

**Fond du Lac Tribal and Community College**  
**COURSE OUTLINE FORM**

**Updated 9/23/14**

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

**1. Prepared by:** \_\_\_\_\_

**2. Date submitted:** \_\_\_\_\_

3. Date approved: 04/28/06 Date revised 09/23/14

**4. Department/discipline:** Electric Utility Technicians

**5. Department(s) endorsement(s):** \_\_\_\_\_

**(Signatures of the person(s) providing the endorsement are required.)**

6. Course Title: Wind Energy Systems

Abbreviated course title (25 characters or less): \_\_\_\_\_

7. Course Designator: EUT 8. Course Level: 1045 9. 2XXX

10. Number of Credits: Lecture 2 Lab 1

11. Control Number (on site) 20 Control Number (online) \_\_\_\_\_

12. Catalog/Course description:

Wind energy systems for the generation of electricity, for home use and for business, will be covered in theory and practice with emphasis on covering practical implementation measures. Course work will cover the site and the turbine fundamentals with the student preparing a system design proposal using actual data from current wind systems available. The class includes online and classroom learning opportunities with material from experts in the small wind field.

13. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s):

Co-requisite:

14. **Course Materials** (Recommended course materials and resources. List all that apply, e.g.

Textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

Wind Power by Paul Gipe

Appropriate text, videos, and other resources will be selected to provide up-to-date content.

Texts to be determined yearly on the basis of content and availability and will be listed on the syllabus.

15. **Course Content** (Provide an outline of major topics covered in course)

- I. Theory and Fundamentals of Wind Energy Systems.
- II. Annual Energy Output
- III. Site Assessment.
- IV. Design Practices
- V. Towers
- VI. Installation Procedures.

- VII. Interconnection
- VIII. Commissioning, Servicing, and Maintenance.
- IX. Economics

**16. Learning Goals, Outcomes, and Assessment**

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Upon completion of this course the student will be able to:

- 1. Obtain wind data for a proposed wind site. (A)
- 2. Calculate the annual energy output for the proposed site. (A, C)
- 3. Identify tower types with cost and installation needs. (A, B)
- 4. Demonstrate knowledge of inverters and interconnection methods. (A, B, C)

**17. Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See [www.mntransfer.org](http://www.mntransfer.org)

Goal Area(s): \_\_\_\_\_

Goal and Outcomes: