Advanced Microeconomic Policy Analysis II
API-110
Preliminary Course Syllabus

Faculty:
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API-110 is the second half of the two-semester sequence in advanced microeconomic analysis for MPA/ID students. The aim of this course is to further equip students with tools of modern microeconomic theory helpful in analyzing issues in international development. Topics covered will include game theory, the economics of information, contract theory, and touch on experimental/behavioral economics. The course will be co-taught with the first half taught by Jamison and the second by Khwaja.

The course meets twice a week for lecture:
Monday and Wednesday 8:40 – 10:00 am L-140

There will be two review sessions (students need only attend one) offered on Fridays by the Teaching Fellow:
Review Sections: Friday 10:10 – 11:30 pm and 11:40 – 1 pm in L-140

In addition, course assistants will hold weekly office hours to help with the homework and other basic questions. Students are encouraged to consult the Teaching Fellow or me for more advanced questions.

Note the following exceptions:

Class time changes: There will no class on March 5th and March 7th (week before Spring break). Instead there will be class on January 27th (10:10-11:30am, L-140) and February 17th (10:10-11:30am, L140). As a result there will be no TF review section on January 27th; it will be on Sunday, January 29th, 1:30-3pm, L140) and only one TF review section on February 17th (11:40am-1pm, L140).

Office Hours: Office hours for the first half (Julian) will be Wednesday from 10am-11:40am and for the second half (Khwaja) from 5-7 pm unless otherwise noted. You can sign up for office hours online at http://officehours.ordercubed.com/akhwaja/. Students are encouraged to sign up either in small groups or alone. If you are unable to attend office hours or they are full, please contact our assistant for a different time.

Prerequisites: API-109 or its equivalent. For equivalent courses, the same pre-requisites as in API-109 apply.

Grading:
Grades for the course will be assigned based on:
Problem Sets 10%
Participation 5%
Midterm 25%
Final 60%

Problem Sets: There will be a total of 8 Problem sets assigned generally every week (usually on a Thursday and due back on the Wednesday a week later). Problem sets should be turned in anytime by **8:35am on the due-date** in the course drop box. Problem sets turned in after that will be considered late and will not receive any credit. In rare cases, exceptions may be made if arranged with me in advance.

Examinations: There will be a midterm examination given in class on **Wednesday, February 29th, 2011** and the final examination is tentatively scheduled for **Wednesday, May 2nd, 2011** from 9am-noon.

Teaching Fellow:
Laura Trucco trucco@fas.harvard.edu

Course Assistants:
Sriram Kalyanaraman Sriram_Kalyanaraman@hks12.harvard.edu
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Readings:
In addition to the texts used in API-109 (MWG in particular), the following are required for this course: *Game Theory for Applied Economists* by Robert Gibbons (G), Princeton University Press, 1992. *The Economics of Contracts* by Bernard Salanie (S), MIT Press, 1999. The texts are available at the Harvard Coop and are placed on reserve at the KSG library. The students may also want to consult the following optional texts placed at the KSG library reserve:

- Fudenberg, Drew *Game Theory* 1991
- Kreps, David *Game Theory and Economic Modeling* 1990
- Dutta, P. *Strategies and Games* 1999
- Rasmusen, E. *Games and Information: An Introduction to Creative Theory* 2001
- Hart, O. *Firms, Contracts and Financial Structure* 1995
- Kreps, David. *A Course in Microeconomic Theory* 1990
- Varian, H. *Microeconomic Analysis* 1992
- Basu, K. *Analytic Development Economics* 1998
- Bardhan, P and C. Udry. *Development Microeconomics* 1999
**Tentative Schedule**

Date: January 11, 2012 (subject to change)

I. Game theory

**Lecture 1:**
- Formal Description of Games \((MWG \, 7.B)\)
- Playing Games

**I.A. Static Games of Complete Information**

**Lecture 2:**
- Normal Form Representation \((G \, 1.1.A)\)


**Lecture 3:**
Applications of NE
- Bertrand Competition \((G \, 1.2.B, \, MWG \, 12.C)\)
- Cournot Competition \((G \, 1.2.A, \, MWG \, 12.C)\)
- Tragedy of the Commons \((G \, 1.2.D)\)
- Team Production


**Lectures 4-5:**
- Mixed Strategies \((G \, 1.3.A)\)
- NE existence \((G \, 1.3.B)\)


**Lecture 6:**
Further Applications
- Corruption
- Norms and Reputation


**I.B. Dynamic Games of Complete Information**

**Lecture 7:**
- Perfect Information Games, Backward Induction \((G \, 2.1.A)\)
- Extensive & Normal Form Representation \((G \, 2.4.A, \, MWG \, 7.C-D)\)
- Randomization \((MWG \, 7.E)\)
Lecture 8:
• Subgame Perfect Nash Equilibrium (SPNE) (G 2.4.B, MWG 9.A-B)
• Stackelberg Competition (G 2.1.B)
• Bank Runs (G 2.2.B)


Lecture 9:
• Repeated Games (G 2.3.A, MWG 12.D)
• Infinitely Repeated Games, Folk Theorem (G 2.3.B&Appendix, MWG 12.Appendix A)

Online version available at: http://www.santafe.edu/research/publications/workingpapers/02-08-033.pdf


Lecture 10:
• Group-Lending, Guilds/Coalitions


Lecture 11:
• Experimental/Behavioral Game Theory


Lecture 12:
• Mid-term Review

Midterm (in class) – February 29th (Wednesday)

I.C. Static Games of Incomplete Information

Lecture 13:
• Static Bayesian Games \((G 3.1.A-B, MWG 8.E)\)
• Bayesian Nash Equilibrium (BNE) \((G 3.1.C, MWG 8.E)\)
• BNE Applications \((G 3.2.A, MWG 8.E)\)


I.D. Dynamic Games of Incomplete Information

Lecture 14:
• Perfect Bayesian Equilibrium (PBE) \((G 4.1, MWG 9.C)\)


Lectures 15-16:
• Signalling \((G 4.2.A)\)


II. Economics of Information & Contract Theory

Lecture 17:
• Introduction: hidden information, hidden action,
  Principal-Agent framework \((S 1, MWG 13.A, 14.A)\)
• Screening/Adverse Selection \((S 2.1-2, MWG 14.C)\)

Lecture 18:
• Screening Application: A Model of Red-Tape
  

Lectures 19-20:
• Moral Hazard (MH) (§ 5.1-2, MWG 14.B)
• MH Application: Share-cropping
  

Lecture 21: Applications to Development
• Field Interventions
• Student Topics

Lectures 22-3:
• Dynamic complete contracts - overview (§ 6.1, 6.4.5, 6.5 conclusion only)
• Incomplete Contracts (§ 7.1)
• Property Rights, Theory of the Firm (§ 7.2)
• Incomplete Contracts - Application (§ 6.1, 6.4.5, 6.5 conclusion only)
  

Lecture 24:
• Final Review, Endnotes