

**Advanced Microeconomic Policy Analysis II**  
**API-110**  
**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 meets twice a week for lecture:

- Monday and Wednesday 11:45 AM – 1:00 PM
- Room: L-140

There will be two review sessions (students need only attend one) offered on Fridays by the Teaching Fellow:

- Review Section 1: Friday 11:45 AM – 1:00 PM in L 130
- Review Section 2: Friday 2:45 PM – 4:00 PM in L 382

In addition, course assistants will hold weekly office hours (timing TBD) 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 6<sup>th</sup>. Instead there will be class (Mid-term review) on March 3<sup>rd</sup> (2:45 PM – 4:00 PM, Land). As a result, there will be no TF review section on March 3<sup>rd</sup>, but instead the TF will offer midterm reviews on Sunday March 5<sup>th</sup> 1:15 PM – 2:30 PM and 2:45 PM – 4:00 PM (L140). You need only attend one session.  
There will no class on April 17<sup>th</sup>. Instead there will be class on April 14<sup>th</sup> (2:45 PM – 4:00 PM in Land). As a result, there will be no TF review section on April 14<sup>th</sup>; the review session will be held on April 17<sup>th</sup> (at class time/location).

**Office Hours:** Monday 4:00 PM – 6:00 PM.

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 Wednesday and due back on the Wednesday a week later). Problem sets should be turned in anytime *by 10:10am 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.

### Due Dates:

- Problem Set 1: February 1<sup>st</sup>, 2017 (Wednesday)
- Problem Set 2: February 8<sup>th</sup>, 2017 (Wednesday)
- Problem Set 3: February 15<sup>th</sup>, 2017 (Wednesday)
- Problem Set 4: March 1<sup>st</sup>, 2017 (Wednesday)
- Problem Set 5: March 29<sup>th</sup>, 2017 (Wednesday)
- Problem Set 6: April 5<sup>th</sup>, 2017 (Wednesday)
- Problem Set 7: April 12<sup>th</sup>, 2017 (Wednesday)
- Problem Set 8: April 21<sup>st</sup>, 2017 (Friday)

**Examinations:** There will be a midterm examination given in class on **Wednesday, March 8<sup>th</sup>, 2017** and the final examination is scheduled for **Friday, May 5<sup>th</sup>, 2017** from 3PM-6PM.

**Teaching Fellow:**

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**Course Assistants:**

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Jared Goodman      [jared\\_goodman@hks17.harvard.edu](mailto:jared_goodman@hks17.harvard.edu)

**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
- Ray, Debraj. *Development Economics* 1998
- Bardhan, P and C. Udry. *Development Microeconomics* 1999
- Meier, G and Stiglitz. *Frontier of Development Economics: The Future in Perspective* 2001

## Schedule

	Day	Date	Topic
Week 1	Mon	23-Jan	Lecture 1
	Wed	25-Jan	Lecture 2
	Fri	27-Jan	REVIEW
Week 2	Mon	30-Jan	Lecture 3
	Wed	1-Feb	Lecture 4
			<b>1<sup>st</sup> problem set due 10:10am</b>
	Fri	3-Feb	REVIEW
Week 3	Mon	6-Feb	Lecture 5
	Wed	8-Feb	Lecture 6
			<b>2<sup>nd</sup> problem set due 10:10am</b>
	Fri	10-Feb	REVIEW
Week 4	Mon	13-Feb	Lecture 7
	Wed	15-Feb	Lecture 8
			<b>3<sup>rd</sup> problem set due 10:10am</b>
	Fri	17-Feb	REVIEW
Week 5	Mon	20-Feb	President's Day 2017- NO CLASS
	Wed	22-Feb	Lecture 9
	Fri	24-Feb	REVIEW
Week 6	Mon	27-Feb	Lecture 10
	Wed	1-Mar	Lecture 11
			<b>4<sup>th</sup> problem set due 10:10am</b>
	Fri	3-Mar	Lecture 12
			Change in Location/Time: Land, 2:45 – 4:00PM
	Sun	5-Mar	REVIEW
Week 7	Mon	6-Mar	No class
	Wed	8-Mar	<b>Midterm Exam</b>
	Fri	10-Mar	No Review (Spring recess begins)
Week 8	Mon	13-Mar	HOLIDAY: Spring Break
	Wed	15-Mar	
	Fri	17-Mar	

Week 9	Mon	20-Mar	Lecture 13
	Wed	22-Mar	Lecture 14
	<i>Fri</i>	<i>24-Mar</i>	<i>REVIEW</i>
Week 10	Mon	27-Mar	Lecture 15
	Wed	29-Mar	Lecture 16
			<b>5<sup>th</sup> problem set due 10:10am</b>
	<i>Fri</i>	<i>31-Mar</i>	<i>REVIEW</i>
Week 11	Mon	3-Apr	Lecture 17
	Wed	5-Apr	Lecture 18
			<b>6<sup>th</sup> problem set due 10:10am</b>
	<i>Fri</i>	<i>7-Apr</i>	<i>REVIEW</i>
Week 12	Mon	10-Apr	Lecture 19
	Wed	12-Apr	Lecture 20
			<b>7<sup>th</sup> problem set due 10:10am</b>
	Fri	14-Apr	Lecture 21
			Change in Location/Time: Land, 2:45 – 4:00PM
Week 13	<i>Mon</i>	<i>17-Apr</i>	<i>REVIEW (In class)</i>
	Wed	19-Apr	Lecture 22
	<i>Fri</i>	<i>21-Apr</i>	<i>REVIEW</i>
			<b>8<sup>th</sup> problem set due 10:10am</b>
Week 14	Mon	24-Apr	Lecture 23
	Wed	26-Apr	Lecture 24
	<i>Fri</i>	<i>28-Apr</i>	<i>REVIEW</i>
Week 15	<b><i>Fri</i></b>	<b><i>5-May</i></b>	<b><i>Final Exam</i></b>

## 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)
- Dominant Strategies, Iterated Elimination (G 1.1.B, MWG 8.B)
- Nash Equilibrium (NE) (G 1.1.C, Appendix 1.1.C, MWG 8.D)

\* Hardin, G. 1968. "The Tragedy of the Commons." *Science* 162: 1243-48 (JSTOR)

#### 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

\* Holmstrom, B. 1982. "Moral Hazard in Teams," *Bell Journal of Economics*, Vol. 13, No. 2. p. 324-340. (JSTOR)

#### Lectures 4-5:

- Mixed Strategies (G 1.3.A)
- NE existence (G 1.3.B)

\* Powell, Andrew. "Argentina's Avoidable Crisis: Bad Luck, Bad Economics, Bad Politics, Bad Advice," p. 1-58 in *Brookings Trade Forum*, 2002 Ed., Susan Collins.

#### Lecture 6:

Further Applications

- Corruption
- Norms and Reputation

Tabellini, Guido. 2008. "The scope of cooperation", *The Quarterly Journal of Economics*, 123, 905-950.

### 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)
- Stackleberg Competition (G 2.1.B)
- Bank Runs (G 2.2.B)

Diamond, D. and Dybvig, P. 1983. "Bank Runs, Deposit Insurance, and Liquidity," *Journal of Political Economy*, Vol. 91, No. 3., p. 401-419. (JSTOR)

Fearon, James D. 1995. "Rationalist Explanations for War" *Industrial Organization*, Vol. 49, No 3, pp. 379-414

### 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)

\* Cardenas, Juan-Camilo, Forthcoming. "Wealth Inequality and Overexploitation of the Commons. Field Experiments in Colombia". p 205-233 in "Inequality, Collective Action and Environmental sustainability", editors, Jean-Marie Baland, Pranab Bardhan and Samuel Bowles. Princeton University Press.

Online version available at:

<http://www.santafe.edu/research/publications/workingpapers/02-08-033.pdf>

Green, Edward J and Robert H. Porter. 1984 "Noncooperative Collusion under imperfect Price Information" *Econometrica*, Vol. 52, No. 1, pp. 87-100

### Lecture 10:

- Group-Lending, Guilds/Coalitions

Besley, T and Coate, S. 1995. "Group lending, repayment incentives and social collateral," *Journal of Development Economics*, Vol. 46(1) p 1-18. (HOLLIS)

Greif, A; Milgrom, P and Weingast, B. 1994. "Coordination, Commitment, and Enforcement: The Case of the Merchant Guild," *Journal of Political Economy*, Vol. 102, No. 4. p. 745-776. (JSTOR)

Greif, A. 1993. "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition," *American Economic Review*, Vol. 83, No. 3. p. 525-548. (JSTOR)

### Lecture 11:

- Experimental/Behavioral Game Theory I

Camerer, C. 1997. "Progress in Behavioral Game Theory," *Journal of Economic Perspectives*, Vol. 11, No. 4. p. 167-188. (JSTOR)

Rabin, M. 1993. "Incorporating Fairness into Game Theory and Economics," *American Economic Review*, Vol. 83, No. 5, p. 1281-1302. (JSTOR)

### Lecture 12:

- Mid-term Review

**Midterm (in class) – March 8<sup>th</sup> (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)

\* Palfrey, Thomas R., and Howard Rosenthal (1985). "Voter Participation and Strategic Uncertainty." *The American Political Science Review* 79, 62-78.

## I.D. Dynamic Games of Incomplete Information

### Lecture 14:

- Perfect Bayesian Equilibrium (PBE) (G 4.1, MWG 9.C)

Banerjee, A. 1992. "A Simple Model of Herd Behavior," *Quarterly Journal of Economics*, Vol. 107, No. 3, p. 797-817. (JSTOR)

Miller, N. 1997. "Efficiency in Partnerships with Joint Monitoring," *Journal of Economic Theory*, Vol. 77, No. 2, p. 285-299. (HOLLIS)

### Lectures 15-16:

- Signalling (G 4.2.A)
- Signalling Application: Job-Market (G 4.2.B, S 4.2, MWG 13.C)

\* Rodrik, Dani. 1998. "Promises, Promises: Credible Policy Reform via Signalling." *The Economic Journal* 99, Sep 1989 and in Federico Sturzenegger and Mariano Tommasi eds. *The Political Economy of Reform*. Cambridge, MA: the MIT Press.

## 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)

Akerlof, G. 1970. "The Market for "Lemons": Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, Vol. 84, No. 3, p. 488-500. (JSTOR)

### Lecture 18:

- Screening Application: A Model of Red-Tape

\* Banerjee, A. 1997. "A Theory of Misgovernance," *Quarterly Journal of Economics*, Vol. 112(4), p. 1289-1332. (COPY?)

Stiglitz, J and Weiss, A. 1981. "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, Vol. 71, No. 3, p. 393-410. (JSTOR)

**Lectures 19-20:**

- Moral Hazard (MH) (S 5.1-2, MWG 14.B)
- MH Application: Share-cropping

\* Ghatak, M and T. Guinnane “The Economics of Lending with Joint Liability : Theory and Practice. *Journal of Development Economics*, Vol.60, No.1, Oct. 1999. See Corrections to paper, *Journal of Development Economics*, Vol.69, No.1, Oct. 2002.

Besley, Timothy, and Maitreesh Ghatak. 2005. "Competition and Incentives with Motivated Agents." *American Economic Review*, 95(3): 616–636.

Eswaran, M and Kotwal, K 1985. “A Theory of Contractual Structure in Agriculture,” *American Economic Review*, Vol. 75(3), p. 352-366 (JSTOR)

Eswaran, M and Kotwal, K. “A Theory of Two-Tier Labor Markets in Agrarian Economies,” *American Economic Review*, Vol. 75, No. 1. (Mar., 1985), pp. 162-177. (JSTOR)

Foster, A and M. Rosenzweig, “A Test for Moral Hazard in the Labor Market: Contractual Arrangements, Efficiency and Health,” *Review of Economics and Statistics*, Vol. 76, 1994, pp. 213-27. (HOLLIS)

Otsuka, K, H. Chuma, and Y. Hayami, “Land and Labor Contracts in Agrarian Economies,” *Journal of Economic Literature* 30, December 1992, 1965-2018. (HOLLIS)

**Lecture 21: Applications to Development**

- Field Interventions
- Student Topics

**Lectures 22: Experimental – Behavioral Game Theory II**

(TBD)

**Lectures 23:**

- Dynamic complete contracts - overview (S 6.1, 6.4.5, 6.5 conclusion only)
- Incomplete Contracts (S 7.1)
- Property Rights, Theory of the Firm (S 7.2)
- Incomplete Contracts - Application (S 6.1, 6.4.5, 6.5 conclusion only)

Holmstrom, B and Roberts, J. 1998. “The Boundaries of the Firm Revisited,” *Journal of Economic Perspectives*, Vol. 12, No. 4. p. 73-94. (JSTOR)

Besley, T and Ghatak, M 2001. “Government versus Private Ownership of Public Goods,” *Quarterly Journal of Economics*, Vol. 116, No. 4, p.1343 – 1372

**Lecture 24:**

- Final Review, Endnotes