

ECO2030: Microeconomic Theory I, Unit 2

Winter 2017

Instructor: Xianwen Shi

Time and Location: 9:10–11:00am Mondays in WW119 and Wednesdays in BA2135

Office Hours: GE 208, Fridays 3:00-4:00pm

Email: xianwen.shi@utoronto.ca

Course Webpage: <http://portal.utoronto.ca> (Blackboard)

TA: David Walker-Jones, david.walker.jones@mail.utoronto.ca

TA Tutorial: Wednesday 11:10am-1:00pm in BA3012

Course Description

The first part of this course provides a self-contained introduction to game theory. We study strategic games (with complete or incomplete information) and extensive games (with complete or incomplete information). We introduce several important solution concepts to make predictions. The second part of this course is designed to apply game theory tools you learned in the first part to study the theory of incentives under asymmetric information. We cover basic models of adverse selection (hidden information) and models of moral hazard (hidden actions), and also offer an introduction to the theory of mechanism design. These models, broadly referred to as information economics, have found applications in every field of economics and some parts of political science and computer science. The course concludes with a brief introduction of the theory of social choice (Arrow's impossibility theorem).

Texts

Required textbook:

- Mas-Colell, Whinston and Green (1995), *Microeconomic Theory* (MWG).

Other useful references:

- Osborne and Rubinstein (1994), *A Course in Game Theory* (OR).
- Salanie (1997), *The Economics of Contracts: A Primer* (SA).
- Jehle and Reny (2011), *Advanced Microeconomic Theory* (JR).

Online lecture notes:

- Dirk Bergemann: <http://www.econ.yale.edu/~dirkb/teach/501b-09-10/lecturenotes/lectures-501b-08-09-information.pdf>
- Steve Tadelis: http://faculty.haas.berkeley.edu/stadelis/Econ_206_notes_2006.pdf

Problem Sets

There will be four problem sets. They will be coarsely graded by our TA who will go through them in Tutorial Sessions.

Grade

Your grade for this unit will be 90% of your mark on the final examination (time and location, TBA) plus 10% of your average mark on the problem sets. Your grade in Eco2030 will be the average of your grades in both units.

Topics

Adverse selection: lemons market (MWG Ch13, SA Ch2, JR Ch8)

- Akerlof (1970), "The Market for Lemons," *QJE*.

Useful tools: envelope theorem, comparative statics, and stochastic order

- Milgrom and Segal (2002), "Envelope Theorems for Arbitrary Choice Sets," *Econometrica*.
- Milgrom and Shannon (1994), "Monotone Comparative Statics," *Econometrica*.
- Bagnoli and Bergstrom (2005), "Log-Concave Probability and Its Applications," *Economic Theory*.
- Shaked and Shanthikumar (2007), *Stochastic Orders*.
- Muller and Stoyan (2002), *Comparison Methods for Stochastic Models and Risks*.

Signaling (MWG Ch13, SA Ch4, JR Ch8)

- Michael Spence (1973), "Job Market Signalling," *QJE*.

Moral hazard (MWG Ch14, SA Ch5, JR Ch8)

- Holmstrom (1979), "Moral Hazard and Observability," *RAND*.

Screening: nonlinear pricing (MWG Ch13, SA Ch2-3, JR Ch8)

- Mussa and Rosen (1978), "Monopoly and Product Quality," *JET*.
- Maskin and Riley (1984), "Monopoly with Incomplete Information," *RAND*.

Mechanism design (MWG Ch23, JR Ch9)

- Myerson (1981), "Optimal Auction Design," *Mathematics of Operation Research*.
- McAfee and McMillan (1987), "Auctions and Bidding," *Journal of Economic Literature*.
- Tilman Borgers (2015), *An Introduction to the Theory of Mechanism Design*

Social choice (MWG Ch21, JR Ch6)

- Reny (2001), "Arrow's Theorem and the Gibbard-Satterthwaite Theorem: A Unified Approach," *Economics Letters*.
- Geanakoplos (2005), "Three Brief Proofs of Arrow's Impossibility Theorem," *Economic Theory*.