

**Department of Economics**  
**ECON 3803 A - The Economics of Natural Resources**  
**WINTER 2022**

**Instructor:** Dr. Collins Ayoo  
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**Class Time:** Thursdays 6:05 - 8:55 pm (Online, EST)  
**Office Hours:** Friday 4:00 - 5:00 pm (Online, EST)  
**TA:** To be announced in Brightspace



### **A. Introduction**

This course is an introduction to the theory and practice of natural resource economics. It deals with the economic analysis of issues concerning natural resource use, management and conservation. Natural resource economics addresses questions such as how to value natural resources, how to optimally manage natural resources over time to maximize their value, how different systems of property rights impact natural resource use and sustainability, and how public policy can be used to achieve optimal management. The course starts with a review of microeconomic theory and the basic principles for natural resource analysis including efficiency, sustainability and policy approaches used to address natural resource use and management. After establishing a level of comfort with the theory and some general analytical tools, we will discuss practical applications to natural resource problems such as forestry, fisheries, water resource allocation, energy and mineral economics.

### **B. Prerequisites**

ECON 1001 or FYSM 1003. Students who believe they have taken a similar background course or courses from another university must provide appropriate documentation to the Department of Economics Undergraduate Administrator, Renee Lortie.

### **C. Course Delivery**

All the lectures this course will be online and synchronous. Students are therefore expected to be available online during the scheduled lecture times. The lectures will be held on zoom and students are not required to have webcams. Recordings of the synchronous lectures will be posted in the course page after the lecture.

### **D. Brightspace**

All relevant course material, assignments, and announcements will be available on Brightspace which is Carleton University's learning management system under ECON 3803 A, which can be accessed at <http://brightspace.carleton.ca>. Online submission of assignments, the midterm exam and the final exam will also be via Brightspace. Students are responsible for checking Brightspace

regularly to ensure that they are up to date with any announcements. For further assistance and support, visit <https://carleton.ca/brightspace/where-to-get-help-with-brightspace/>  
For assistance with Brightspace contact the ITS Service Desk (4th Floor, MacOdrum Library, telephone: 613-520-3700.

### **E. Email**

If you need to email the Instructor or a TA, please do so using Carleton email address. I will try to respond to student's email within three working days. I will not reply to emails originating from non-Carleton email accounts. For matters related to course material, I would encourage students to discuss this with your TA in-person or me.

### **F. Required Texts and Reading Materials**

Field, B.C. 2016. Natural Resource Economics: An Introduction, Third Edition, Waveland Press.  
Additional relevant reading materials will be posted on cuLearn during the term.

Students may also find the following texts useful:

Berck, P. and G. Helfand.2010.The Economics of the Environment. Prentice Hall. Ch. 16 &17.

Tietenberg, T. and L. Lewis.2012.Environmental and Natural Resource Economics. Pearson.  
Ninth Edition.

Bergstrom, J. and A. Randall.2010.Resource Economics. Edward Elgar. Third Edition.

### **G. Course Evaluation**

Each student's grade will be calculated as follows:

4 problem sets:25%

Mid-term examination: 30% - March 3, 2022

April Final examination: 45% – between April 14 and 28, 2022 - scheduled by the University.

**Problem Sets:** I will assign four problem sets through the semester. All assignments must be submitted online via cuLearn on the due dates. No late assignments will be accepted.

**Midterm Exam:** The mid-term exam will be online via Brightspace. No late midterm exam will be accepted. There will be no deferred midterm exam. For students who can document a compelling reason for missing the mid-term exam, the weight assigned to the midterm exam will automatically be shifted to the final exam. Students *must* inform the instructor of such an absence in advance, if possible.

**Final Exam**: The final exam will be cumulative (i.e., based on the whole course). It will be online via Brightspace. Failure to write the final exam when the student has achieved satisfactory performance during the semester will result in a grade of ‘F’ until an appeal to write the deferred final exam in May/June 2022 if granted by the Registrar’s Office. Application to write a deferred final examination must be made at the Registrar’s Office. A change of grade will be submitted when the deferred final exam has been written and the marks are available. See Academic Regulation 2.3 for the official meanings of the grades, and note that it stipulates that no course grades are final until approved by the Faculty Dean.

## **H. Course Sharing Websites**

Please note that student or professor materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

## **I. Statement on Plagiarism**

Please be aware that plagiarism is a serious offence at Carleton and should be recognized and avoided. For example, simply copying someone’s assignment whether in whole or in part can be considered as plagiarism. For further information on how to do so, please see “Academic Integrity and Offenses of Conduct” at <https://carleton.ca/economics/courses/writing-preliminaries/academic-integrity-and-offenses-of-conduct/>

## **J. Course Outline**

Building Blocks and Fundamental Concepts

1. Important Issues in Natural Resource Economics
2. Natural Resources and the Economy
3. Willingness to Pay/Demand
4. Costs/Supply
5. Efficiency and Sustainability
6. Markets and Efficiency

Policy Instruments and Natural Resource Analysis

1. Public Policy for Natural Resources
2. Principles of Analysis

Applied Natural Resource Analysis

1. Mineral Economics
2. Energy Economics
3. Forest Economics
4. Marine Resources
5. Water Resources
6. Economics of Wildlife Management
7. Economics of Biodiversity Preservation

## **K. Information on Academic Accommodations**

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

### **Pregnancy obligation or Religious Obligation accommodation**

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: Student Guide to Academic Accommodation

### **Academic Accommodations for Students with Disabilities**

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation or contact your PMC coordinator to send your instructor your *Letter of Accommodation* at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. [carleton.ca/pmc](http://carleton.ca/pmc)

### **Survivors of Sexual Violence**

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: [carleton.ca/sexual-violence-support](http://carleton.ca/sexual-violence-support)

### **Accommodation for Student Activities**

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

<https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>