

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. RNEW

COURSE NUMBER: 1175

NUMBER OF CREDITS: 2

Lecture: 2 Lab: 0 OJT: 0

Course Title:
Industrial Water Treatment

Catalog Description:
Industrial Water Treatment covers the basic understanding of primary water treatment systems and chlorination. Students will be able to describe problems that can be caused by impurities in the water and explain how they can be removed physically and chemically. This course will also familiarize students with the basic concepts of treating industrial wastewater so it can be reused or discharged into the environment.

Prerequisites or Necessary Entry Skills/Knowledge:
None

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

- ☐ 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
Chemistry of water
Scale
Corrosion
Microbial fouling
Water treatment methods
Steam generation and condensation
Boiler systems
Water cooling systems

Wastewater treatment systems
Basic analytical procedures
Monitoring and control systems
Chemicals and safety

Student Learning Outcomes

Describe the chemical and physical properties associated with water.

Describe the effects that scale, corrosion and microbial fouling can have on water treatment systems.

Explain the role of steam generation and cooling systems in water treatment programs.

Identify and describe the social, economic, and environmental benefits of proper industrial water treatment.

Is this course part of a transfer pathway: Yes ☐ No ☒

**If yes, please list the competencies below*

Revised Date: 3/29/2022