

NATURAL RESOURCE AND ENVIRONMENTAL ECONOMICS  
ECONOMICS EC2172B-001  
Department of Economics  
Western University

**January 2022**

**Instructor:** Irene Trela

**Office Hours: online any day, any time**

**Via e-mail:** use your uwo e-mail to e-mail me at [itrela@uwo.ca](mailto:itrela@uwo.ca) (you should typically expect a reply within 24 hours, except weekends and holidays)

**Via Zoom:** A student can request a zoom meeting by emailing me using their uwo e-mail and requesting a day/time in the Eastern Time Zone; I will then set up a Zoom meeting for that individual student

**Delivery mode:** in-person and/or online either synchronously or asynchronously

**Course website:** <https://owl.uwo.ca/portal>

**Undergraduate inquiries:** 519-661-3507 SSC Room 4075 or [econugrd@uwo.ca](mailto:econugrd@uwo.ca)

**Course delivery with respect to the COVID-19 pandemic:**

Although the intent is for this course to be delivered in-person, the changing COVID-19 landscape may necessitate some or all of the course to be delivered online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will not change. Any assessments affected will be conducted online as determined by the course instructor.

When deemed necessary, tests and examinations in this course will be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide personal information (including some biometric data) and the session will be recorded. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at: <https://remoteproctoring.uwo.ca>

**Registration:**

You are responsible for ensuring you are registered in the correct courses. If you are not registered in this course, the Department will not release any of your marks until your registration is corrected. You may check your timetable by using the Login on the Student Services website at <https://student.uwo.ca>. If you notice a problem, please contact your home Faculty Academic Counsellor immediately.

**Prerequisite Note:**

The prerequisite(s) for this course is (are) **Economics 1021A/B and Economics 1022A/B, or Economics 2001A/B.**

You are responsible for ensuring that you have successfully completed all course prerequisites, and that you have not taken any anti-requisite courses. Lack of prerequisites may not be used as a basis for appeal. If you are found to be ineligible for a course, you may be removed from it at any time and you will receive no adjustment to your fees. This decision cannot be appealed.

If you find that you do not have the course prerequisites, it is in your best interest to drop the course well before the end of the add/drop period. Your prompt attention to this matter will not only help protect your academic record, but will ensure that spaces become available for students who require the course in question for graduation.

### **Course Objectives:**

Environmental economics is a valuable means of inquiring why people behave as they do toward the natural environment and how we might restructure the current system to rectify harmful practices. Its strength lies in the fact that it can help design effective environmental policies, get more environmental improvement from the resources we devote to these programs, and help us learn more about the levels of environmental damages and the values people put on improving the environment. The aim of this course is to present students with the types of problems environmental economists work on and some of the approaches they might take.

### **Course Learning Outcomes:**

Students will be able to apply economic reasoning and methods effectively to the study of environmental issues.

Students will be able to use economic theories of market inefficiency to explain environmental problems.

Students will be able to identify major current environmental problems and their economic components.

Students will be able to identify major current policies to remedy environmental problems.

Students will be able to apply the concept of trade-off to environmental policies.

Students will be able to use elementary cost-benefit analysis to measure the effectiveness of environmental policies.

Students will be able to evaluate the impact of environmental policies on individual and social welfare.

### **Textbook:**

Barry C. Field and Martha K. Field, *Environmental Economics: An Introduction*, 8th edition, McGraw-Hill Ryerson, 2021.

## Course Website

<http://owl.uwo.ca>: This site gives you access to lecture notes for theory, applications (in the form of additional topics of discussion) for real-life examples, homework questions for numerical practice, additional sample questions to further help prepare you for exams, and announcements. Answers to homework and additional sample questions are posted on OWL. **Students are reminded that posted lecture notes, additional topics of discussion, homework and additional sample questions will ALL be subject to examination.**

## Communication:

- Students should check the course OWL site for announcements and/or their uwo email for new messages posted to OWL
- Students can email me at [itrela@uwo.ca](mailto:itrela@uwo.ca) if they have any questions or personal matters they wish to discuss (expect a reply reasonably soon after sending or at least within a few hours)
- Students can book a zoom meeting with me if they wish to discuss questions in more detail. Zoom meetings can be booked almost instantaneously (if I'm monitoring my e-mail), or at least for the same day, or booked in advance.

## Technical Requirements:

- Laptop or computer
- Stable internet connection
- Microphone and Webcam
- Scanner/ Smartphone

This equipment is needed for the following purposes: (1) to access the resources and announcements on OWL, (2) to participate in virtual office hours using Zoom, (3) when necessary, to write exams on OWL and for virtual proctoring of any exams, and (4) to be prepared for unforeseen circumstances. One such circumstance is that, if an OWL exam is disrupted by technical difficulties, students may be required to scan or take pictures of handwritten answers and send these images to the instructor via email.

For technical support, see the OWL Help page or contact Western Technology Services Helpdesk (<https://wts.uwo.ca/about-wts/contact.html>). Google Chrome or Mozilla Firefox are the preferred browsers for OWL; update your browser frequently.

## Assessments and Grading:

Midterm Exam\* worth 40% of your grade, tentatively scheduled for Wednesday, March 2, 5:00PM-7:00PM eastern time, but subject to change.

Final Exam\* worth 60% of your grade, to be scheduled by the Registrar's Office. It will be a 2 hour exam and will be cumulative.

\*The midterm and final exams will be in mixed format, containing some or all of the following types of questions:

- True/False Questions
- True/False 'Grouped' questions
- Fill-in-the-blank Questions
- Fill-in-the-blank 'Grouped' Questions
- Multiple Choice Questions

'Grouped' questions are a series of questions pertaining to a diagram or word statement.

Exams will be administered in-person (or when deemed necessary, online in OWL). Details to follow at a later date.

### **Policy Regarding Missed Assessments:**

Students **must** follow Western University's procedures for approval of their absence from any exam in order to receive an accommodation. Please see the **Please Note Department Policies for 2021-2022** section of this syllabus for details on these procedures. If during the Winter 2022 term Western University announces any changes to these procedures, please follow those procedures.

**STUDENTS WHO MISS AN EXAM (MIDTERM OR FINAL) MUST ALSO E-MAIL ME OF THEIR ABSENCE FROM THE EXAM AT LEAST 1 HOUR PRIOR TO THE COMMENCEMENT OF THE EXAM.**

Students with an approved absence from the original scheduled midterm exam will have the weight of the midterm transferred to the final exam. No makeup exam will be given.

Students with an approved absence from the original scheduled final exam AND who e-mailed me at least 1 hour prior to the commencement of the final exam will be required to write a final makeup exam that may be zoom-proctored and have a different format than the original scheduled final exam. Students with an approved absence from the original scheduled final exam but who neglected to e-mail me of their absence at least 1 HOUR PRIOR to the commencement of the original scheduled final exam, will need to contact me for additional steps.

### **Online Proctoring Notice:**

Makeup exams in this course may be conducted using Zoom. If so, you will be required to keep your camera on for the entire session, hold up your student card for identification purposes, and share your screen with the invigilator if asked to do so at any time during the exam. The exam session will not be recorded.

More information about the use of Zoom for exam invigilation is available in the Online Proctoring Guidelines at the following link:

<https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf>.

Completion of this course will require you to have a reliable internet connection and a device that meets the system requirements for Zoom. Information about the system requirements are available at the following link: <https://support.zoom.us/hc/en-us>

Please note that Zoom servers are located outside Canada. If you would prefer to use only your first name or a nickname to login to Zoom, please discuss this with your instructor in advance of the test or examination.

## Course Outline

Do not read the textbook cover-to-cover as not all the material in the textbook will be covered in the course. Use the textbook as a cross-reference to what is posted in your lecture notes and in the additional topics of discussion; in other words, refer to the textbook only for *further clarification* on subject matters/topics that are posted on OWL. You will not be responsible/tested on material in the textbook that is not posted on OWL.

### 1. Introduction

What is Environmental Economics? Chapter 1  
The Economy and the Environment, Chapter 2

### 2. Analytical Tools

Benefits and Costs, Supply and Demand, Chapter 3  
Markets, Externalities, and Public Goods, Chapter 4  
The Economics of Environmental Quality, Chapter 5

### 3. Cost-Benefit Analysis

Framework of Analysis, Chapter 6  
Benefit-Cost Analysis: Benefits, Chapter 7  
Benefit-Cost Analysis: Costs, Chapter 8

### 4. Environmental Policy Analysis

Criteria for Evaluating Environmental Policies, Chapter 9  
Decentralized Policies: Liability Laws, Property Rights, Voluntary Action, Chapter 10  
Command-and-Control Strategies: Standards, Chapter 11  
Incentive-Based Strategies: Environmental Charges and Subsidies, Chapter 12  
Incentive-Based Strategies: Market Trading Systems, Chapter 13

### 5. Environmental Policy in Canada and Global Environmental Issues (we may not be covering these chapters in their entirety; details of what will be covered will be announced later)

Federal, provincial and local Environmental Issues in Canada, weakly referencing textbook Chapters 15-18 (which relate to the US)  
International Environmental Agreements, Chapter

## **How to do well in the course:**

1. Start each week by reading the course notes provided to you (including notes on the additional topics of discussion). Refer to the textbook for further clarification on subject matters/topics that are in your notes.
2. Work the questions in your notes as well as the homework questions and additional sample questions. These questions will not be graded but are vital in doing well in the course. So why the importance of working questions? Because economics requires active learning. The midterm and final exams will test students not on their ability to memorize the course material but rather on their ability to understand and use logical step-by-step reasoning to arrive at answers. Passively reading your notes and textbook rarely results in a passing grade.
3. If you have any questions, please email me. I will be monitoring my email daily, and you should typically expect a reply reasonably soon after your message is sent or at least within a few hours, excluding weekends and holidays.
4. If you would like to discuss course-related material in more detail than what may be possible in an e-mail, best to book a zoom meeting with me. A meeting can be booked almost instantaneously, or at least for the same day, or booked in advance.

## **Professionalism, Privacy and Copyright:**

- Students are expected to follow the Student Code of Conduct.
- All lectures and course materials, including slides, presentations, outlines, and similar materials, are protected by copyright. Students may take notes and make copies of course materials for their own educational purposes only.
- Students may not record lectures, reproduce (or allow others to reproduce), post or distribute lecture notes, assessments, or any other course materials publicly and/or for commercial purposes without written consent of the instructor.
- Recordings (audio or video) are not permitted without explicit, written permission of the instructor. Permitted recordings may not be distributed or shared.
- Students are expected to follow online etiquette expectations provided on OWL (if applicable; otherwise delete this bullet point)
- Students will be expected to take an academic integrity pledge before some assessments.

**Please Note**  
**Department & University Policies for Winter 2022**

The University expects all students to take responsibility for their own Academic Programs. Students should also check their registration to ensure they are enrolled in the correct courses.

1. **Guidelines, policies, and your academic rights and responsibilities** are posted online in the current Western Academic Calendar at: <http://westerncalendar.uwo.ca>. Claiming that “you didn’t know what to do” is not an acceptable excuse for not following the stated policies and procedures.
2. Students must familiarize themselves with the “**Rules of Conduct for Examinations**” [http://www.uwo.ca/univsec/pdf/academic\\_policies/exam/administration.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/exam/administration.pdf).
3. **Cheating as an academic offence:** Students are responsible for understanding what it means to “cheat.” The Department of Economics treats cheating incidents very seriously and will investigate any suspect behavior. Students found guilty will incur penalties that could include a failing grade or being barred from future registration in other Economics courses or programs. The University may impose further penalties such as suspension or expulsion.
4. **Plagiarism:** Students must write their essays and assignments in their own words. When taking an idea/passage from another author, it must be acknowledged with quotation marks where appropriate and referenced with footnotes or citations. Plagiarism is an academic offence (see Scholastic Discipline for Undergraduate Students in the Western Calendar at [http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryId=1&SelectedCalendar=Live&ArchiveID=#Page\\_20](http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryId=1&SelectedCalendar=Live&ArchiveID=#Page_20)).

Western University uses software to check for plagiarism and students may be required to electronically submit their work. Those found guilty will be penalized as noted in point 3.

5. It is a Department of Economics policy that **NO** assignments be dated, stamped or accepted by staff. Students must submit assignments to the instructor.
6. **Appeals:** University policies and procedures for appealing a mark can be found in the Student Academic Appeals section in the current Western Academic Calendar at: [http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryId=1&SelectedCalendar=Live&ArchiveID=#Page\\_14](http://westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryId=1&SelectedCalendar=Live&ArchiveID=#Page_14). **Please note the relevant deadlines.**

Department of Economics procedures for appealing a mark can be found here: [https://economics.uwo.ca/undergraduate/program\\_counselling/responsibilities\\_policies.html#appeals](https://economics.uwo.ca/undergraduate/program_counselling/responsibilities_policies.html#appeals). The Department will not consider an appeal unless an attempt has been made to settle the matter with the instructor first. Students who remain dissatisfied with the outcome may proceed to submit an appeal to [econugrd@uwo.ca](mailto:econugrd@uwo.ca). Please follow the instructions and use the appeal form shown in the above link.

7. **Systematic adjustments of a class grade distribution** (either up or down) can occur in Economics courses. The fact that grades have been adjusted is **not** grounds for an appeal.
8. Note the following **add and drop deadlines**:

Deadline to add a second term half course:

**Tuesday January 18, 2022**

Deadline to drop a second term half course:

**Monday March 14, 2022**

### **Policy Regarding Makeup Tests and Final Examinations**

Faculty of Social Science policy states that oversleeping or misreading an exam schedule is NOT grounds for a makeup. This rule applies to midterm and final exams in the Department of Economics.

### **Policies Regarding Academic Accommodation**

- The Faculty of Social Science's policies on academic accommodation are found at [https://counselling.ssc.uwo.ca/procedures/academic\\_consideration.html](https://counselling.ssc.uwo.ca/procedures/academic_consideration.html)
- **Accommodation for Students with Disabilities:** Students with disabilities or accessibility challenges should work with Accessible Education (formerly SSD, see [http://academicsupport.uwo.ca/accessible\\_education/index.html](http://academicsupport.uwo.ca/accessible_education/index.html)), which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: [Academic Accommodation for Students with Disabilities](#).
- **Rewriting Exams and Retroactive Reweighting are NOT Permitted:** Students who proceed to write a test or examination must be prepared to accept the mark. Rewriting tests or examinations, or retroactive reweighting of marks, is **not** permitted. Self-Reported Absences cannot be used once a student has proceeded to start to write a test or exam.
- **Self-Reported Absences:** Students will have two opportunities during the fall and winter terms to receive academic consideration if they self-report a missed assessment using the online self-reported absence portal, provided the following conditions are met: the assessment is missed due to an absence of no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted otherwise on the syllabus. Students are not able to use the self-reporting option in the following circumstances:
  - for exams scheduled by the Office of the Registrar (e.g., final exams)
  - absence of a duration greater than 48 hours
  - assessments worth more than 30% of the student's final grade
  - if the student has opened or started the test or exam
  - if a student has already used the self-reporting portal twice during the fall/winter terms



If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate (SMC) if the absence is medical or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office for more information about the relevant documentation. It is strongly recommended that students notify the instructor as soon as possible, ideally before the assessment, when they become aware of an absence. University policy is that students must communicate with their instructors no later than 24 hours after the end of the period covered by the SMC or immediately upon their return from their documented absence. Failure to follow University policy and procedures may result in denial of academic accommodation and a grade of zero.

- **Documentation for Accommodation:** Individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds or for other reasons. **All required documentation for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**
- **Western University policy on Consideration for Student Absence** is available here: [Policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs.](#)
- **Student Medical Certificate (SMC):** This form is available here: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)
- **Religious Accommodation:** Students should consult the University's list of recognized religious holidays and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the [Western Multicultural Calendar.](#)

**Policy Regarding Class Attendance and Engagement:** If the instructor deems a student's attendance or engagement in the class to be unsatisfactory, that student may be prohibited from writing the final examination. Examples of unsatisfactory class engagement include frequent absences from an in-person or synchronous online class, lack of assignment submissions, and inadequate use of online course materials. Instructors who intend to make use of this policy will notify the student in advance.

**Statement on Mental Health and Support Services:** Students under emotional/mental distress should visit [https://uwo.ca/health/mental\\_wellbeing/](https://uwo.ca/health/mental_wellbeing/) for more information and a complete list of resources on how to obtain help.

**Statement on Remote Proctoring:** While Western intends to hold most classes, mid-terms and finals in-person, the London-Middlesex Health unity may require western to teach in a remote format. If this occurs, all assessments will be done remotely and may involve the use of remote proctoring software (i.e., Proctorio, ProctorTrack). Instructors will provide information on the details should the need arise.