

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. ELWT

COURSE NUMBER: 1100

NUMBER OF CREDITS: 3

Lecture: 3 Lab: 0 OJT: 0

Course Title:

Wind Energy Fundamentals

Catalog Description:

Wind Energy Fundamentals introduces the student to turbine designs, types of development, current status of, and the evolution of current models and sizes offered by existing companies, the operational experience, track record, number of turbines in operation that will be evaluated, and discuss the economic, environmental, and political issues according with American Wind Energy Association (AWEA).

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

Past and future of wind energy

Effects of terrain on wind

Types of wind energy turbines

Wind turbine layouts and issues facing wind energy

Wind reliability

Discuss systems of wind energy and how wind works with HWAT & VWAT

Identify wind turbine parts

Student Learning Outcomes
Examine how wind works in its reliability.
Explain the past and future of wind turbines.
Identify wind turbine parts and where they are located.
Illustrate the different turbine designs, types, and developments as well as their current status.
Discuss the evolution of current wind turbine models and sizes offered by existing companies.
Examine the operational track records, number of turbines in operation, and durability.
Explain the economic, environmental, and political issues associated with wind energy.
Identify safety issues related to the wind energy field.
Discuss OSHA's view on the wind energy industry.
Discuss what AWEA is about and how it helps the wind energy field.

Is this course part of a transfer pathway: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

*If yes, please list the competencies below