

**ECO 405/590: Spring 2014
SUSTAINABLE ENERGY ECONOMICS AND POLICY**

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Class Meetings: T/TR, 3:30

Debate Attendance: REQUIRED of all students. 5 point final grade reduction for each missed debate.

Prerequisites ECO 120 and ECO 121, or ECO 410, or equivalent; or permission

Text and Readings:

- (1) Required: Dieter Helm, *Carbon Crunch* (New Haven: YUP, 2012)
- (2) Required: additional assignments will be available *via* Blackboard

Course Description:

This course presents the economic, environmental, and policy implications of energy supply, distribution, and use in the context of transitioning toward a sustainable energy future. A variety of energy types are examined including fossil fuels, nuclear power, and a range of renewable energy technologies including solar, wind, biomass, hydro, and geothermal power. The effects of energy use on greenhouse gas (GHG) emissions and climate change, on air and water quality, and on human health are considered along with policies to mitigate these effects such as carbon prices, emissions targets, efficiency requirements and investments, and renewable portfolio standards. The effects of import dependence and the development of indigenous renewable energy resources on energy security is also considered.

Class Procedures and Requirements

Evaluation of Work and Grading

Grading: The overall grade for the course will be determined by the following weights:

Homework	25%
Midterm Exam	30%
Final Exam	30%
Debates	15%

Final grades will be assigned as follows: A (90+); B+ (87-89); B (83-86); B- (80-82); C+ (77-79); C (73-76); C- (70-72); D+ (67-69); D (62-66); D- (60-61); F (59 or less).

Exams:	There will be a midterm exam and a final exam.
Midterm Exam	DATE TBD
Final Exam	DATE TBD when UMaine Finals Schedule posted

The questions will be drawn from material discussed in class and in the readings, but not necessarily covered explicitly in both. A make-up exam will be given only if: there is a very good reason, written verification is provided, and the student notifies the professor within 48 hours of the missed exam (and preferably prior to the exam). Incompletes will be given only in well-documented and extraordinary cases.

Debates

- 1) Nuclear Power**
- 2) Canadian Oil Sands**
- 3) Biofuels for Energy Security and Climate Change**
- 4) Carbon Crunch**

Disruption of normal schedule

In the event of disruption of normal classroom activities, the format for this course may be modified to enable completion of the course. In that event, you will be provided an addendum to this syllabus that will supersede this version.

Accommodations: If you have a disability for which you may be requesting an accommodation, please contact either your instructor or Ann Smith, Coordinator of Services for Students with Disabilities (Onward Building, 581-2319), as early as possible in the term.

Academic Honesty: Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers or to submit papers written by another person, to “fake” experimental results, or to copy parts of books or articles into your own papers without putting the copied material in quotation marks and clearly indicating its source. Students committing or aiding any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the UMaine Student Conduct Code.

COURSE OUTLINE

This outline is tentative. Replacements will be issued during the semester as required. Please hold exam and debate dates. Readings, film viewing, and homework will be assigned via **Blackboard** throughout the semester.

Week	Date	Topic/Activity	Faculty
1	T 1/14	Basic Energy Concepts	Hunt
	R 1/16	Basic Economic Concepts	Hunt
2	T 1/21	Basic Lifecycle Concepts	Rubin
	R 1/23	Climate Change Science	Rubin
3	T 1/28	"Climate of Doubt" film	--
	R 1/30	Climate Change Economics	Hunt
4	T 2/04	Transportation: Fossil Fuels	Rubin
	R 2/06	Heating: Fossil Fuels	Rubin
5	T 2/11	DEBATE: OIL SANDS	--
	R 2/13	Electricity: Fossil I	Hunt
6	T 2/18	Electricity: Fossil II (+CCS)	Hunt
	R 2/20	Electricity: Nuclear	Hunt
7	T 2/15	DEBATE: NUCLEAR	--
	R 2/27	Midterm Exam	--
8	T 3/04	SPRING BREAK	
	R 3/06	SPRING BREAK	
9	T 3/11	SPRING BREAK	
	R 3/17	SPRING BREAK	
10	T 3/18	Energy Scarcity and Peak Oil	Rubin
	R 3/20	Energy Security	Rubin
11	T 3/25	Transportation: Biofuels I	Rubin
	R 3/27	Transportation: Biofuels II	Rubin
12	T 4/01	DEBATE: Biofuels	(both)
	R 4/03	Electricity: Wind	Hunt
13	T 4/08	Electricity: Solar	Hunt
	R 4/10	Electricity: Other Renewables	Hunt
14	T 4/15	Heating: Renewables	Hunt,Rubin
	R 4/17	TBD	
15	T 4/22	TBD	
	R 4/24	TBD	
16	T 4/29	DEBATE: Carbon Crunch	--
	R 5/02	Course Summary + Evaluations	Hunt, Rubin