METR 4553/5553

Climate and Renewable Energy

11:30–12:45 TR, Room 5600 NWC

Spring 2011

Instructor	Dr. Mark Morrissey	Dr. Susan Postawko
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Office hours	Tues/Thurs 1:30-2:30	Tues/Thurs. 10-11am
	Or by appointment	Or by appointment

Course description:
This course examines the science and technical aspects of solar, wind, hydro, and biomass power systems. Emphasis will be placed on the key role of climate in determining where each of these systems is most likely to provide feasible alternatives to energy generated by fossil fuels.

Recommended Textbook: "Renewable Energy", Godfrey Boyle, Oxford University Press, 2004

Course web site: Can be accessed on Desire2Learn @ http://learn.ou.edu (log on using your 4+4 ID)

Tentative topics:

Date	Topic	Text Chapter
Week 1	Intro to course; Energy consumption	Chapter 1
Week 2	Fundamental energy concepts	Chapter 1
Week 3	Fundamental energy concepts	Chapter 1
Week 4	Solar energy climatology	Chapter 2
Week 5	Solar thermal energy	Chapter 2
Week 6	Solar photovoltaics	Chapter 3
Week 7	**EXAM 1** Bioenergy	**Chapters 1 – 3** Chapter 4
Week 8	Biofuels	Chapter 4
Week 9	**SPRING BREAK - March 12-20**	
Week 10	Biofuels Wind Energy	Chapter 4 Chapter 7
Week 11	Wind Energy Intro to hydroelectricity	Chapter 7 Chapter 5
Week 12	Environmental considerations of hydroelectric dams	Chapter 5
Week 13	Climate change and renewable energy	Chapter 10
Week 14	Societal considerations of alternative energy **EXAM 2**	Chapter 10 **Chapters 4, 5, 7, 10**

Week 15	Environmental Tech Grad student presentations	**TERM PROJECTS DUE APRIL 28**[th]
Week 16	Grad student presentations Grad student presentations	

Grading:
2 hourly exams – 25% each
Homework – 20%
Term project – 30%

Term Project: For your term paper, you should focus on, and research *extensively*, a topic that will be selected by you and approved by us. Use existing literature, or newly collected data. Term-paper and presentation requirements for those enrolled in the graduate levels differ *significantly* from those enrolled in the undergraduate levels; we will provide detailed instructions on these requirements soon.

A Note on Research: Please note that we expect your research on course projects to be extensive, given the level of this course. Searching web sources for information is fine for starters, but we expect you to go well beyond the web—i.e., to the professional literature (real books and journals). ALL sources, including web sources, must be cited in your list of references—using uncited material is a form of plagiarism.

Important policies:
Reasonable Accommodation: The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodation in this course are requested to speak with me as early in the semester as possible. Students with disabilities **must** be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 325-3852 or TDD only 325-4173.

Academic Misconduct: All provisions of the Norman Campus Academic Misconduct Code shall apply in cases of academic dishonesty. Any violation of the Academic Misconduct Code will result in your removal from this course, and a grade of F will be recorded for the course. Academic misconduct is defined as "any act that improperly affects the evaluation of a student's academic performance or achievement." At the University of Oklahoma, academic integrity is expected from each student. Misconduct such as plagiarism, fabrication, and fraud, as well as attempting to commit such acts or assisting others in doing so, will not be tolerated. Students are responsible for knowing the OU Academic Conduct Code, which can be found at http://www.ou.edu/studentcode and http://www.ou.edu/provost/integrity