## Associate of Applied Science: Energy Systems Nuclear Operations Technology

(2 Years)

### Program Objectives

1. Apply a fundamental knowledge of mathematics, sciences (e.g., physics, chemistry, and thermodynamics), and an understanding of the nuclear process while working in the nuclear industry.

2. Demonstrate critical thinking and analytical problem solving skills, with special emphasis on workplace, environmental, and safety concerns, to solve professional and technical challenges in the nuclear industry.

3. Exhibit an understanding and adherence to the professional, social and ethical standards of the nuclear industry.

4. Practice a commitment to be professionally and technically current with changing technologies in the nuclear industry through self-improvement and lifelong learning.

5. Demonstrate communication and teamwork skills in diverse and multidisciplinary teams, while striving for increasing responsibilities and positions of leadership in the nuclear industry.

Students must register concurrently for the lab course associated with each theory course.

### Code | Title | Credits
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**Required Courses:**
**ESET 0100** | Engineering Technology Orientation | 1
**ESET 0100L** | Engineering Technology Orientation Lab | 1
**ESET 0121** | Basic Electricity and Electronics | 4
**ESET 0121L** | Basic Electricity and Electronics Laboratory | 3
**ESET 0122** | Electrical Systems and Motor Control Theory | 3
**ESET 0122L** | Electrical Systems and Motor Control Theory Laboratory | 1
**ESET 0140** | Applied Technical Intermediate Algebra | 5
**ESET 0151** | Nuclear Industry Fundamental Concepts | 3
**ESET 0151L** | Nuclear Industry Fundamental Concepts Lab | 1
**ESET 0152** | Nuclear Careers and Information | 3
**ESET 0153** | Radiological Control Fundamentals | 3
**ESET 0220** | Thermal Cycles and Heat Transfer | 2
**ESET 0221** | Boiler Reactor and Turbine Principles | 2
**ESET 0242** | Practical Process Measurements and Control | 2
**ESET 0248** | Power Plant Drawings | 2
**ESET 0249** | Reactor Plant Materials | 3
**ESET 0250** | Radiation Detection and Protection | 2
**ESET 0251** | Reactor Theory Safety and Design | 4
**ESET 0252** | Power Plant Components | 2
**ESET 0279** | Conduct of Operations | 2

**ESET 0280** | Capstone and Case Studies in Nuclear Engineering Technology | 2

**General Education Objective 3: Complete one of the following** | 3-4
**MATH 1153** | Statistical Reasoning | 2
**MATH 1160** | Survey of Calculus | 2
**MATH 1170** | Calculus I | 2

**General Education courses** | 2

**Take one of the following:** | 3-5
**CHEM 1101** | Introduction to Chemistry | 2

**OR**
**CHEM 1111** | General Chemistry I | 2
& **1111L** | General Chemistry I Lab | 2

**COMM 1101** | Fundamentals of Oral Communication | 3

**ENGL 1101** | Writing and Rhetoric I | 2
**ENGL 1102** | Writing and Rhetoric II | 2

**PHYS 1101** | Elements of Physics | 4
& **1101L** | Elements of Physics Laboratory | 2

**TGE 1257** | Applied Ethics in Technology | 3

**General Education Objective 6** | 2

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**Total Credits** | 76-79

1. Must repeat 1-credit course a minimum of three times.
2. Contributes to a General Education requirement.

See General Education Requirements (minimum 15 credits) for A.A.S. Degree at the start of the College of Technology section of the catalog.