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## ACKNOWLEDGEMENT

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UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəyəm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.

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## COURSE INFORMATION

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Course Title	Course Code Number	Days and Time	Credit Value
Environmental Economics and Policy: Theory.	FRE 526	MW, 10-11:30	1.5

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## DESCRIPTION

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In this course, we will build an analytical framework from simple economic principles. We will use it to define society's optimal pollution and preservation/exploitation of natural resources. We will then ask: can markets function effectively to protect our environment or is government policy necessary? When it comes to the environment, the market often fails. What can we do to improve it? Based on the type of resource, we will study policies to correct market failure. We will understand the realities of government intervention and how governments can do better in steering our environment.

Using our economic framework, we will study the economics of marine resources and climate change.

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## PREREQUISITES

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MFRE courses required in your first semester, or permission of the instructor.

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## COURSE INSTRUCTOR

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Course Instructor(s)	Contact Details	Office Location	Office Hours
Sumeet Gulati	+1 (604) 822-2144, <a href="mailto:sumeet.gulati@ubc.ca">sumeet.gulati@ubc.ca</a> .	MCML 341	Wed, 11:30 AM – 12:15 PM.

I am a Professor in Environmental and Resource Economics at the University of British Columbia. Among other things, I study the cost of conflict with wildlife to farmers living in proximity of wildlife reserves in India. This includes direct damages from conflict: lost crops and livestock, human injury and death. My projects in the economics of conservation are listed at [the Wildlife and Conservation Economics Laboratory](#).

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## TEACHING ASSISTANT.

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Course Instructor(s)	Contact Details	Office Location	Office Hours
Juan Fercovic	<a href="mailto:juan.fercovic@ubc.ca">juan.fercovic@ubc.ca</a> .	NA	Friday, 1 – 2 PM.

I am a Ph.D. student at [the Wildlife and Conservation Economics Laboratory](#) studying the factors determining energy consumption and its components by households in Canada and Chile.

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## COURSE STRUCTURE

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In this course you will attend lectures, read theoretical material, and learn from research articles on fisheries and climate change. Assignments and exams, play an important part in the learning of the topics presented.

## SCHEDULE OF TOPICS

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Wherever possible I provide a stable link to the paper. While some of these links will work anywhere, many of them are digitally protected requiring a subscription. You can access this material by logging in through your account at the UBC library, or on any computer connected via Ethernet on the UBC network. For some articles I do not provide a link, in that case, please search for the article (if you search via the UBC library you will find access to its electronic version).

This outline is subject to change. I might add/replace material as the course proceeds.

### 1. Introduction to Environmental Economics:

- a. Fullerton, D. and R. Stavins (1998), "How do Economists Really Think About the Environment?" *Discussion paper 98-29*, Resources for the Future, <https://ageconsearch.umn.edu/record/10910/>.
- b. There is course material on Canvas for this section, please review your course slides up to and including the set of slides titled: dynamic efficiency. Students can supplement the material on Canvas by reading an undergraduate level environmental textbook of their choice. One suggestion is: Keohane and Olmstead, "*Markets and the Environment*," Island Press, <http://www.islandpress.com/ip/books/book/islandpress/M/bo5092233.html>:
  1. Economic Efficiency.
  2. Externalities and Market Failure.
  3. Benefit-cost analysis and its relationship with efficiency.
  4. Dynamic/Intertemporal Efficiency.
- c. The economics of pollution control / Instrument choice in environmental policy.
  1. Material in Canvas: course slides titled "The Economics of Pollution Control" and "Ambient Standards."
  2. Lawrence H. Goulder and Ian W. H. Parry (2008), "Instrument Choice in Environmental Policy," *Rev Environ Econ Policy* 2(2): 152-174 doi:10.1093/reep/ren005. Available online at <http://reep.oxfordjournals.org/content/2/2/152.abstract>.

### 2. Marine Resources/Open Access Resources.

- a. Course Material on Canvas.
- b. Brown G. (2000) "Renewable natural resource management and use without markets", *Journal of Economic Literature*, 38, 875-914.

#### Economics of Fisheries

- c. Conrad, J.M. (1995), "Bioeconomic models of the fishery", *Handbook of Environmental Economics*, (D. Bromley, ed.) Oxford, Blackwell, 405-432

#### Policy Problems

- d. Turner M.A., (1997), "Quota-induced discarding in heterogeneous fisheries" *Journal of Environmental Economics and Management*, 33, 186-195

## 3. The Economics of Climate Change.

## a. Some basic issues (please see class material on Canvas).

1. Carbon Taxes vs. Cap and Trade.

2. The choice of social discount rates in climate policy.

Some reading material: Maureen Cropper in the RFF Resources Magazine.  
<https://www.resourcesmag.org/archives/how-should-benefits-and-costs-be-discounted-in-an-intergenerational-context/>.

David Roberts on Grist: <https://grist.org/article/discount-rates-a-boring-thing-you-should-know-about-with-otters/>.

Goulder and Williams, RFF working paper:  
<https://www.rff.org/publications/working-papers/the-choice-of-discount-rate-for-climate-change-policy-evaluation/>.

b. Symposium: The Economics of Climate Change: The Stern Review and Its Critics. This is a symposium of four papers online at: <http://reep.oxfordjournals.org/content/2/1.toc>. Individual papers are:

1. Robert Mendelsohn (2008), "Is the *Stern Review* an Economic Analysis?" *Rev Environ Econ Policy* 2(1): 45-60 doi:10.1093/reep/rem023

2. Thomas Sterner and U. Martin Persson (2008), "An Even Sterner Review: Introducing Relative Prices into the Discounting Debate," *Rev Environ Econ Policy*, 2(1): 61-76 doi:10.1093/reep/rem024.

3. John P. Weyant (2008), "A Critique of the *Stern Review's* Mitigation Cost Analyses and Integrated Assessment," *Rev Environ Econ Policy* 2(1): 77-93 doi:10.1093/reep/rem022.

4. Simon Dietz and Nicholas Stern (2008), "Why Economic Analysis Supports Strong Action on Climate Change: A Response to the *Stern Review's* Critics," *Rev Environ Econ Policy* 2(1): 94-113 doi:10.1093/reep/rem001.

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## LEARNING OUTCOMES

Through this course I will help you,

- To understand the critical role of property rights, institutions, and incentives in environmental problems.
- To analyze the impacts of the various sources of market failure in real-world environmental situations.
- To determine the relative merits of different environmental policies—market-based or other regulatory solutions—in different contexts.

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## LEARNING ACTIVITIES

Preparation for lectures.

Asynchronous, and Synchrononous lectures.

Active participation in class.

Assignments, and tests.

### LEARNING MATERIALS

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Available at Canvas: <http://www.canvas.ubc.ca>. You are required to regularly login to your course page for FRE 526. Your syllabus, course-lecture slides, additional material, announcements, assignments, and grades will be available there.

Students can supplement the material on Canvas by reading an undergraduate level environmental textbook of their choice. One suggestion is: Keohane and Olmstead, "Markets and the Environment," Island Press, <http://www.islandpress.com/ip/books/book/islandpress/M/bo5092233.html>.

### ASSESSMENTS OF LEARNING

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Your grade shall be determined as follows

Exams and Problem Sets	Date	Percent of Grade
3 out of 4 take-home assignments.	Assigned every two weeks.	60 percent
Final Exam	In Class, date and time TBA.	30 percent
Class Participation	See below.	10 percent

#### Assignments

You will be assigned three take-home assignments consisting of problem sets and short essays addressing what you have learnt in class and from your assigned readings. These assignments will challenge students to understand the economic impacts of various market failures in real-world environmental situations, the relative merits of different environmental policies - market-based or other regulatory solutions - in different contexts as well as the critical role of property rights, institutions, and incentives in addressing environmental problems.

#### Exam

The final exam will be comprehensive (it shall cover all material taught in class), will be held in-person (the time and room will be announced early February), and will last two hours. As long as the university permits, we will hold this exam in person. If public health/university regulations require the exam to be taken online, we will inform you about this change as soon as possible.

#### Class Participation

Your participation grade depends on your contribution to class discussions. All contribution is appreciated, even questions asking me to clarify previously taught material. The sole aim of assigning a participation grade is to encourage active learning for everyone.

Formally, participation will have two assessments.

First, every two weeks you will submit on canvas a short reflection of the what you learnt in class in the previous fortnight. While writing this reflection you are required to relate something you learnt in class to the world around you. You can relate a topic from class something you read in the news, or something

you experienced in life. The possibilities are up to you. The reflection cannot exceed 400 words, but can be shorter. If the reflection makes sense, it will be assigned a 2 participation points, if submitted but hard to understand, it will get 1 participation point, and if not submitted will earn 0. There will be a recurring assignment on canvas for you submit this reflection.

Second, you will keep note of your individual participation during class, making a note of every time you ask a question, answer a question I ask, or contribute to the class discussion using the chat button on our online learning platform. These participation logs will also be submitted every two weeks (using the same assignment on Canvas). This participation will also be capped to 2 points per week.

## UNIVERSITY POLICIES

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UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on [the UBC Senate website](#).

### Academic Accommodation for Students

The University accommodates students with disabilities who have registered with the Disability Resource Centre. The University also accommodates students whose religious obligations conflict with attendance or scheduled tests or exams. Other absences for varsity athletics, family obligations or other similar commitments are not part of University policy and students should not assume that they would be accommodated. Academic accommodations help students with a disability or ongoing medical condition overcome challenges that may affect their academic success. Students requiring academic accommodations must register with Access & Diversity. A&D will determine that student's eligibility for accommodations in accordance with Policy 73: Academic Accommodation for Students with Disabilities. Your instructors do not determine academic accommodations, however, your instructor may consult with Access and Diversity should the accommodations affect the essential learning outcomes of a course. If you have a pressing issue those conflicts with an exam, you should discuss this with your instructor as soon as possible. Refer to the UBC Calendar for details of 'academic concession'.

### Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity.

At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work.

Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of

plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

For International Students - Issue of controversial topics in online learning

During this pandemic, the shift to online learning has greatly altered teaching and studying at UBC, including changes to health and safety considerations. Keep in mind that some UBC courses might cover topics that are censored or considered illegal by non-Canadian governments. This may include, but is not limited to, human rights, representative government, defamation, obscenity, gender or sexuality, and historical or current geopolitical controversies. If you are a student living abroad, you will be subject to the laws of your local jurisdiction, and your local authorities might limit your access to course material or take punitive action against you. UBC is strongly committed to academic freedom, but has no control over foreign authorities (please visit <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,33,86,0> for an articulation of the values of the University conveyed in the Senate Statement on Academic Freedom).

Thus, we recognize that students will have legitimate reason to exercise caution in studying certain subjects. If you have concerns regarding your personal situation, consider postponing taking a course with manifest risks, until you are back on campus or reach out to your academic advisor to find substitute courses. For further information and support, please visit: <http://academic.ubc.ca/supportresources/freedom-expression>

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All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline.

All class sessions will be recorded and posted on Canvas for the use of those in class.

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