Course Title: Wind Turbine Hydraulics
Semester Course Prefix and Number: WET 2277
Old Quarter Course Prefix and Number:

Submitted By: Dan Janisch
Approval Date: December 2012
Revision Date: Oct 2012

Number of Credits: 3
Semester(s) Offered: Spring
Second Year
Class Size: 25

Number of Lecture Credits: 1
Number of Lab Credits: 2
Number of Lab Hours: 4
Number of Studio/Demonstration/Internship Credits:

Catalog Description:
This course is intended expose students to hydraulic systems associated with wind turbine control. The main purpose of this course will be to learn how to recognize the elements of a hydraulic system and how to blend your knowledge of the individual components into a comprehensive knowledge of the entire system and to be able to troubleshoot systems in a wind turbine. Students will train on hydraulic trainers and in a working wind turbine.

Prerequisites and/or recommended entry skills/knowledge:
Course Prerequisite(s): First Year of Wind Program
Reading Prerequisite: College Level Reading
Composition Prerequisite: College Level Writing
Mathematics Prerequisite: First Year of Wind Program

Career Programs and Transfer Majors Accessing this Course:
Wind Energy Technology, EIAT and IT students with instructor approval.

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:
(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer’s approval are required.)

0. X None
1. _____ Communications
2. _____ Critical Thinking
3. _____ Natural Sciences
4. _____ Mathematical/Logical Reasoning
5. _____ History and the Social and Behavioral Sciences
6. _____ The Humanities and Fine Arts
7. _____ Human Diversity
8. _____ Global Perspectives
9. _____ Ethical and Civic Responsibility
10. _____ People and the Environment
Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

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

- Understand and perform necessary math functions associated with hydraulics.
- Identify components such as pump power sources, actuators, control valves, conductors and connectors, hydraulic fluid, fluid storage equipment, and conditioning equipment.
- Explain circuit and system diagrams.
- Identify hydraulic symbols.
- Explain installation safety.
- Identify maintenance requirements.
- Identify troubleshooting tools.
- Identify pump problems.
- Perform routine maintenance activities.

Student Assessment Methods:
Written tests and quizzes. Report writing. Lab and outside of class assignments.

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):

Email and Moodle. Guest speakers as applicable.

Outline or Statement of Major Course Content:

Understand and troubleshooting of wind turbine hydraulic systems.

Additional Special Information: (special fees, directives on hazardous materials, etc.)

None.

Transfer Information: (Please list colleges/majors that accept this course in transfer.)

Approvals:

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Distribution: Original – Administrative Office
Copies: Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records
Revised: May 2009