HKUST ECON5220   Instructor: Philip Neary

Microeconomic Theory 2 (PhD Econ)   Office: LSK 6058

Time: 09:00-10:50 Tues & Thurs   Office Hours: XXXX

Location: Rm 5508   Email: prneary@ust.hk

1 Course Objective

This course begins with the economics of information and then looks at applications of this to markets, the theory of social choice, bargaining and mechanism design. We will then move on to general equilibrium. If we have time remaining, we will choose some topics from the following list: repeated games, evolutionary game theory, networks, matching, and game theoretic models in finance.

2 Teaching Assistant

Yimeng Zhang. **yzhangdq@ust.hk**
Office: LSK 4063
Office hours: Wednesdays 2pm-4pm

3 Prerequisites

ECON 5210 (PhD Micro 1)

4 Required Readings

1. Mas-Colell, A., M. Whinston and J. Green (1995): *Microeconomic Theory*, Oxford University Press, 1995.

2. Osborne, M. and A. Rubinstein (1994): *A Course in Game Theory*, MIT Press, 1994.

3. Last years lecture notes will be posted on Canvas

4. Some papers & other readings will be posted on Canvas

5 Reference Books on Reserve in Library

1. Mas-Colell, A., M. Whinston and J. Green (1995): *Microeconomic Theory*, Oxford University Press, 1995.

2. Osborne, M. and A. Rubinstein (1994): *A Course in Game Theory*, MIT Press, 1994.

6 Course Intended Learning Outcomes

Upon completion of this course, you will:

1. be able to understand models and major issues regarding individual decision making processes;

2. be able to reproduce proofs of some classic results but also be able to explain intuitively each model's perspectives and results

3. understand the power and limitation of standard models;

4. be able to apply the theory and principles studied in class to real world applications;

5. be well prepared for other economics courses in the program.

7 Course Requirement and Evaluation

- Evaluation will be based on attendance (10%), problem sets (10%), a midterm exam (30%), and a final exam (50%).

- If you miss **three** or more classes without permission, your final grade will be F.

- Problem sets will be handed out about every 2 weeks week. Solutions are due at the beginning of class the following week. Late submissions will not accepted.

- The weekly problem sets may be solved in groups (of 3 or less), but each student must hand up their own solutions. If you are working in groups you must write on the cover page of your solutions who you worked with.

- Exams:

  - The midterm exam will be a closed book 90 minute exam held in class on **Thursday March 28, 2018**. It will start sharply at 09:00.
  - The final exam will be a closed book 180 minute exam. It will be cumulative: all material covered throughout the semester is fair game. The time will be arranged centrally by the Economics department.

  In the case of absence at an exam due to medical reasons, the student is required to submit a medical certificate issued by a registered medical practitioner. Appropriate documentation will be required for absences due to other reasons.

- Announcements, lecture notes, and supplementary materials (if any) will be updated onto the course website on CANVAS.

- Extra office hours will be arranged for the week before the midterm and the week before the final exam.

- There is no lecture on Tuesday February 5 nor Thursday February 7 due to Chinese New Year, and no lecture on Thursday March 28 due to the midterm.

8 Course Outline (tentative, subject to change.)

- Part 1: Incomplete Information Games

    - Information Structures

        * Correlated Equilibrium (3)
        * Knowledge and Equilibrium (5)

    - Perfect Bayesian Equilibrium (13)

- Part 2: Information Economics

    - Signalling and Screening (13)
    - Principal Agent Problems (14)

- Part 3: Welfare Economics and Incentives

    - Social Choice Theory (21)
    - Axiomatic Bargaining (22)
    - Mechanism Design (23)

- Part 4: General Equilibrium Theory

    Pure exchange economy (15)
    Equilibrium and welfare (16)
    Existence of equilibrium (17)

- Part 5: Further topics

9 Academic Integrity Policy

Honesty and Integrity is a central value in HKUST. Please be aware of the importance and maintain high standard of honesty in both the problem sets and examinations in this course. Familiarise yourself to the university rules and the HKUST academic honour code by visiting following website: `http://www.ust.hk/vpaao/integrity/`.