



MASTER COURSE OUTLINE

Prepared By: Bill Autry

Date: May 2014

COURSE TITLE

Introduction to Industrial Boiler Technology

GENERAL COURSE INFORMATION

Dept.: IST

Course Num: 136

(Formerly:)

CIP Code: 47.0303

Intent Code: 21

Program Code: 768

Credits: 5

Total Contact Hrs Per Qtr.: 77

Lecture Hrs: 33

Lab Hrs: 44

Other Hrs:

Distribution Designation:

COURSE DESCRIPTION (as it will appear in the catalog)

This course involves the fundamental principles of steam generation, boiler designs, components, operation, water treatment, safety procedures and related steam generation equipment.

PREREQUISITES

IST107 or Instructor Permission

TEXTBOOK GUIDELINES

Appropriate textbook as determined by faculty (Example: *High Pressure Boilers*, by Steingress, Frost & Walker)

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.

1. Explain the basic principals involved in boiler & steam system operations
2. Identify various boiler & steam system components, their respective applications, and functions
3. Observe the appropriate safety precautions when working with boiler or steam charged equipment
4. Troubleshoot common malfunctions
5. Use proper testing procedures
6. Read and understand pertinent schematic drawings and data tables

INSTITUTIONAL OUTCOMES

COURSE CONTENT OUTLINE

- 1) Hydronic Systems
- 2) Boiler Design
- 3) System Components and Boiler Trim
- 4) Combustion Principals and Fuel burning Equipment
- 5) Draft
- 6) Boiler Operation, Controls & Instrumentation
- 7) Boiler Water Treatment
- 8) Boiler Codes

9) Maintenance & Troubleshooting Procedures

DEPARTMENTAL GUIDELINES *(optional)*

DIVISION CHAIR APPROVAL

DATE