



MONROE COUNTY
COMMUNITY COLLEGE

Course Outcome Summary

Required Program Core Course

NUET 220

Power Plant Components

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 presents the fundamental and specific details of power plant components. Course content will include component types and characteristics, principles of operation, failure mechanisms, and how they relate to a system. Specific components discussed are compressors, diesel engines, heat exchangers, pumps, strainers, filters, turbines, valves, switchgear, transformers, circuit breakers, motors, relays, generators, and valve actuators. Maintenance activities such as component tagging, disassembly, troubleshooting, lubrication, reassembly, and testing are also covered.

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
- H. Recognize the need to engage in lifelong learning, and to perform research or conduct investigations to continuously upgrade knowledge and skills



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Course Outcomes

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

1. Describe the theory, construction, application, and maintenance of air compressors and HVAC.

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2. Describe the theory, construction, application, and maintenance of heat exchangers.

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3. Describe the theory, construction, application, and maintenance of centrifugal and positive displacement pumps.

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4. Describe the theory, construction, application, and maintenance of strainers, filters and steam system components.

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5. Describe the theory, construction, application, and maintenance of steam turbines.

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6. Describe the theory, construction, application, and maintenance of various types of valves (gate, butterfly, relief, safety, globe, ball, needle, etc) and Valve actuators.

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7. Describe the theory, construction, application, and maintenance of motors and generators.

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8. Describe the theory, construction, application, and maintenance of diesel generators, UPS, switchgear, and motor control centers.

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9. Describe the theory, construction, application, and maintenance of circuit breakers, transformers, cables, and relays.

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10. Describe the theory, construction, application, and maintenance of boilers, fire barriers, and heaters.

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11. Describe and demonstrate/perform the proper use of various pieces of test equipment (dial calipers, meters, and micrometers).

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12. Explain and demonstrate component tagging, hazards, disassembly, troubleshooting, maintenance, reassembly, and testing.

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13. Describe limitations and precautions around maintenance activities (i.e. Foreign Material Exclusion, tagging boundaries, daisy chains, adjacent hazards, common power).

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Date Updated: October 10, 2019

By: MJ Dubois