Nuclear Plant Experience
Outline of Instruction

Course Information
Organization: Monroe County Community College, Applied Science and Engineering Technology
Development Date: 4/5/2010
Course Number: NUET 205
Instructional Area: Nuclear Engineering Technology
Potential Hours of Instruction: 45
Total Credits: 2

Description
This course is held in cooperation with DTE’s Fermi2 Nuclear Power Plant Training Center. The course consists of 40 hours of training activities held on-site at Fermi2. Training is conducted by instructors from the Nuclear Training Center. The emphasis is on Hands-on maintenance training with the same facilities used by plant personnel. Training takes place over five consecutive days, and includes a tour of the control room simulator, and an Instrumentation and Control walkdown in the plant. Five hours are planned for students to take the EEI Career Assessment and Diagnostic Instrument (CADI) test, including report out of results. This test gives feedback on how students compare to actual nuclear employees. This test assesses student career interest and is not part of the course grade.

Major Units
1. Human factors and administrative plant requirements, work orders
2. Rigging and Lifting Strategies
3. Valve maintenance
4. Motor and generator maintenance
5. Steam Components
6. Switch Gear, Relays and Motor Controls
7. Plant tours

Types of Instruction

<table>
<thead>
<tr>
<th>Instruction Type</th>
<th>Contact Hours</th>
<th>Credits</th>
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<tbody>
<tr>
<td>The methods of instruction for this course will include but will not be limited to, discussion, lecture, demonstration, in-class activity, lab experiments, and examination.</td>
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<td>2</td>
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Textbooks

None.

Prerequisites
NUET 100 and NUET 120 and NUET 130

Exit Learning Outcomes
Program Outcomes
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.
F. Identify and define problems in mathematic and scientific terms
G. Recognize assumptions and limits of analysis to the application of technology, including social and ethical implications.
H. Apply instruments to make measurements and analyze data from such measurements.
I. Recognize the need to engage in lifelong learning, and to perform research or conduct investigations to continuously upgrade knowledge and skills.
J. Communicate effectively, and work as part of a team.

General Education Outcomes
A. Apply mathematical approaches to the interpretation of numerical information
B. Apply mathematical approaches to the analysis of numerical information
C. Communicate ideas in writing using the rules of standard American English
D. Demonstrate an understanding of the process of scientific inquiry
E. Use computer technology to retrieve information
F. Use computer technology to communicate information

Course Outcomes
1. Disassemble and rebuild plant components such as valves
2. Perform maintenance activities on rotating equipment such as motors and generators.
3. Perform Foreign Material Exclusion, set Tagging Boundaries, and identify Hazards during maintenance activities
4. Apply lifting and rigging techniques to equipment.
5. Follow detailed instruction steps in maintenance work orders.
6. Locate plant components from plant drawings
7. Perform work as a member of a maintenance team.