| ME 4465 Thermal Fluid Systems Design | 3 |  | UM | F | ME 3307, ME/CE 3341, ME 4476 |  |
| ME 4443 Thermal Fluids Lab | 1 |  | UM | F | ME 3307**,** ME/CE 3341, ME 4476 |  |
| ME 4496 A Project Design I | 3 |  | UM | F | CE 3360 or CE 3361 | CE 3360 or CE 3361 |
| ME 4440 Vibration Analysis | 3 |  | UM | F | MATH 2275, MATH 3360, ME 3325 | ME 3325 |
| ME Elective (consult with faculty advisor) | 3 |  |  | F, S |  |  |
| GE Objective 6 | 3 |  | GE | F, S, Su |  |  |
|  Total | 16 |  |  |  |  |  |
| Semester Eight |  |  |  |  |  |  |
| ME 4496 B Project Design B | 3 |  | UM | S | ME 4496A |  |
| ME 4463 Mechanical Systems Design | 3 |  | UM | S | ME 3320, ME 3323, ME 3325, ME 4440 |  |
| ME Elective (consult with faculty advisor) | 3 |  |  | F, S |  |  |
| ME 4473 Mechanical Control Systems | 3 |  | UM | S | ECE 2205, ME 2220, ME 4440, PHYS 2212, MATH 3360 |  |
| 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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| B.S., Mechanical Engineering |
| **2022-2023 Major Requirements** | **CR** | **2021-2022 GENERAL EDUCATION OBJECTIVES****Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9** | **36 cr. min** |
| **MAJOR REQUIREMENTS** | **84-85** | 1. Written English (6 cr. min) ENGL 1101 | 3 |
| CHEM 1111 & 1111L Gen Chemistry I & Lab (included in Gen Ed Obj. 5) |  ENGL 1102 | 3 |
| MATH 1170 Calculus I (included in Gen Ed Obj. 3) | 2. Oral Communication (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 3360 Differential Equations | 3 |  |  |
| PHYS 2211 Engineering Physics I (included in Gen Ed Obj. 5) | 5. Natural Sciences **(2 lectures-different course prefixes, 1 lab; 7 cr. min)** |
| PHYS 2212 Engineering Physics II | 4 | CHEM 1111 General Chemistry | 4 |
| ME/CE 2210 Statics | 3 | CHEM 1111L General Chemistry Lab | 1 |
| ME/CE 3350 Mechanics of Materials | 3 | PHYS 2211 Engineering Physics I  | 4 |
| CE 3360 Engineering Economics or CE 3361 Engineering Econ and Mgt. | 2-3 | 6. Behavioral and Social Science **(2 courses-different prefixes; 6 cr. min)** |
| ECE 2205 Principles of Electrical Circuits | 3 |  |  |
| ME 1105 Solid Modeling | 2 |  |  |
| ME 1165 Structured Programming | 2 | One Course from EITHER Objective 7 OR 8 **(1course; 3 cr. min)** |
| ME/CE 2220 Engineering Dynamics | 3 | 7. Critical Thinking |  |  |
| ME 3307 Thermodynamics | 3 | 8. Information Literacy  |
| ME 3320 Kinematics and Dynamics of Machinery | 3 | 9. Cultural Diversity **(1 course; 3 cr. min)** |
| ME 3322 Mechanical Engineering Materials | 3 |  |  |
| ME 3323 Machine Design | 3 | General Education Elective to reach 36 cr. min. **(if necessary)** |
| ME 3325 Advanced Machine Design | 3 |   |  |
| ME/CE 3341 Fluid Mechanics | 3 |  |  |
| ME 4406 Measurement System Lab | 1 |  Total GE | 40 |
| ME 4440 Vibration Analysis | 3 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/)  *http://coursecat.isu.edu/undergraduate/programs/* |
| ME 4443 Thermal Fluids Lab | 1 |
| ME 4463 Mechanical Systems Design | 3 |  |  |
| ME 4465 Thermal Fluid Systems Design | 3 | **MAP Credit Summary** | **CR** |
| ME 4473 Mechanical Control Systems | 3 | Major  | 84-85 |
| ME 4476 Heat Transfer | 3 | General Education  | 40 |
| ME 4496 A Project Design I | 3 | Free Electives to reach 120 credits | 0 |
| ME 4496 B Project Design B | 3 |  TOTAL | 124-5 |
| ME Electives (consult with faculty advisor) | 6 |  |
|  |  | **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* |
|  |  |  |
|  | *CAA or COT:* |  |
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|  | **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 4.29.2022