INSTRUCTOR: Peter Schwarz, Professor of Economics and Public Policy, and Senior 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 pm and by appt.
OFFICE PHONE: 704.687.7614 EMAIL: pschwarz@uncc.edu
WEB: http://www.belkcollege.uncc.edu/pschwarz/
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, especially:

I. Theory and Tools of Environmental and Resource Economics

1/9, 1/14 Introduction
Chapter 1

1/16, 1/21 Economic Efficiency and Environmental Protection
Chapter 2  Martin Luther King Day 1/20

1/23, 1/28 The Benefits and Costs of Environmental Protection
Chapter 3

1/30, 2/4 The Efficiency of Markets, Review Ch’s 1-4
Chapter 4

2/6 Exam 1: Chapters 1-4

2/11, 2/13 Market Failures in the Environmental Realm
Chapter 5
II. Non-Renewable and Renewable Resources: Energy and Other Natural Resources

2/18, 2/20  Managing Stocks: Natural Resources as Capital Assets  
Chapter 6

2/25, 2/27  Stocks that Grow: The Economics of Renewable Resource Management  
Chapter 7

Spring Break March 3-7

3/11, 3/13  Review Ch’s 5, 6, 7, Exam II Ch’s 5, 6, 7

III. Market-Based Environmental Policies

3/18, 3/20  Principles of Market-Based Environmental Policy  
Chapter 8

3/25, 3/27  The Case for Market-Based Instruments in the Real World  
Chapter 9  Last day to drop: Weds. Mar. 26, 11:59 pm.

4/1, 4/3  Market-Based Instruments in Practice  
Chapter 10

IV. Sustainability and Economic Growth

4/8, 4/10  Chapter 11

4/15, 4/17  Class Presentations (undergraduate students from Resources for the Future,  
graduate student research projects)

4/22, 4/24  Spring Weekend

4/29  Conclusion  
Chapter 12

Thursday 4/30 Reading Day

Th 5/8  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%): Two-member teams will select one of the 16 issues in Part 2 (Energy) of 100 Issues or an energy issue Commentary written in 2010 to the present and do a 10-minute presentation. Post the issue you select on the Issues Discussion Board on Moodle with the names of the two team members. Only one team can select a given issue; first-come, first served. If you have a concern with your team member, let me know as soon as possible and if necessary, each of the team members will do an individual 5-minute presentation on the selected topic or a different topic. The presentation grade will depend on the quality of the presentation 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 3rd absence (other than for University sanctioned activities), each absence will reduce your maximum participation grade by 1% (e.g. 4 absences maximum participation grade is 8/10). 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 who are not presenting are responsible for all assigned homework and should be prepared to challenge answers with which they disagree. There will also be assignments that students turn in for a grade. Students who have an unexcused absence on the day they are scheduled to present a homework problem or the day a turn-in homework is due will receive a 0.

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 a missed exam due to documented illness or a death in the family, a make-up exam will take place on Tuesday May 6, 5-7:30 pm, during final exam week, 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.
**Econ. 5181 grade determination**

**Course Grade**: A = 90+; B = 80-89; C = 70-79; U = < 70.

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 Th., Feb. 27 (preferably earlier) and completed papers must be turned in by 3:30 pm T, April 22. 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. 11 or papers not turned in by 2 pm Th, May 8, 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.

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.
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.

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.