

ECON/PPOL 5351

Yatang Lin

Spring 2026

Syllabus: Environmental Economics

Time: Wed 06:30PM - 09:20PM

Location: Rm 1409, Lift 25-26 (60)

Instructor: Yatang Lin

6052 LSK Building

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Office Hours: by appointment

TAs: Li Zhaowei (zliif@connect.ust.hk)

Zijin Zhao (zzhaocs@connect.ust.hk)

Course Objective and Learning Goals

The course is designed to introduce students to key contemporary concepts in environmental economics and equip them with the approaches in economics that are generally applied to analyze environmental problems and policies. The class will be divided into two parts. Part I will cover the ways in which markets fail to efficiently allocate resources in the presence of pollution along with the class of Pigouvian policies used to correct those failures. Part II will focus on the empirical techniques used by economists to assign monetary values to environmental costs and benefits.

Prerequisites

You should have completed Calculus and at least introductory microeconomics courses (MATH 1012/1013/1020/1023 and ECON 2103 or equivalent courses) before taking this class.

Requirements

The following are required for successful completion of the course: (1) three problem sets that involve problem solving, (2) an individual project (3) a final exam, and (4) class participation.

Course Website

Throughout this class, we will use the Canvas online discussion board. We encourage you to ask questions on the Canvas forum for clarifications, questions about concepts, or about your projects. Using Canvas for Q&A would allow students to see and learn from

other students' questions. Both the TA and the instructor will regularly check the board and answer questions posted, although everyone else is also encouraged to contribute to the discussion. A student's respectful and constructive participation on the forum will count toward his/her class participation grade. DO NOT email your questions directly to the instructors or TAs (unless they are of personal nature) — we will refrain answering your questions regarding course materials or problem sets through email.

Grading

Grades will be determined based on the following allocation:

Three problem sets: 15%; Individual paper: 15%; Mid-term exam: 30%, final exam: 35%, Participation 5%. The instructor reserves the right to make small adjustments to final total grade score.

Problem Sets

We will have 3 problem sets. The purpose of these problem sets is to help cement the theoretical economic foundations underlying the models we will discuss in class. You are welcome to work on problem sets with your classmates, but I expect everyone to write up their own set of solutions to each assignment. Writing up your own solution set will help ensure that you understand the concepts. If you work with classmates on assignments, please make a note of who you worked with at the top of your assignment.

AI-use Policy

Generative AI tools (e.g., ChatGPT) may be used to generate ideas, brainstorm, and support your literature search, but AI outputs can be inaccurate, incomplete, or otherwise unreliable and may also crowd out independent critical and creative thinking if overused. You may not submit AI-generated work as your own; any AI-assisted text, code, or other material included in your submission must be clearly disclosed and cited like any other source. You are responsible for verifying and validating anything produced with AI assistance, and points may be deducted for nonfactual claims, fabricated/unsupported citations.

Exam Policy

Students who miss the test and/or exam on the scheduled dates would be marked zero. Alternative arrangements would only be granted to students with critical medical conditions, supported by sick leave certificates issued by medical doctors for the date of

the exam. There will be NO make-up exams under any circumstances. A student who is excused from the test on medical grounds will have his/her final examination covering the weight of the missed test.

Both exams are going to be conducted in class. Detailed rules on exams will be disseminated later.

Individual Project

Students will complete an individual project in the form of an empirical research proposal.

Your goal is to develop a project that can ultimately generate convincing empirical evidence on an interesting, policy-relevant question, potentially serving as a foundation for a thesis.

Your goal is to come up with a project that will ultimately produce convincing empirical evidence on an interesting, policy-relevant question, which might be developed into your thesis. Typical research subjects include evaluation of a policy using data, or the hedonic analysis of urban amenities you find interesting. You might also want to identify an existing empirical article in the economics literature for which you can obtain similar data. The proposal should include detailed descriptions of where you can find the data needed, and the econometric strategy you plan to use to test your hypotheses.

The final product will be a paper of approximately 10 pages, including references (12-point font, double-spaced).

Deadline of submission: May 15th, 2026 (midnight). Late submissions will not be accepted.

Readings

The course does not have a required textbook, but you may find the following textbook useful for your study:

Charles Kolstad, Environmental Economics (Oxford University Press, 1st edition 2000, or 2nd edition 2010)

I will assign other readings as we progress. They are not required but they will help you understand the course materials and put them in context.

Course Outline (*Tentative, instructor reserves the right to modify the content*)

Part I Market Failures and Pigouvian Policy

Week 1: Feb 4

- Course Overview
- Externalities

Week 2: Feb 11

- Coase theorem

Week 3 Feb 25 (PS1 assigned)

- Pigouvian Policies

Week 4 Mar 4

- Cap and Trade
- Policy Evaluation

Week 5: Mar 11 (PS1 due , PS2 assigned)

- Equity
- Extraction of renewable and non-renewable resources, biodiversity

Week 6: Mar 18

- Environmental Valuation: Hedonic Method
- Midterm Review

Week 7 Mar 25

- Midterm Exam
- Environmental Valuation: Travel cost method

Week 8 Apr 1

- Pollution and Health
- Value of Statistical life and Defensive Investments

Week 9 Apr 15 (Apr 3-8 Midterm break, PS2 due, PS3 Assigned)

- Contingent Valuation
- Monitoring and Enforcement

Week 10 Apr 22

- Transportation
- Climate Change 1

Week 11 Apr 29

- Climate Change 2

Week 12 May 6 (PS3 Due)

- ESG and Green investment
- Final exam review