

## **Syllabus: Urban and Environmental Economics**

**Time:** TuTh 01:30PM - 02:50PM

**Location:** Rm 1034, LSK Bldg

**Instructor:** Yatang Lin

6052 LSK Building

[liny@ust.hk](mailto:liny@ust.hk)

**Office Hours:** TuTh 4:20-5:00PM in Yatang's office (6052 LSK Building), or by appointment

**Tutorial time and location:** Fr 04:30 - 05:20 PM, Rm 2404, Lift 17-18

**TAs:** Teresa Lau ([ectylau@ust.hk](mailto:ectylau@ust.hk))

### **Course Summary**

The course is designed to introduce students to key contemporary concepts in urban and environmental economics, and to equip them with the approaches in economics that are generally applied to analyze urban/environmental problems and policies. The course will be divided into two parts. Part I will cover topics on the economics of cities, including rent and wage determination, the location decisions of households and firms, agglomeration economics, housing, transportation and land use. Part II will focus on environmental economics, covering topics on externalities, Pigouvian policies and environmental valuation.

### **Intended Learning Outcomes**

This course has the following intended learning outcomes:

- (1) Introduce students with main ideas and topics in urban economics, including agglomeration, urban land use, transportation and housing market.
- (2) Introduce students with main ideas and topics in environmental economics, including externality, Pigouvian policies and environmental valuation.
- (3) Familiarize the students with economic reasoning behind public policy making and train them to evaluate urban/environmental policies in an economic perspective.
- (4) Expose students to research topics and empirical methods at the frontier of urban and environmental economics.

### **Prerequisites**

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

## **Requirements**

The following are required for successful completion of the course: (1) 3 problem sets that involve problem solving; (2) mid-term and final exams; (3) Individual project; (4) class participation.

## **Grading**

Grades will be determined based on the following allocation:

Three problem sets: 15%; Individual project: 15%; Mid-term exam: 30%, final exam: 35%.  
Class 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.

## **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.

## **Individual Project**

Students have the following options for an individual project

1. Evaluation of a particular urban or environmental policy
2. An empirical research proposal

The final product will be a paper about 10 pages long including references (font 12 and double spacing).

For a policy evaluation project, you can choose any given urban or environmental policies you are interested in, describe the background of the policy, and discuss your evaluation of the policy in the following aspects: (1) Effectiveness: is the policy implemented successfully? are there any obvious loopholes? (2) Efficiency: does the policy achieve its goal with the lowest economic and social cost? Are there any significant deadweight loss? (3) Equity: how will the policy affect different groups of agents in the society differently? (4) Administration cost: is the policy costly administratively (think about monitoring, reporting, verification and enforcement cost)?

For a research proposal, 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.

Deadline of submission: May 20<sup>th</sup> midnight, 2019. Late submissions will not be accepted.

### **Tutorials:**

There will be weekly tutorials for this course starting from week 3 (March 1). Problem sets and other questions will be discussed in the tutorials. We will discuss and provide feedbacks on the individual projects at tutorials as well.

### **Electronics**

No phones, you can use your laptop to take notes during lectures.

### **Email Policies:**

Please send all emails about logistic enquires to [linyt@ust.hk](mailto:linyt@ust.hk) or [ectylau@ust.hk](mailto:ectylau@ust.hk) . I prefer to answer all questions on course materials in person (during my office hour or after class) because it is very hard to understand the questions exactly or explain things in emails, so emails on course contents will not be answered (I would ask you to come to my office hour) unless they are short and be answered with one or two sentence.

### **Readings**

*Textbook:* Arthur O'Sullivan, Urban Economics (8th edition). McGraw-Hill 2011. ISBN 978-0073511474.

Jan K. Brueckner, Lectures on Urban Economics. MIT Press 2011. ISBN 978- 0262016360.

*Additional References (Not Required):* Edward Glaeser, Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier. Penguin Books 2012. ISBN 978-0143120544

Moretti, Enrico. The New Geography of Jobs. Houghton Mifflin Harcourt, 2012. ISBN 978-0547750118

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

#### **Week 1: Jan 31**

Introduction to Urban Economics

#### **Week 2: Feb 12 and Feb 14**

Microeconomics and econometrics review

#### **Week 3: Feb 19 and Feb 21 (PS1 Assigned)**

Why do cities exist

Why do firms cluster

**Week 4: Feb 26 and Feb 28**

City sizes

Urban growth (and decline)

**Week 5 Mar 5 and Mar 7 (PS1 Due)**

Urban land rent

Land use

**Week 6: Mar 12 and Mar 14 (PS2 Assigned)**

Neighborhood choices

Midterm review

**Week 7: Mar 19 and Mar 21**

**Midterm**

Intro to environmental economics

**Week 8: Mar 26 and Mar 28 (PS2 Due)**

Externality, cap and trade

**Week 9: Apr 2 and Apr 4**

Environmental valuation 1

**Week 10: Apr 9 and Apr 11 (PS3 Assigned)**

Environmental valuation 2

**Week 11: Apr 16 and Apr 25 (Term Break from Apr 18- Apr 23)**

Housing

**Week 12: Apr 30 and May 2 (PS3 Due)**

Transportation

**Week 13: May 7 and May 9**

Climate change and cities

Final exam review