

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

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

Negotiated by AASC on:
(date)

Number of Lecture Credits: 1

Number of Lab Credits: 2 **Number of Lab Hours:** 4

Number of Studio/Demonstration/Internship Credits:

Course Purpose Code:

0 – Developmental Courses

1 – Non-transferable

2 – Technical course related to career programs

3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)

4 – Other college course not considered a part of MNTC (e.g. computer science, health, physical education)

5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.

9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

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. 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:

Body	Representative Signatures	Date
Curriculum Committee		
Faculty Association		
Academic Affairs Standards Committee		
Chief Academic Officer		

Distribution: Original – Administrative Office

Copies: Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records

Revised: May 2009