

**Catalog Year 2018-2019**

AAS, Energy Systems – Mechanical Engineering Tech

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 |
| ESET 0100: Engineering Technology Orientation | 1 | C- |  | F,S |  |  |
| ESET 0100L: Engineering Technology Orientation Lab | 1 | C- |  | F,S |  |  |
| ESET 0121: Basic Electricity and Electronics | 4 | C- |  | F |  | ESET 0121L |
| ESET 0121L: Basic Electricity and Electronics Lab | 3 | C- |  | F |  | ESET 0121 |
| ESET 0123: Mechanical Power Transmission | 2 | C- |  | D |  | ESET 0123L |
| ESET 0123L: Mechanical Power Transmission Lab | 1 | C- |  | D |  | ESET 0123 |
| ESET 0125: Introduction to Structural Welding | 1 | C- |  | F |  |  |
| ESET 0140: Applied Technical Intermediate Algebra | 5 | C- |  | F | (Appropriate Placement Score) |  |
| ESET 0159: Internship Strategies | 1 | D- |  | F,S |  |  |
|  Total | **19** |  |  |  |  |  |
| Semester Two |
| GE Objective 1: ENGL 1101 English Composition | 3 | C- | GE |  |  |  |
| GE Objective 3: MATH 1153 or 1160 or 1170 | 4 | C- | GE |  | MATH 1108 or 1143 or 1144 |  |
| GE Objective 5: PHYS 1101 & Lab OR CHEM 1100 | 4 | C- | GE |  |  |  |
| ESET 0122: Electrical Systems and Motor Control Theory | 3 | C- |  | S | ESET 0121 | ESET 0122L |
| ESET 0122L: Electrical Systems and Motor Control Theory Lab | 1 | C- |  | S | ESET 0121L | ESET 0122 |
| ESET 0126: Introduction to Mechanical Drafting and CAD | 1 | C- |  | S |  |  |
| ESET 0127: Mechanical Power Transmission II | 2 | C- |  | S | ESET 0121, 0123, 0140 | ESET 0127L |
| ESET 0127L: Mechanical Power Transmission Lab II | 2 | C- |  | S | ESET 0121, 0123, 0140 | ESET 0127 |
|  Total | **20** |  |  |  |  |  |
| Semester Three |
| GE Objective 2: COMM 1101 Principles of Speech | 3 | C- | GE |  |  |  |
| ESET 0220: Thermal Cycles and Heat Transfer | 2 | C- |  | F | ESET 0120 or 0122 |  |
| ESET 0240: Pumps | 3 | C- |  | F | ESET 0127, 0127L | ESET 0240L |
| ESET 0240L: Pump Applications Lab | 3 | C- |  | F | ESET 0123, 0123L | ESET 0240 |
| ESET 0241: Valves and Piping | 2 | C- |  | F | ESET 0127, 0127L | ESET 0241L |
| ESET 0241L: Valves and Piping Applications Lab | 2 | C- |  | F | ESET 0127, 0127L | ESET 0241 |
| ESET 0242: Practical Process Measurements and Control | 2 | C- |  | F | ESET 0122 |  |
|  Total | **17** |  |  |  |  |  |
| Semester Four |
| GE Objective 6:  | 3 | C- | GE |  |  |  |
| ESET 0221: Boiler Reactor and Turbine Principles | 2 | C- |  | S | ESET 0102 or 0122 |  |
| ESET 0243: Hydraulic and Pneumatic Power | 2 | C- |  | D | ESET 0127, 0127L | ESET 0243L |
| ESET 0243L: Hydraulic and Pneumatic Power Lab | 2 | C- |  | D | ESET 0127, 0127L | ESET 0243 |
| ESET 0244: Rotating Equipment and Millwright Maintenance | 4 | C- |  | S | ESET 0127 | ESET 0244L |
| ESET 0244L: Rotating Equipment and Millwright Maintenance Lab | 3 | C- |  | S | ESET 0127 | ESET 0244 |
| ESET 0245: Fundamentals of Heat Exchangers | 2 | C- |  | S | ESET 0140, MATH 1108 |  |
| ESET 0246: Materials and Metallurgy | 2 | C- |  | S |  |  |
|  Total | **20** |  |  |  |  |  |
| \*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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| **2018-2019 Major Requirements** | **CR** | **GENERAL EDUCATION OBJECTIVES****\* Satisfy 1, 2, 3, 5 and 6**  | **15 Cr.****Min** |
| **Energy Sys – Mechanical, AAS - MAJOR REQUIREMENTS** | **59** | 1. Written English (6 cr. min) ENGL 1101 (or equivalent) | 3 |
| ESET 0100: Engineering Technology Orientation | 1 |   |  |
| ESET 0100L: Engineering Technology Orientation Lab  | 1 | 2. Spoken English (3 cr. min) COMM 1101 | 3 |
| ESET 0121: Basic Electricity and Electronics | 4 | 3. Mathematics (3 cr. min) MATH 1153 or MATH 1170 | 3 |
| ESET 0121L: Basic Electricity and Electronics Lab | 3 | 4. Humanities, Fine Arts, Foreign Lang. |
| ESET 0122: Electrical Systems and Motor Control Theory | 3 |  |  |
| ESET 0122L: Electrical Systems and Motor Control Theory Lab | 1 |  |  |
| ESET 0123: Mechanical Power Transmission | 2 | 5. Natural Sciences **(1 Course including a lab; 4 cr. min)**  |
| ESET 0123L: Mechanical Power Transmission Lab | 1 |  PHYS 1101 and 1101 Lab Elements of Physics OR | 4 |
| ESET 0125: Introduction to Structural Welding | 1 |  CHEM 1100 Architecture of Matter |  |
| ESET 0126: Introduction to Mechanical Drafting and CAD | 1 | 6. Behavioral and Social Science **(1 course; 3 cr. min)** |
| ESET 0127: Mechanical Power Transmission II | 2 |  | 3 |
| ESET 0127L: Mechanical Power Transmission Lab II | 2 |  |  |
| ESET 0140: Applied Technical Intermediate Algebra | 5 | **One Course from EITHER Objective 7 OR 8** |
| ESET 0220: Thermal Cycles and Heat Transfer | 2 | 7. Critical Thinking  |  |
| ESET 0221: Boiler Reactor and Turbine Principles | 2 | 8. Information Literacy  |
| ESET 0240: Pumps | 3 | 9. Cultural Diversity  |
| ESET 0240L: Pump Applications Laboratory | 3 |  |  |
| ESET 0241: Valves and Piping | 2 | General Education Elective to reach 15 cr. min.  |
| ESET 0241L: Valves and Piping Applications Lab | 2 |   |  |
| ESET 0242: Practical Process Measurements and Control | 2 |  **Total GE** | **16** |
| ESET 0243: Hydraulic and Pneumatic Power | 2 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/)  |
| ESET 0243L: Hydraulic and Pneumatic Power Lab | 2 |
| ESET 0244: Rotating Equipment and Millwright Maintenance | 4 |
| ESET 0244L: Rotating Equipment and Millwright Maint Lab | 3 | **MAP Credit Summary** | **CR** |
| ESET 0245: Fundamentals of Heat Exchangers | 2 | Major  | 59 |
| ESET 0246: Materials and Metallurgy | 2 | General Education  | 16 |
| TGE 0159: Internship Strategies | 1 | Free Electives to reach 60 | 0 |
|  |  |  TOTAL | 75 |
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|  |  | **Graduation Requirement Minimum Credit Checklist** | **Confirmed** |
|  |  | Minimum 15 cr. General Education Objectives (Associate) |  |
|  |  | Minimum 60 cr. Total (Associate) |  |  |
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| **Advising Notes** | ***MAP Completion Status (for internal use only)*** |
| Students must register concurrently for the lab course associated with |  | *Date* |
| Each theory course.  | *Department:*  |  |
|  | *CAA or COT:* | CZ, 12/717 |
|  | *Registrar:*  |  |
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 Form Revised 1.24.2018