



Kuwait University  
College of Business Administration  
Economics Department  
Master of Economics



Course Syllabus  
ECON 1030-523 Economics of Natural Resources

Spring 2021-22  
Prof. Michail Skourtos

### Lecture Time and Location

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Tuesday, 5:00pm – 7:50pm, Room C1 1005  
E-Learning System: Moodle and, occasionally, MS Teams  
Course Website: <http://moodle.ku.edu.kw>

### Contact Information

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Location: Economics Department – 3<sup>rd</sup> Floor – Zone A – Office A3 1020  
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Office Hours: Mon and Wed, 12:30pm – 13:30pm and by appointment

### Course Description

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Are we running out of resources? What does this imply for the pace of fossil energy resource use? Can we substitute human made capital for natural resources? How much investment in renewable energy makes sense? What market and policy solutions can we design to address the problems inherent in these questions? This course examines natural resource issues - such as the questions above - emphasizing the role of economics in understanding their causes, consequences, and potential solutions in the context of the 'sustainable development' debate. The main emphasis is placed on enhancing the learner's ability to evaluate critically a rapidly growing, but technical, area of the economic literature. The course begins with a review of core economic concepts. We then consider market failures that can arise from externalities, public goods and common property resources. We look at static and dynamic models of natural resource allocation, including models used to study optimal management of renewable resources such as fisheries. Natural resource abundance is determined by physical processes and a general understanding of these processes is necessary for correct economic analysis. The models examined provide a framework for examining alternative institutional arrangements for resource extraction (private property, commons, markets, regulations, and public policy) in their capacity to achieve socially optimal outcomes. Issues of conservation ethics and intergenerational justice underpinning the policies will also be considered. Using specific resource sectors as example (fisheries, fossil fuels, oil, renewable energy technologies) the economic models are explained in detail in a way that is intended to raise the learner's confidence in the interpretation and assessment of various policy insights that are derived from the models.

### Prerequisites

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A good understanding of the basic microeconomic model of resource allocation under different market structures as taught in 1030-500 (Microeconomic Theory) and 1030-502 (Applied Microeconomics); a good understanding of econometric tools as taught in 1030-504 (Econometrics)

### Required Readings

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There is no unique text covering all aspects of the course. A basic textbook providing a concise overview of the theoretical underpinnings of the topics is: Perman, R., Ma, Y., McGilvray, J and Common, M (2003). Natural Resource and Environmental Economics. 3rd edition (available in the KU library) You may also consult Tietenberg, T. and L. Lewis. (2012), Environmental & Natural Resource Economics (9th Ed.), Pearson Education, Inc. (available in the KU library). This is not a textbook class, and you will do poorly if you miss the lectures on the assumption that you can make it up with the textbooks. Supplementary reading material will be distributed during the term. Readings are drawn from a variety of sources. There is a fair degree of duplication of material across these references. As such, you do not need to read all these references. However, you should read as many of them as necessary to thoroughly understand the material. All reading material will be made available on Moodle.

## Course Plan (tentative)

Week	Topic	Readings
1 <sup>st</sup>	Introduction / the frame of analysis	Perman et al Ch. 1, 2 and 3; Tietenberg/Lewis Ch. 2
2 <sup>nd</sup>	Sustainability	Perman et al ch. 2 and 4;
3 <sup>rd</sup>	Efficient and optimal use of natural resources: An overview	Perman et al ch 14; Tietenberg/Lewis ch. 5
4 <sup>th</sup>	Non-renewable resources I	Perman et al ch 15; Tietenberg/Lewis ch. 6;
5 <sup>th</sup>	Non-renewable resources II	Perman et al ch 15; Tietenberg/Lewis ch. 6
6 <sup>th</sup>	Renewable resources I	Perman et al ch 17; Tietenberg/Lewis ch. 7
7 <sup>th</sup>	Renewable resources II	Perman et al ch 17; Tietenberg/Lewis ch. 7
8 <sup>th</sup>	Stranded assets: Coal	IDB (2016). Stranded assets: a climate risk challenge. DW (2019). Banks around the world opt to offload coal (available at: <a href="https://www.dw.com/en/banks-around-the-world-opt-to-offload-coal/a-47708877?maca=en-EMail-sharing">https://www.dw.com/en/banks-around-the-world-opt-to-offload-coal/a-47708877?maca=en-EMail-sharing</a> )
9 <sup>th</sup>	Oil markets	TBA
10 <sup>th</sup>	Kuwait's oil sector	TBA
11 <sup>th</sup>	Natural resources and national accounting	Perman et al ch 19;
12 <sup>th</sup>	Project presentations	

## Course Learning Objectives (CLOs)

Upon successful completion of the course, students will be able to:

**CLO1.** Acquire a sufficient understanding of factors and processes contributing to natural resource scarcity

**CLO2.** Model and analyze the economy/natural environment interactions using microeconomic modeling with a focus on inter-temporal theories of resource allocation

**CLO3.** Understand the moral and intergenerational issues in natural resource use

**CLO4.** Understand how an economist can contribute to the development of policies supporting sustainable use of natural resources

**CLO5.** Understand the limitations of economic modelling for natural resource issues and promising new approaches

## CLO Mapping to CBA Skill Based Competency Goals<sup>1</sup>

CLO	Competency Goal			
	Analytical	Communication	Information Technology	Business Ethics
1	I			
2	R			I
3	I			
4	I			
5	I			

Type of Emphases:

- (I)ntroduce: Students will be introduced to the skill and their grasp of it assessed in the course.
- (A)pply: The course will not cover the skill. Students should have a high-level grasp of the skill and are required to apply it in the course.

<sup>1</sup> CBA Competency Goals can be found at the end of this document

- (R)einforce: Students should have an introductory-level grasp of the skill and the course will improve their mastery to a higher level.

## Course Requirements

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### Individual Assignments:

There will be in total 3 individual assignments. These individual assignments need to be submitted in MS Word format through Moodle by 9:00am on the due days. The files should be named as: "Name\_assign number.docx". Late submission is accepted within 32 hours after the due time (5:00pm on the next day) with a 25% loss of points.

### Term paper

Your task is to pick an environmental or natural resource topic from the list that I provide you and to analyze the issue from a natural resource economics perspective. To help you pace your progress, you will submit an interim version of your topic on April 26<sup>th</sup>. Final versions are due on May 17<sup>th</sup>. I encourage you to meet with me to discuss your topic. Papers should be well written and be on average 15 pages, double-spaced with normal margins and type face, excluding the title page and references. Your paper should have the following sections:

1. An introduction that presents your issue and why this issue is important. Your introduction should be explicit and be clear about the issue you are addressing/question you are answering.
2. A brief analysis of previous literature on the topic and a discussion of how your paper summarizes, criticizes and/or extends this body of knowledge.
3. A description of the theory/concepts that apply to your question
4. The underlying biophysical relationships involved. This should include quantitative as well as qualitative information and reasoning.
5. A discussion of the data that you would use in an empirical analysis and an econometric specification, including a description of variables, why they belong in your model and the impact you expect the dependent variables to have on your independent variable. An original econometric analysis of data would not be necessary but highly recommended!
7. A brief conclusion that summarizes what you learned and areas for future research. Whether, how, and to what extent the situation is "bad" from an economic perspective. Is it inefficient, unsustainable, or inequitable? Why or why not? (Be clear about your "accounting stance"—that is, from what stakeholder's perspective you are making these judgements)

I encourage you to ask a classmate to read your paper for grammar, spelling, and clarity. Because this exercise is designed to develop your writing and oral communication skills, I will grade you on the quality of your writing, how effectively you incorporate comments from your reviewers, and on your presentation, including your PPT slides.

Some Details:

- Probably needless to say, but all written work shall properly acknowledge and cite the intellectual contribution of others to the analysis, opinion and recommendations presented.
- While I do not intend to take specific point deductions for spelling, grammatical or other errors, I do expect that your writing will be good enough that it does not distract from your ideas. You will, in other words, get higher marks for ideas well-articulated.
- References may include a mix of academic and non-academic sources, but you should not rely exclusively on material from the popular press, Wikipedia, etc.
- Please save your file as "Name\_523 term paper.docx".

The paper needs to be submitted through Moodle latest on May 19<sup>th</sup>. Students must refer to MLA writing style for their assignments and report writing (see [https://owl.purdue.edu/owl/research\\_and\\_citation/mla\\_style/mla\\_formatting\\_and\\_style\\_guide/mla\\_general\\_format.html](https://owl.purdue.edu/owl/research_and_citation/mla_style/mla_formatting_and_style_guide/mla_general_format.html) ).

### Paper presentation

The objective of the presentation is for you to develop effective oral communication skills by presenting your findings in a clear and compelling way to the class. Upon completing the paper and presentation, you will have acquired the skills to identify a research question, construct an economic hypothesis, apply the theory to the question, identify and describe the data that you would use to answer your question, and present your ideas in a way that keeps your audience engaged with you. You should put together a 6-page PowerPoint presentation (not counting the title and concluding slides) that clearly presents your issue. Presentations will take place on May 24<sup>th</sup>.

## Course Policies

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- Attendance and Participation: Every student in this course must abide by the Kuwait University Policy on Attendance (published in the Curriculum System Bylaws, Chapter 3, Section 13). A copy of the student guide can be accessed online on:

[http://vpaa.ku.edu.kw/en/documents/KU%20ByLaws/Students/Curriculum\\_Regulations.pdf](http://vpaa.ku.edu.kw/en/documents/KU%20ByLaws/Students/Curriculum_Regulations.pdf)

- Cheating and Plagiarism: Every student in this course must abide by the Kuwait University Policy on Cheating and Plagiarism (published in the Curriculum System Bylaws, Chapter 3, Section 14). A copy of the student guide can be accessed online on:  
[http://vpaa.ku.edu.kw/en/documents/KU%20ByLaws/Students/Curriculum\\_Regulations.pdf](http://vpaa.ku.edu.kw/en/documents/KU%20ByLaws/Students/Curriculum_Regulations.pdf)
- Please carefully note all sources and assistance when you turn in your work. Under no circumstances should you take credit for work that is not yours. You should neither receive nor give any unauthorized assistance on any deliverable. If you have any questions about what constitutes “unauthorized assistance” please email me before the deliverable is submitted. Please note: copy/paste of foreign text into the assignments is not allowed. Always translate it into your own words!

## Grading

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The scores in this course will be the weighted average of the following items:

Weight	Description
30%	Assignments
60%	Term Paper
10%	Presentation
100%	TOTAL

## Grade Distribution

Grade	Range
A	≥ 95
A-	≥ 90 and < 95
B+	≥ 87 and < 90
B	≥ 83 and < 87
B-	≥ 80 and < 83
C+	≥ 77 and < 80
C	≥ 73 and < 77
C-	≥ 70 and < 73
D+	≥ 65 and < 70
D	≥ 60 and < 65
F	< 60

## Important Dates

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Date	Event
8/03/2022	First day of classes
26/04/2022	Interim submission of term paper
17/05/2022	Final submission of term paper
24/05/2022	Last day of classes / Presentations

## CBA Competency Goals

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**1. Analytical Competency:** A CBA graduate will be able to use analytical skills to solve business problems and make a well-supported business decision.

Student Learning Objectives:

- 1.2 Use appropriate analytical techniques to solve a given business problem.
- 1.2 Critically evaluate multiple solutions to a business problem.
- 1.3 Make well-supported business decisions.

**2. Communication Competency:** A CBA graduate will be able to communicate effectively in a wide variety of business settings.

Student Learning Objectives:

- 2.1 Deliver clear, concise, and audience-centered presentations.
- 2.2 Write clear, concise, and audience-centered business documents.

**3. Information Technology Competency:** A CBA graduate will be able to utilize Information Technology for the completion of business tasks.

Student Learning Objectives:

- 3.1 Use data-processing tools to analyze or solve business problems.

4. Ethical Competency: A CBA graduate will be able to recognize ethical issues present in business environment, analyze the tradeoffs between different ethical perspectives, and make a well-supported ethical decision.

Student Learning Objectives:

4.1 Identify the ethical dimensions of a business decision.

4.2 Recognize and analyze the tradeoffs created by application of competing ethical perspectives.

4.3 Formulate and defend a well-supported recommendation for the resolution of an ethical issue.

5. General Business Knowledge: A CBA graduate will be able to demonstrate a basic understanding of the main business disciplines' concepts and theories.

Student Learning Objectives:

5.1 Acquire a fundamental understanding of knowledge from the main business disciplines (e.g., finance, accounting, marketing, and management information systems, among others).