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.  ___ELWT_____             COURSE NUMBER:  1100_____

NUMBER OF CREDITS:  ___3______   Lecture:  ___3______ Lab:  ___0_____

Course Title:
Wind Energy Fundamentals

Catalog Description:
Introduce 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 to American Wind Energy Association (AWEA).

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:

Prerequisites or Necessary Entry Skills/Knowledge:
None
Topics to be Covered (General)

- 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 ☐  No ☒

*If yes, please list the competencies below

Revised 8/19