



METR 4553/5553

# Climate and Renewable Energy

Spring 2014

**Instructor** Dr. Susan Postawko  
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**Office hours** 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.

Course web site: Accessed on Desire2Learn @ <http://learn.ou.edu> (log on using your 4+4 ID)

## Primary Learning Objectives for the Course:

- Gain basic knowledge of the sciences of energy and climate
- Work with others to come to a consensus on questions of energy and climate

## Format of the Course:

The class will consist mostly of in-class group works, discussing various issues related to energy production, energy usage, climate, and climate change along with the social and economic issues related to these topics. Every opinion is valued and is encouraged to be expressed. Each group will be given a question (or questions) based on these topics and will present their findings/conclusions to the rest of the class. There will be little traditional lecturing in the class. Instead, powerpoint slides containing factual material will be posted on the class D2L web page. You will be expected to read the slides and post comments/questions on a discussion board on D2L prior to class. Important issues brought up on the discussion board will be examined further in class in a professional manner. The quizzes will cover the material in the powerpoint slides. The factual material will form the basis of the in-class exercises.

In addition to the powerpoint slides, there will be a series of articles that you will be expected to read, and these will also provide the starting point for many of the in-class discussions.

## Grading:

6 quizzes (after each unit) – 30% (5% each)

In class group exercises and presentations, peer evaluation; participation – 35%

Homework (including posting comments on discussion boards) - 15%

Term project – 20% (written paper- 15%; oral presentation – 5%)

**Term Project:** Groups will work together to produce a proposal for a U.S. energy policy. More details and guidelines for the paper will be given soon.

**Tentative topics:**

<b>Date</b>	<b>Topic</b>	
Week 1	Intro to course <b>UNIT 1: Fundamental energy concepts &amp; energy consumption</b>	
Week 2	<b>UNIT 1: Fundamental energy concepts &amp; energy consumption</b>	
Week 3	<b>UNIT 2: Fundamental climate concepts &amp; global warming issues</b>	<b>Quiz 1 (1/28) Energy fundamentals</b>
Week 4	<b>UNIT 2: Fundamental climate concepts &amp; global warming issues</b>	
Week 5	<b>UNIT 2: Fundamental climate concepts &amp; global warming issues</b>	<b>Quiz 2 (2/13) Climate fundamentals</b>
Week 6	<b>UNIT 3: Solar Energy</b>	
Week 7	<b>UNIT 3: Solar Energy</b> <b>UNIT 4: Bioenergy</b>	<b>Quiz 3 (2/27) Solar Energy</b>
Week 8	<b>UNIT 4: Bioenergy</b>	
Week 9	<b>UNIT 5: Wind Energy</b>	<b>Quiz 4 (3/13) Bioenergy</b>
<b>Week 10</b>	<b>SPRING BREAK - March 15-23</b>	
Week 11	<b>UNIT 5: Wind Energy</b>	
Week 12	<b>UNIT 6: Hydroelectric energy</b>	<b>Quiz 5 (4/3) Wind energy</b>
Week 13	<b>UNIT 6: Hydroelectric energy</b> Economic and societal considerations	
Week 14	Economic and societal considerations Student presentations (starting 4/17)	<b>Quiz 6 (4/15) Hydroelectric</b>
Week 15	Student presentations	
Week 16	Student presentations	<b>Final paper due May 1st</b>

**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>