



# Course Outcome Summary

Required Program Core Course

**NUET 130**

**Nuclear Plant Systems 1**

## Course Information

Division	Applied Science and Engineering Technology
Contact Hours	60
Theory	45
Lab Hours	15
Total Credits	3.0

**Prerequisites:** NUET 100

## Course Description

This course will introduce the students to various types of electrical and mechanical drawings which are commonly used in nuclear power plants. These drawings will then be the fundamental tools used to introduce the students to a large array of the various systems in the plant. Students will come to understand the concepts of standby safety-systems, electrical systems and sources of emergency electrical power, the power productions systems such as Main Steam and Feedwater, and the electronic systems which provide indications and automated plant protection. The students will be challenged to understand many of the design attributes of these systems and to directly relate those attributes using the various system drawings. Certain significant operating experience issues will be introduced and the students will be challenged to relate these issues directly to the applicable plant systems and drawings. Schematic drawings of safety-significant motor-operated valves will be covered in detail as an example of component electrical controls. This course will also introduce the students to the practice of using drawings to support the planning of maintenance activities and methods of tagging energy sources to protect personnel during maintenance.

**This course is a required core course for students pursuing an AAS in Nuclear Engineering Technology**

## Program Outcomes Addressed by this Course:

Upon successful completion of this course, students should be able to:

- A. Describe and apply the culture of safety, continuous improvement, and peer checking
- B. Explain the requirement for documentation, formal procedures, and recordkeeping for nuclear related activities
- C. Describe the main systems in a nuclear power plant, and how they are used in power generation
- D. Identify typical power plant components and explain their function
- E. Describe different sources of radiation, their effects on organic matter, methods of detection, and shielding
- G. Recognize assumptions and limits of analysis to the application of technology, including social and ethical implications
- H. Recognize the need to engage in lifelong learning, and to perform research or conduct investigations to continuously upgrade knowledge and skills
- I. Communicate effectively, and work as part of a team



## Course Outcomes

In order to evidence success in this course, the students will be able to:

**1. Describe the overall design of the nuclear power plant in terms of the plant systems and their interaction**

*Applies To Program Outcome*

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**2. Interpret the various types of drawings used by nuclear plant operators and maintenance personnel**

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**3. State the purpose of a typical plant system and its importance to plant safety**

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**4. Explain safety system responses and capabilities relative to accident scenarios.**

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**5. Use drawings in the context of working on or operating the equipment in various plant systems.**

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**6. Describe typical hazards associated with working on or around various plant systems.**

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**7. Demonstrate the ability to determine adequate safety tagging boundaries for specified electrical and mechanical work scope.**

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Date Updated: Oct 10, 2019

By: MJ Dubois