ECON 3090-090: TOPICS IN ECONOMICS: ENERGY ECONOMICS
Fall Semester 2022 T 5:30-8:15 p.m. Room Friday 155

INSTRUCTOR: Peter Schwarz, Professor of Economics and Associate, Energy Production and Infrastructure Center (EPIC), UNC Charlotte
OFFICE: Friday 223A OFFICE HOURS: T 2:00 – 4:00 p.m or by app’t. Other days by online app’t.
OFFICE PHONE: 704.687.7614 EMAIL: pschwarz@uncc.edu
WEB: https://belkcollege.uncc.edu/directory/peter-schwarz
Canvas: Grades, announcements, discussion board, correspondence

Course Description
This course applies microeconomics to topics in energy in order to evaluate the advantages and disadvantages of each supply source in meeting energy demand. We develop the fundamental microeconomic tools in the first part of the course. In the second part of the course, we examine selected conventional fuels: oil and natural gas (If time permits, coal, and nuclear energy). We examine renewable energy--wind, solar--and energy efficiency in the third part of the course. In the final part of the course, we will examine the use of energy to produce electricity, first subject to traditional regulation and then under competitive restructuring (If time permits, we will examine electric vehicles.).

Course Prerequisites
There are no formal prerequisites, but if you have not taken ECON 2102 (Principles of Microeconomics with a grade of C or better, but B or better recommended), you should contact me so that we can gauge whether you are ready for this course.

Course Objective
The objective of the Energy Economics Topics course is to understand how economics--primarily microeconomics--influences the demand and supply of energy, and the role of market and government in using energy resources efficiently to achieve society’s goals.

Learning Objectives
1. Distinguish economic efficiency, equity, sustainability, social welfare.
2. Understand market and government failures.
3. Recognize market power, externalities, public goods characteristics as sources of market failure.
4. Evaluate benefits and costs of conventional fossil fuels.
5. Consider strengths and weaknesses of current and future alternative fuels, including renewables and energy efficiency.
6. Compare regulated and restructured electricity structures.

Textbook
At the link, there is a companion website containing homework questions and self-test quizzes. Atkins Library has one hard copy of the first edition of the text and unlimited free access to the first edition ebook. The second edition is due out on October 24. We will use chapter pdfs for the second edition provided to me by the publisher, with the notice that they are copyright protected and not to be disseminated to anyone outside this class. I will post pdfs of the revised chapters on Canvas.
Determination of Grades
There will be three exams, the third of which will take place during the Final Exam period. The third test will be given at 5:00 p.m. -7:30 pm on Tuesday Dec. 13 (the final examination time assigned for this course). The first exam counts 20%; the second exam counts 25%; the final exam counts 30%. There will be in-class quizzes based on the homework questions counting the remaining 25%. Quizzes and each of the three tests will consist of multiple choice and discussion questions.

A = 90-100; B = 80-89.9; C = 70-79.9; D = 60-69.9; F = < 60.

Homework
Homework questions are on the companion website for the text, but may be modified or additional questions added based on the second edition. I will let you know which questions to do and when they are due. I do not anticipate collecting the homework on a regular basis, but reserve the right to do so on an occasional basis, in which case the grade on the homework will count as a quiz grade. I will drop the lowest two quiz grades in determining your quiz average. Please do not ask me to drop additional quiz grades. You can anticipate around 10-12 quizzes during the semester.

Attendance
If you are not in class during a quiz for an unexcused reason, your grade will be 0. Arriving late, leaving early, or leaving and returning during class could cause you to miss a quiz or to have less time available to complete it. If you have a university-sanctioned activity or religious holiday, family crisis, illness, or other extenuating circumstance, please let me know before class. If I accept your reason before class time and there is a quiz that day, I will omit it from your quiz average. I urge you to email me any time you anticipate missing class and provide me an explanation, to facilitate me working with you as best as possible for you to be successful in this course. If you are absent, arrange with a classmate and consult Canvas to see what you have missed. You are only to ask me for information on a missed class if you have done both of these steps and still have further questions about what you have missed.

If you are absent from class as a result of a COVID-19 diagnosis or quarantine, I will work with you to help you continue to make progress in the course.

Outline of Topics and Reading Assignments
I. Economic Fundamentals
   1. Energy Overview: Chapter 1 (Week 1—T Aug. 23)
   
   2. Energy, Environment, and Sustainability: Chapter 2 (Week 2 – T Aug. 30)

   Labor Day (Week 3 M Sep. 5)

   3. Static Efficiency: Chapter 3 (Week 3 – T Sept. 6)
   
   4. Dynamic Efficiency: Chapter 4 (Week 4 – T Sep. 13)

Exam 1 – Chapters 1-3 (Week 5 T Sept. 20)
II. Conventional Energy Sources

1. Oil: Chapter 5 (Week 6 – T Sep. 27)

2. Natural Gas: Chapter 6 (Video posted before T Oct. 4)

   *Personal Religious Holiday of Yom Kippur: No class (Week 7 – T Oct. 4)*

*Fall Break (M, T Oct. 10, 11; Week 8 -- No class T Oct. 11)*

Exam 2 – Chapters 4-6 (Week 9 T Oct. 18; Grades posted no later than Sunday, Oct. 23)

*The last day to withdraw from courses with grades of W is Monday, Oct. 24.*

3. Coal: Chapter 7 (Week 10 – T Oct. 25)

4. Nuclear: Chapter 8 (Week 11 – T Nov. 1)

2. Alternative Energy Sources

1. Renewable Fuels: Chapter 9 (Week 12 T Nov. 8)

2. Energy Conservation and Efficiency: Chapter 11 (Week 13– T Nov. 15)

3. Electricity

1. Traditional Electricity Regulation: Chapter 12 (Week 14 – T Nov. 22)

*Thanksgiving Nov. 23-26*

2. Competitive Electricity Restructuring: Chapter 13 (Week 15 -- T Nov. 29)

3. Electric Vehicles: Chapter 14 (Week 16 – T Dec. 6)

W Dec. 7: Last Day of Classes; R Dec. 8: Reading Day

**FINAL EXAM: T Dec. 13 5:00 pm-7:30 pm** (Chapters 7, 8, 9, 11, 12, 13, 14)

**MAKE-UP POLICY:** If you are unable to take Exam 1 or 2 due to an excused absence, it will be rescheduled for the following Tuesday between 2 and 4: 45 pm if possible. If it cannot be scheduled that day, it will be scheduled for the next available Tuesday between 2 and 4: 45 pm if possible. If it cannot be scheduled within two weeks of the original exam date, the make-up will take place on Tuesday, Dec. 6 2:00-4:45 pm if possible. If it cannot be scheduled during these times, we will see if an earlier time on the Tuesday after the exam is possible.

*The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class and on Canvas.*
**Academic Integrity**
Students are required to abide by the UNC Charlotte Code of Student Academic Integrity. Violations of the Code will result in disciplinary action as provided in the Code. The Code is available from the Dean of Students Office or online at [http://wwhttps://ninernationcares.charlotte.edu/covid-19-information/covid-19-faqsw.legal.uncc.edu/policies/ps-105.html](http://wwhttps://ninernationcares.charlotte.edu/covid-19-information/covid-19-faqsw.legal.uncc.edu/policies/ps-105.html).

**Policies Related to COVID-19**


**Disability Accommodations**
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 about accommodations, contact the Office of Disability Services at 704-687-0040 or visit their office in Fretwell 230, [https://ds.charlotte.edu/](https://ds.charlotte.edu/)

**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.

**Religious Observances**
A campus climate of inclusion and respect for cultural diversity extends to the variety of religious practices in our community. UNC Charlotte encourages students, faculty, and staff to be aware and respectful of the diverse religious observances of our community members. Some religious days of observance affect the ability of UNC Charlotte community members to participate in work, classes, and activities because of specific work or food restrictions associated with those days.

As part of our commitment to diversity, the University makes good faith efforts to accommodate a student’s religious practice or belief, unless such accommodation would create undue hardship.

Students seeking accommodations for class attendance or academic assignments, due to a religious observance should submit the [Request for Religious Accommodation Form](#) and contact instructors in advance with such requests.

**Safety and Security Information**
Posted in each classroom