

**Catalog Year 2018-2019**

AAS, Energy Systems – Nuclear Operations 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 |
| GE Objective 1: ENGL 1101 English Composition | 3 | C- | GE |  |  |  |
| 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 0140: Applied Technical Intermediate Algebra | 5 | C- |  | F | (Appropriate Placement Score) |  |
| ESET 0151: Nuclear Industry Fundamentals Concepts | 3 | C- |  | F |  | ESET 0151L |
| ESET 0151L: Nuclear Industry Fundamental Concepts Lab | 1 | C- |  | F |  | ESET 0151 |
|  Total | **21** |  |  |  |  |  |
| Semester Two |
| GE Objective 1: ENGL 1102 Critical Reading Writing | 3 | C- | GE |  | ENGL 1101 or equivalent |  |
| GE Objective 2: COMM 1101 Principles of Speech | 3 | C- | GE |  |  |  |
| GE Objective 5: PHYS 1101 & Lab  | 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 0152: Nuclear Careers and Information (1st) | 1 | C- |  | F,S |  |  |
| ESET 0153: Radiological Control Fundamentals | 3 | C- |  | S | ESET 0151, 0151L |  |
|  |  |  |  |  |  |  |
|  Total | **18** |  |  |  |  |  |
| Semester Three |
| GE Objective 5: CHEM 1111 and Lab | 5 | C- | GE |  |  |  |
| ESET 0152: Nuclear Careers and Information (2nd) | 1 | C- |  | F,S |  |  |
| ESET 0220: Thermal Cycles and Heat Transfer | 2 | C- |  | F | ESET 0120 or 0122 |  |
| ESET 0242: Practical Process Measurements and Control | 2 | C- |  | F | ESET 0122 |  |
| ESET 0248: Power Plant Drawings | 2 | C- |  | F | ESET 0151, 0151L |  |
| ESET 0249: Reactor Plant Materials  | 3 | C- |  | D | ESET 0151, 0151L |  |
| ESET 0252: Power Plant Components  | 2 | C- |  | D | ESET 0151, 0151L | ESET 0248 |
| ESET 0279: Conduct of Operations | 2 | C- |  | D | ESET 0151, 0151L |  |
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|  |  |  |  |  |  |  |
|  Total | **19** |  |  |  |  |  |
| Semester Four |
| GE Objective 3: MATH 1153 or MATH 1160 or MATH 1170 | 3 | C- | GE |  | MATH 1108, MATH 1143, MATH 1144 |  |
| GE Objective 4: TGE 1257: Applied Ethics in Technology | 3 | C- | GE |  |  |  |
| GE Objective 6:  | 3 | C- | GE |  |  |  |
| ESET 0152: Nuclear Careers and Information (3rd) | 1 | C- |  | F,S |  |  |
| ESET 0221: Boiler Reactor and Turbine Principles | 2 | C- |  | S | ESET 0102 or 0122 |  |
| ESET 0250: Radiation Detection and Protection | 2 | C- |  | D | ESET 0151, 0151L | ESET 0153 |
| ESET 0251: Reactor Theory Safety and Design | 4 | C- |  | S | ESET 0248, 0249, 0252, 0279 | ESET 0250 |
| ESET 0280: Capstone and Case Studies in Nuclear Engineering | 2 | C- |  | S | ESET 0153, 0220, 0242, 0248, 0249 | ESET 0250, 0251 |
|  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 – Nuclear, AAS - MAJOR REQUIREMENTS** | **51** | 1. Written English (6 cr. min) ENGL 1101 (or equivalent) | 3 |
| ESET 0100: Engineering Technology Orientation | 1 |  ENGL 1102  | 3 |
| 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, 1160 or 1170 | 3 |
| ESET 0121L: Basic Electricity and Electronics Lab | 3 | 4. Humanities, Fine Arts, Foreign Lang. **(1 course; 3cr min)** |
| ESET 0122: Electrical Systems and Motor Control Theory | 3 |  TGE 1257: Applied Ethics in Technology | 3 |
| ESET 0122L: Electrical Systems and Motor Control Theory Lab | 1 |  |  |
| ESET 0140: Applied Technical Intermediate Algebra | 5 | 5. Natural Sciences **(1 Course including a lab; 4 cr. min)**  |
| ESET 0151: Nuclear Industry Fundamentals Concepts | 3 |  PHYS 1101 and 1101 Lab Elements of Physics  | 4 |
| ESET 0151L: Nuclear Industry Fundamental Concepts Lab | 1 |  CHEM 1111 and 1111 Lab General Chemistry I  | 5 |
| ESET 0152: Nuclear Careers & Information (1 cr. x3 semesters) | 3 | 6. Behavioral and Social Science **(1 course; 3 cr. min)** |
| ESET 0153: Radiological Control Fundamentals | 3 |  | 3 |
| ESET 0220: Thermal Cycles and Heat Transfer | 2 |  |  |
| ESET 0221: Boiler Reactor and Turbine Principles | 2 | **One Course from EITHER Objective 7 OR 8** |
| ESET 0242: Practical Process Measurements and Control | 2 | 7. Critical Thinking  |  |
| ESET 0248: Power Plant Drawings | 2 | 8. Information Literacy  |
| ESET 0249: Reactor Plant Materials | 3 | 9. Cultural Diversity  |
| ESET 0250: Radiation Detection and Protection | 2 |  |  |
| ESET 0251: Reactor Theory Safety and Design | 4 | General Education Elective to reach 15 cr. min.  |
| ESET 0252: Power Plant Components | 2 |   |  |
| ESET 0279: Conduct of Operations | 2 |  **Total GE** | **27** |
| ESET 0280: Capstone and Case Studies in Nuclear Eng Tech | 2 | Undergraduate Catalog and GE Objectives by [Catalog Year](https://www.isu.edu/advising/academic-support/general-education/)  |
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|  |  | **MAP Credit Summary** | **CR** |
|  |  | Major  | 51 |
|  |  | General Education  | 27 |
|  |  | Free Electives to reach 60 | 0 |
|  |  |  TOTAL | 78 |
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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:* | TIM 07/26/2018 |
| MATH 1160 and 1170 have pre-requisite courses MATH 1143, 1144 | *Registrar:*  |  |
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 Form Revised 1.24.2018