MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title:	**Introduction to Wind Energy**	**Submitted By:**	**Staff**
Semester Course Prefix and Number:	**WET 1220**	**Approval Date:**	**May 2009**
Old Quarter Course Prefix and Number:		**Revision Date:**	

Number of Credits:	**3**	**Number of Lecture Credits:**	**3**
Semester(s) Offered: **Fall**		**Number of Lab Credits:**	**Number of Lab Hours:**
Class Size: **24**		**Number of Studio/Demonstration/Internship Credits:**	
Negotiated by AASC on: (date)			

Course Purpose Code:

_____ **0 –** Developmental Courses
_____ **1 –** Non-transferable, General Education
__X__ **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 general education (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 will introduce students to wind energy conversion systems. Topics will include the history and present status of the wind power generation industry, scale, and wind turbine terminology and components. The students will also be introduced to the different aspects of the wind power generation industry including manufacturing, modeling, project development, logistics, construction, operations, and maintenance.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s): None
Reading Prerequisite:
Composition Prerequisite:
Mathematics Prerequisite:

Career Programs and Transfer Majors Accessing this Course:

Wind Energy Technology

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:

- Demonstrate a dedication to the educational process through active participation.
- Comprehend the wind turbine energy conversion process
- Identify the major wind turbine components
- Comprehend the history and present status of the wind power generation industry.
- Differentiate between the various types of wind energy conversion systems.
- Demonstrate knowledge of the various tasks involved in a wind power project.

Student Assessment Methods:

Written assignments and tests.

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

PowerPoint, Web based research, Online delivery

Outline or Statement of Major Course Content:

- Examine energy conversion
  - Traditional
  - Alternative – Wind
  - Wind driven systems comparison
- Examine system components
  - Tower
  - Rotor
  - Drive train
  - Generator
  - Controls
- Examine the past, present and future of wind power generation
- Explore wind power project logistics from equipment manufacture through commissioning

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

None

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

None

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, Student Services, Learning Center, Library
Revised: October 2006