Faculty is required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. RNEW COURSE NUMBER: 1110

NUMBER OF CREDITS: 1

COURSE TITLE: Boiler Systems

CATALOG DESCRIPTION: Covers fuel combustion principles, steam boiler types and their components. Students will gain an understanding of the equipment it's operation and maintenance to ensure safe and efficient procedures that are in line with regulations and codes.

AUDIENCE: This course is designed for any individual that would like to increase their knowledge about low pressure and high pressure boiler operations.

FULFILLS MN TRANSFER CURRICULUM AREA(S) 
(Leave blank if not applicable)

Area: by meeting the following competencies:
Area: by meeting the following competencies:
Area: by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: none

LENGTH OF COURSE: 1 semester

THIS COURSE IS USUALLY OFFERED:
Every other year [ ] fall X spring [ ] summer [ ] undetermined [ ]

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. Increase student knowledge basic boiler systems.
   b. Increase student knowledge about boiler fittings and functions.
   c. Increase student knowledge about the different types of heat and heat transfer in boiler systems.

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. Written explanation of chapter topics
   b. Applying the learned course materials in an academic and industrial setting

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Interactive participation in on-line classroom discussion
   b. Written skills development will be reinforced through short-answer study guides, reports, and electronic communications
4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. Respectful participation in on-line classroom discussions
   b. Respectful electronic and verbal communications

TOPICS TO BE COVERED: Boiler fittings, feedwater systems, steam systems, fuel systems, draft systems, boiler water treatment, boiler operations procedures, hot water heating systems, cooling systems, boiler operation safety, and boiler licensing.

LIST OF EXPECTED COURSE OUTCOMES: Upon successful completion of this course, students will be able to do the following:
   a. describe the operating principles and functions of boiler fittings
   b. identify feedwater system accessories and describe their functions
   c. identify steam system accessories and describe their functions
   d. identify fuel system accessories and describe their functions
   e. describe draft and draft systems used in boiler operation
   f. describe boiler water conditions that can affect boiler operation and efficiency
   g. identify routine procedures commonly followed when taking over a shift
   h. identify safety practices and procedures for boiler fittings, systems, and operations.

LEARNING/TEACHING TECHNIQUES used in the course are:
   - Collaborative Learning
   - Student Presentations
   - Creative Projects
   - Lecture
   - Demonstrations
   - Lab
   - Problem Solving
   - Interactive Lectures
   - Individual Coaching
   - Films/Videos/Slides
   - Other (describe below)

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
   - Reading
   - Oral Presentations
   - Textbook Problems
   - Group Problems
   - Other (describe below)
   - Tests
   - Worksheets
   - Papers
   - Term Paper
   - Individual Projects
   - Collaborative Projects
   - Portfolio

EXPECTED STUDENT LEARNING OUTCOMES: Upon successful completion of this course, students will:
   a. understand the working principles of boiler operations.
   b. be able to identify and describe safety procedures associated with boiler systems, fittings, and accessories.
   c. be able to describe troubleshooting procedures with regard to boiler operation
   d. describe procedures and common practices when taking over a shift.
Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

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