

SOSC 2310: Introductory Environmental and Health Economics

Hong Kong University of Science and technology

2023 Fall

Course Information

- Teaching Team:
 - Instructor: Kwan To Wong (Email: kwanto@ust.hk; Room: 2356) [Office Hours: Fri 1500-1600]
 - TA: Deng Ying (Email: daphned@ust.hk; Room 2359) [Office Hours: TBA]
- Class Venue: 2504
- Class Room: Tue & Thur 1500-1620

Course Description

This course introduces students to basic analysis in environmental and health economics. The emphasis is on **how the economic models and concepts can be used to analyze environmental and health problems**. The course is divided into three sections. The first section of the course will develop **the basics of your economic toolbox**. We will include a brief review of basic economic analysis and then spend a substantive amount of time discussing the economic concepts that are most relevant to the environment and health. The second and third sections discuss **the key topics in environmental and health economics**. Particular issues include market failure, externalities, common goods and public goods, valuation of non-market goods, environmental regulations, pollution and health, determinants of health, asymmetric information and moral hazard, the role of government in improving health.

Learning Objectives

The aim of the course is to foster an intuitive understanding of environmental and health issues from an economist's point of view. Upon completion of the course, most students should be able to

- explain basic economic models
- develop economic intuition to grasp the essence of social problems
- employ the methods to value non-market goods (such as life and nature) and the controversies
- apply economic models to analyze environmental/health issues
- evaluate environmental/health policies from economics' point of view

Prerequisites and Restrictions

No prerequisites are specified for this course. However, basic knowledge of maths, economics and statistics are needed to better understand the course materials.

- Find the maximum/minimum of a given function
- Simple calculus:
 - e.g. take derivative: $y = x^2 \Rightarrow \frac{dy}{dx} = 2x$

Textbooks and Readings

We will be drawing on many different resources for this course including journal articles, newspaper articles, and textbooks.

In order to understand the details of the course content, please check the following books:

- Microeconomics by Jeffrey Perloff, Pearson Press. [P]
- Tietenberg, T. H. & Lewis, L. (2015) Environmental & natural resource economics. 10th Edition. Boston: Pearson. [TL]

- Harris, J. M. & Roach, B. (2018) Environmental and natural resource economics: a contemporary approach. Fourth edition. London: Routledge. [HR]
- The Economics of the Environment, by Peter Beck and Gloria Helmand, Prentice Hall, 2010. [BH]
- The Economics of Health and Health Care, by Folland, Goodman, Stano, and Danagoulian, Routledge. [FSD]

Assessment Strategies

There are four components for assessment:

1. News article analysis/film review (25%)
2. Infographic presentation (30%) [10% infographic; 20% presentation]
3. End-term in-class test (35%)
4. Participation (10%)

News Article Analysis or Film Review

Topics that are related to the environment and health are almost constantly in the news. To encourage you to think like an economist, in this course you will need to discuss one newspaper article that relates to environmental or health issues.

After you read an article, write an analysis of the article including a brief summary of the article and then discuss how the concepts covered in this course inform your analysis of the news article (**no more than 3 pages in total**). In your analysis, you can either support or oppose (some of) the views expressed in the article; but regardless of your position, your arguments should be related to what you have learned in this course or self-study on economics. You may draw graphs or collect related data/documents to support your analysis.

The articles must come from mainstream newspapers (New York Times, Wall Street Journal, Financial Times, The Economist, and major reliable Chinese newspapers). You should clearly state the title of the article and the publication in which you found it in your analysis. Please also provide a link or a paper copy of the article.

Alternatively, you can also write a film review. In the class, we will show a documentary film on China's environmental problems, and you can write a review related to the film.

Only four letter grades for each problem set will be offered:

A(Outstanding); B (Good); C(Satisfactory); F (Unsatisfactory)

Submission Due: Dec 6th, 2023 3pm

Infographic presentation

This is intended to be a group project. The desired group size is around 4 people (+/- 1 should be fine). The maximum size is 6 people for the group upon approval from TA with strong justification. If some students like doing the project on his/her own, I am fine with it — still there will be no bonus nor penalty for small(er) group size. The group needs to produce an infographic to discuss any environmental or health issues/policies of their interest and present their findings and analysis using economic intuitions/concepts/theories/models learnt in the class or from other readings. Because this is a group work, peer evaluation mechanism will be applied. Each group member need to present orally and individual performance in the presentation will be considered. More details will be released in the later period. To encourage collaboraton among team members, there will be peer evaluation for each group — the proportion is 20% of the group work (→ 6% of the final grade)

For both infographics and presentation (peer evaluation as well):

Only four letter grades will be offered:

A(Outstanding); B(Good); C(Satisfactory); F(Unsatisfactory)

End-term Test

- (Open- or Close-) book Test (around 60 mins)
- The exact format (TF/MC/Short Questions/Essay) is will be announced later

The purpose of the test is to give students (& teachers as well) a chance to assess their learning, especially the economic concepts, models, analysis and the application to enviromental/health context.

Class Participation

We will have in-class Q&A/discussions/exercises from time to time. And your participation will be both valuable to both the course, classmates, I and **YOU**. It will be great if you identify typos or errors in slides/course materials, and discussing topics with TA or instructor during class time. Therefore, I allocate 10% of the grade on the class participation.

Only four letter grades for each problem set will be offered:

A(Outstanding); B(Good); C(Satisfactory); F(Unsatisfactory)

E-mailing

Please put “SOSC2310” in the subject line of all e-mail correspondence. E-mail should be reserved for questions related to scheduling, appointments or administrative issues. The first contact person is our **TA**. So please send **ALL** of your inquiry to our her first. We will normally reply the email not later than 48 hours during working days (normally within 24 hours). Moreover, I have found that it is not possible to answer questions about class materials by e-mail; please come to our office hours or schedule an appointment if you have any questions related to course materials. In fact, I highly encourage all of you forming a study group — you might form a group for the project anyway — and study together. I will not respond to certain emails students sent including emails for missed class for which there was no presentation, emails to request an extension on an assignment for which the syllabus already established the deadline.

Grading Policy

- **Late submission:** late delivery of due items will NOT be accepted.
- **Re-grade policy:** If you want to ask for regrading, please submit your argument in writing along with your assignment. We will reassess your entire assignment using the copies we saved for regrading. The answer to “[grade grubbing](#)” is “no” and your grade may end up lower after reassessment.
- **[Grading Guidelines](#)**

Miscellaneous

Please keep your cellphone muted. If you have emergencies, if you need disability-related accommodations, if you have medical information you wish to share with me, or if you need special arrangements for the exams, please see me privately after class or during office hours.

Free-rider Policy

- [Guidance to avoid or deal with the free-rider issue.](#)
- I will not define anybody to be "free rider" directly. If all the other team members agree that they don't want to keep collaborating with one person, please comply with the following rules to split the team:
 1. Each group member needs to send an email to TA to justify their request.
 2. The peer evaluation (6% of final grade) will not be split.
 3. The student who leaves the group must find a & presentation topic as well as the infographic.

Academic Integrity

The work you submit must be your own. Unattributed use of the work of others is plagiarism, and is not acceptable. If you do feel the need to include text from another source, set it off in quotes and include a proper citation. Do not put yourself in jeopardy by submitting an essay that includes material that appears to be plagiarized. We will use a web-based software turnitin <http://www.turnitin.com/> to check the originality of your submitted work. The Office of the Provost offers resources to help you avoid plagiarism and copying. Please read all of the materials here: <http://tl.ust.hk/integrity/student-1.html>

Course Outline (Tentative)

Week	Date	Topic	Readings
1	Sept 5 Sept 7	Course Overview Principles of Economic Analysis	P: Ch1; HR: Ch1
2	Sept 12 Sept 14	Demand Supply and Market Equilibrium Comparative Statics	P: Ch2; BH: Ch2 P: Ch3; BH: Ch2
3	Sept 19 Sept 21	Consumer Surplus and Producer Surplus Welfare Analysis	P: Ch8,9; BH: Ch5 P: Ch10
4	Sept 26 Sept 28	Social Optimum and Economic Efficiency Externalities	P: Ch10 P: Ch18; BH: Ch10; HR: Ch3; TL: Ch2
5	Oct 3 Oct 5	Coase Theorem	P: Ch18; BH: Ch11 P: Ch18; BH: Ch3
6	Oct 10 Oct 12	Common Resources Public Goods	P: Ch18; TL:13; HR: Ch4 P: Ch18; BH: Ch11; HR: Ch4
7	Oct 17 Oct 19	Valuing the Environment: Revealed Preference and Stated Preference	HR: Ch6; BH: Ch6
8	Oct 24 Oct 26	Discounting and Value of Statistical Life Cost-Benefit Analysis	P: Ch16; BH: Ch14; HR: Ch5 TL: Ch5; HR: Ch7
9	Oct 31 Nov 2	Depletable Resource Allocation Recyclable Resources	TL: Ch6 TL: Ch7, TL: 8
10	Nov 7 Nov 9	Pollution and Health Documentary Film	TL: Ch19; HR: Ch8
11	Nov 14 Nov 16	Asymmetry Information, Moral Hazard, and Adverse Selection Health Care and Environmental Regula- tions	P: Ch19; FGS: Ch10 FGS: Ch20
12	Nov 21 Nov 23	Climate Change and Course Review End-term Test	TL: Ch17; Ch 20
13	Nov 28 Nov 30	Presentation Presentation	