

Course discipline/number/title: FST 1500: Boiler Theory**A. CATALOG DESCRIPTION**

1. **Credits:** 4
2. **Hours/Week:** 4
3. **Prerequisites (Course discipline/number):** Enrolled in the FAST program or instructor permission
4. **Other requirements:** None
5. **MnTC Goals (if any):** NA

B. COURSE DESCRIPTION: This course covers the theory and proper operations of Low- and High-pressure Boilers to include steam turbines and steam engine operations. Topics will include boiler types, designs, uses, steam systems, fittings, and accessories.**C. DATE LAST REVISED (Month, year):** March, 2025**D. OUTLINE OF MAJOR CONTENT AREAS:**

1. Types, Designs, Construction and uses of Boilers
2. Boiler systems
3. Boiler Systems Fittings and Accessories
4. Boiler Operations, Maintenance, Testing, Safety and Troubleshooting

E. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Identify different Boiler types and uses.
2. Describe the different Steam Systems and Appurtenances.
3. Identify and describe Boiler Fittings and Accessories.
4. Describe Water treatment procedures.
5. Describe the water/steam/condensate cycle.
6. Identify different steam traps and their locations.
7. Describe Fuel combustion and EPA Regulations.
8. Describe Safe Boiler Room/Power Plant Operations and Procedures.
9. Identify and Describe PPE care and use.

F. LEARNING OUTCOMES (MNTC): NA**G. METHODS FOR EVALUATION OF STUDENT LEARNING:** Methods may include but are not limited to:

1. Class Worksheets
2. Mid-Term Exam
3. Final Exam

H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.**I. SPECIAL INFORMATION (if any):** None