

EN 138

Elementary 4th Class Power Engineering Lab

4 Credits

Instructor: Rob Collins; Reg Lee
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Original Developer: Kevin Earle

Current Developer: Robert Collins

Reviewer: Reg Lee

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EN 138 Version: 2



Elementary 4th Class Power Engineering Lab

Calendar Description

This course is about the safe and efficient operation of power boilers and auxiliary equipment.

Rationale

This course is mandatory for ABSA certification in conjunction with the Heavy Oil Operations Technician or Heavy Oil Power Engineering program. EN 138 gives students hands on opportunity to become familiar with the care and control of a boiler and associated equipment.

Prerequisites

None

Co-Requisites

EN 110 and EN 114

Course Learning Outcomes

Upon successful completion of this course, students will be able to

1. evaluate a worksite from a safe working perspective.
2. perform water testing and water treatment for boilers.
3. operate a deaerator.
4. prepare and operate a boiler feed water system.
5. prepare and operate a low pressure boiler.
6. prepare and operate a plant auxiliary systems.
7. prepare and operate a high pressure boiler.
8. prepare and operate a high pressure steam header.
9. prepare and operate a steam turbine driven, electric generator.

Resource Materials

CSA B51 and B52

ASME Academic Extract Volume 1 and Volume 2

PanGlobal academic supplement

Conduct of Course

This course is 65 hours of lab – 13, 5 hour labs.

This course is taught in our two power engineering labs.

The emphasis is hands on practice and application of power engineering principles.

Evaluation Procedures

This course is a pass or fail course.

Grade Equivalents and Course Pass Requirements

The course grade awarded for this course is recorded as a "P" for pass or an "F" for fail.

Attendance

Attendance is recorded at each session. Students must maintain a 100% attendance record in this course.

Course Units/Topics

1. Work site safety
2. Water treatment
3. Deaerators
4. Boiler feed water system operation
5. Low pressure boiler operation
6. Plant auxiliary system operation
7. High pressure boiler operation
8. High pressure steam header operation
9. Steam turbine driven electric generator operation.



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