

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Wind Turbine Drive Components
Semester Course Prefix and Number: WET 2276
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 to introduce students to the various components that comprise a wind turbine drive train. Students will learn how to install, operate, and maintain drive components both in the lab and in our working wind turbine. Students will also work with blueprints and measurement tools used to inspect and align drive train components.

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.)

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| 0. <input checked="" type="checkbox"/> None | 6. <input type="checkbox"/> The Humanities and Fine Arts |
| 1. <input type="checkbox"/> Communications | 7. <input type="checkbox"/> Human Diversity |
| 2. <input type="checkbox"/> Critical Thinking | 8. <input type="checkbox"/> Global Perspectives |
| 3. <input type="checkbox"/> Natural Sciences | 9. <input type="checkbox"/> Ethical and Civic Responsibility |
| 4. <input type="checkbox"/> Mathematical/Logical Reasoning | 10. <input type="checkbox"/> People and the Environment |
| 5. <input type="checkbox"/> History and the Social and Behavioral Sciences | |

Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

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

- Perform LOTO for safety prior to maintaining the equipment.
- Identify troubleshooting skills
- Use test equipment
- Replace bearings
- Check tolerances
- Identify and install couplings
- Define gear terminology and compound gearing
- Repair gearing
- Troubleshoot gear problems
- Maintain inspection equipment records
- Align drive train components.
- Analyze drive train components using a typical condition based monitoring system.

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 drive train components.

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