Faculty members are 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 Lecture: 1 Lab: 0 OJT 0

<table>
<thead>
<tr>
<th>Course Title:</th>
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<td>Boiler Systems</td>
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<th>Catalog Description:</th>
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<td>Boiler Systems covers fuel combustion principles, steam boiler types and their components. Students will gain an understanding of the equipment, its operation and maintenance to ensure safe and efficient procedures that are in line with regulations and codes.</td>
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<tr>
<th>Prerequisites or Necessary Entry Skills/Knowledge:</th>
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<td>None</td>
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FULFILLS MN TRANSFER CURRICULUM AREA(S)

Goal 1: Communication: _____ by meeting the following competencies:

Goal 2: Critical Thinking: _____ by meeting the following competencies:

Goal 3: Natural Sciences: _____ by meeting the following competencies:

Goal 4: Mathematics/Logical Reasoning: _____ by meeting the following competencies:

Goal 5: History and the Social and Behavioral Sciences: _____ by meeting the following competencies:

Goal 6: The Humanities and Fine Arts: _____ by meeting the following competencies:

Goal 7: Human Diversity: _____ by meeting the following competencies:

Goal 8: Global Perspective: _____ by meeting the following competencies:

Goal 9: Ethical and Civic Responsibility: _____ by meeting the following competencies:

Goal 10: People and the Environment: _____ by meeting the following competencies:
### 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
- Boiler licensing.

### Student Learning Outcomes
1. Describe the operating principles and functions of boiler fittings.
2. Identify feedwater system accessories and describe their functions.
3. Identify steam system accessories and describe their functions.
4. Identify fuel system accessories and describe their functions.
5. Describe draft and draft systems used in boiler operation.
6. Describe boiler water conditions that can affect boiler operation and efficiency.
7. Identify routine procedures commonly followed when taking over a shift.
8. Identify safety practices and procedures for boiler fittings, systems and operations.

### Is this course part of a transfer pathway:  Yes [ ]  No [x]

Revised Date: January 2021