ECONOMICS 4181/5181 - SPRING 2015

ENERGY AND ENVIRONMENTAL ECONOMICS

INSTRUCTOR: Peter Schwarz, Professor of Economics and Public Policy and Faculty Associate, EPIC (Energy Production and Infrastructure Center), UNC Charlotte, and Visiting Professorship, China University of Mining and Technology

OFFICE: Friday Building 223A
OFFICE HOURS: TR 11-12 am, TR 1-1:30, or by appointment.
OFFICE PHONE: 704.687.7614
EMAIL: pschwarz@uncc.edu
Moodle2: Grades, announcements, discussion board, email

Catalog Course Description: Prerequisite: ECON. 2102. Economic issues of both energy and environment. Energy issues include the historical development of energy resources, supply and demand considerations and projections of the future energy balance. Environmental issues are externalities, common property resources and government regulation. Policy considerations include environmental standards, pollution charges and property rights. Cost-benefit analysis and microeconomic theory are applied.

Course Objectives: This course addresses energy, other natural resources, and environmental issues, building primarily upon applied microeconomics with a focus on environmental market failures and market-based solutions. Tools include valuation of environmental goods, cost-benefit analysis, and the theory of non-renewable (e.g. oil) and renewable (e.g. fisheries) resources. Issues include global warming, running out of oil and other natural resources, and sustainability.


Additional Reading: Commentaries, Resources for the Future: Part 2 Energy and the RFF website for more recent energy commentaries:

The syllabus is intended to serve as the daily schedule, but the instructor reserves the right to make alterations. Changes in daily coverage will be made at least one class in advance, while changes in exam dates or class presentations will be announced at least two classes (one week) in advance.

I. Theory and Tools of Environmental and Resource Economics

1/8, 1/13 Introduction
Chapter 1

1/15, 1/20 Economic Efficiency and Environmental Protection
Chapter 2

1/22, 1/27 The Benefits and Costs of Environmental Protection
Chapter 3

1/29, 2/3 The Efficiency of Markets, Review Ch’s 1-5
Chapter 4

2/5 Exam I
II. Non-Renewable and Renewable Resources: Energy and Other Natural Resources

2/17, 2/19  Managing Stocks: Natural Resources as Capital Assets  
Chapter 6  

2/24, 2/26  Stocks that Grow: The Economics of Renewable Resource Management  
Chapter 7  

Spring Recess March 2-7

3/10, 3/12  Review Ch’s 5-7, Exam II  
March 17 (11:59 PM): Last day to withdraw from course

III. Market-Based Environmental Policies

3/17, 3/19  Principles of Market-Based Environmental Policy  
Chapter 8  

3/24, 3/26  The Case for Market-Based Instruments in the Real World  
Chapter 9  

3/31, 4/2  Market-Based Instruments in Practice  
Chapter 10  
4/3, 4/4  Spring Weekend

IV. Sustainability and Economic Growth

4/7, 4/9  Chapter 11

4/14, 4/16  Undergraduate Class Presentations from Resources for the Future (Energy Commentaries)  
4/21, 4/23  Graduate class presentations, My research presentation if time permits.

4/28  Conclusion  
Chapter 12  

4/29 Reading Day

Th 5/7  2-4:30 PM  FINAL EXAM: Covers Class Presentations, Chapters 8, 9, 10, 11, 12
Econ 4181 Course Grade (Econ. 5181 to follow later in Syllabus):

A = 90+; B = 80-89; C = 70-79; D = 60-69; F = <60

Exams I, II (20% each)    Final Exam (30%)

Presentation on Energy Policy (10%): Class Presentation: Students will do presentations based upon one of the 16 issues in Part 2 (Energy) of Resources for the Future (RfF) 100 Issues (published in 2010) or anRfF energy issue written more recently (the series seems to have ended sometime in 2012) and do a 10-minute presentation. Post the issue you select on the Issues Discussion Board on Moodle. Up to two students can select a given issue; first-come, first served. Where two students select the same topic, they will do a team presentation. You are welcome to select your team member by posting an issue with two names, but again, first come, first served. The presentation will need to cover the material in the issue as well as bring the topic up-to-date, as these commentaries are now several years old and energy issues change quickly. If you have a concern with your team member, let me know as soon as possible and if necessary, one of the team members will do an individual presentation on the selected topic and the other will have to identify a different topic. The presentation grade will depend on the quality of the presentation, including the ability to stick to the timeline, and the ability to respond to questions from the class and from me.

Class participation (10%): contributing to class discussion in a way that reflects preparation and thought, as well as attending class regularly, arriving on time and not leaving early (including the “popcorn effect”). Beginning with the third absence, each absence will reduce your maximum participation grade by 10%. For example, if you miss 4 classes, the maximum participation grade is 80%. More than six absences will result in an automatic 0 for your class participation grade. Simply attending regularly, arriving on time, and not leaving before class is over, but rarely contributing to class discussions, will be considered a minimum C (70%). A higher grade requires contributing to class discussion.

Homework (10%): I will assign questions from the text, and will assign members of the class to take responsibility for presenting an answer. Presentations should take no more than two minutes. All students are responsible for all assigned homework and should be prepared to challenge answers with which they disagree. On occasion, announced or unannounced, I will collect the homework and grade a particular question. There will also be occasional assignments that are not from the text that will be collected and graded. Students who are absent on the day they are to present or the day a turn-in assignment is due receive a 0. In the event you are ill or have other reasons why you cannot be in class, contact me before class to see if I will allow you to make up the assignment. I will drop the lowest homework grade.

I recommend strongly that you do an initial reading before the material is to be discussed if at all possible. An initial reading will greatly improve your ability to make useful contributions to class discussions. Then, re-read more carefully after class. Tests will cover class notes, the text, and current events.
Econ. 5181 Course Grade: A = 90+; B = 80-89; C = 70-79; D = 60-69; F = <60

Exams I, II (20% each) Final Exam (30%)

In place of the attendance grade and presentation of an energy commentary from Resources for the Future, graduate students will write a paper on an energy topic and will do a presentation of the paper. The total weight of the paper and presentation is 20%, with the paper worth 15% and the presentation 5%.

The typical paper will be approximately 15-20 pages. Examples include but are not limited to: traditional fuels such as oil, nuclear, etc; alternative fuels such as wind, solar, etc.; electricity, energy efficiency and conservation; environmental aspects of energy; energy sustainability, etc. A prospectus for an approved topic must be turned in no later than 3:30 pm T Feb. 24 (preferably earlier) and completed papers must be turned in by 3:30 pm T, April 21. Late prospectuses or papers will result in a decrease of one letter grade for each Econ 4181/5181 class day late (papers turned in after 3:30 pm on the due dates are late and will be assessed a 5% penalty). Prospectuses not turned in by 3:30 pm T, Mar. 10 or papers not turned in by 2 pm Th, May 7, will not be accepted and will result in a grade of 0 for the paper.

The prospectus must include:
- Proposed subject of the paper
- Purpose of the paper
- Major question to be addressed
- Calendar for completing the paper
- Outline of the paper
- List of sources (Minimum of 3; at least 2 of which are refereed journal articles)

You should consult a guide to writing papers and/or writing in general. I expect papers to be written well. Poorly written papers will result in a lower grade. This link contains a good, concise guide to writing Economics papers: [http://www.pitzer.edu/academics/field_groups/economics/papers.asp](http://www.pitzer.edu/academics/field_groups/economics/papers.asp).

Class presentation should be approximately 15 minutes, allowing 5 minutes for questions. Two-member team projects will be considered by special request. Team papers and presentations should be approximately 50% longer (22-30 page paper and 20-25 minute presentation, allowing 8 minutes for questions).

**Homework (10%)**: Students will volunteer when homework is assigned to present solutions in the following class. Presentations should take no more than two minutes. Those students who do not volunteer will be selected (in advance) randomly. There may also be assignments that students turn in for a grade. Students who have an unexcused absence will receive a 0 for not presenting or turning in a solution when the homework is due.

I recommend strongly that you to do an initial reading before the material is to be discussed if at all possible. An initial reading will greatly improve your ability to make useful contributions to class discussions. Then, re-read more carefully after class. Tests will cover class notes, the text, and current events.

In the event of one missed exam due to documented illness or a death in the family, a make-up exam will take place on Reading Day, W May 1, at a time to be determined, unless another time can be arranged. A student missing two exams will need to withdraw from the course or else receive a grade of F in the course.
The Belk College of Business Diversity Statement

The Belk College of Business strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

UNC Charlotte Disability Services Statement

UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please provide a letter of accommodation from Disability Services early in the semester. For more information on accommodations, contact the Office of Disability Services at 704-687-0040 or visit their office at Fretwell 230.

THE UNC CHARLOTTE CODE OF STUDENT ACADEMIC INTEGRITY

The UNC Charlotte Code of Student Academic Integrity governs the responsibility of students to maintain integrity in academic work, defines violations of the standards, describes procedures for handling alleged violations of the standards, and lists applicable penalties. The following conduct is prohibited in that Code as violating those standards:

A. Cheating. Intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices in any academic exercise. This definition includes unauthorized communication of information during an academic exercise.

B. Fabrication and Falsification. Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of altering information, while fabrication is a matter of inventing or counterfeiting information for use in any academic exercise.

C. Multiple Submission. The submission of substantial portions of the same academic work (including oral reports) for credit more than once without authorization.

D. Plagiarism. Intentionally or knowingly presenting the work of another as one’s own (i.e., without proper acknowledgment of the source). The sole exception to the requirement of acknowledging sources is when the ideas, information, etc., are common knowledge.

E. Abuse of Academic Materials. Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource material.

F. Complicity in Academic Dishonesty. Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

A full explanation of these definitions, and a description of procedures used in cases where student violations are alleged, is found in the complete text of The UNC Charlotte Code of Student Academic Integrity. This Code may be modified from time to time. Students are advised to contact the Office of the Dean of Students or go to www.legal.uncc.edu/policies/ps-105.html to ensure they consult the most recent edition.