

### **ECONOMICS 8891.03: COLLOQUIUM IN ECONOMIC THEORY**

**COURSE OBJECTIVE:** A supervised workshop in which advanced graduate students report their latest research on the theme chosen by the instructor in advanced theory and related fields. The workshop provides a forum in which research *in progress* can be discussed in depth, to enable hands-on guidance on research directions, presentations and publication quality writing, in the group workshop setting. The colloquium instructor selects a research theme, on which a series of speakers, mostly advanced graduate students and occasionally faculty members, gives presentations on their advanced economic theory research in progress. The colloquium instructor may occasionally provide supplement lectures to advance the participants' research in progress.

**PREREQUISITES:** Permission of instructor and economics director of graduate studies. Open to students who passed Ph.D. qualifier exams in both micro and macroeconomics. Colloquium instructor may impose additional prerequisites. Letter grade only.

**CREDIT HOURS:** This colloquium course is repeatable to a maximum of 16 credit hours and of 8 completions, and may be offered every term. The course credit hours are variable so that a post candidacy graduate student may take it for one credit hour.

Credit Hours: 01 – 03 Variable  
Course Listing: G  
Grade: Letter grade  
Repeatability: Maximum 16 credit hours and Maximum 8 completions

**COURSE REQUIREMENTS:** The course meets twice per week. Students are required to submit a term research paper, present their work at least once, write critiques of each work presented, and participate actively in each class meeting. The exact weight of these requirements will be determined by a colloquium instructor.

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#### **Autumn Semester 2012**

#### **Colloquium Theme: Matching Models and Mechanism Design**

Colloquium Instructors: Professor Paul J. Healy  
Department of Economics  
465A Arps Hall, 1945 N. High Street  
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Office Hours: (TBA)

Course Overview: This course covers major research topics in the evolving frontiers of mechanism design in economic theory, focusing on matching models and their implementation.

Prerequisites: a successful completion of micro and macro qualifiers, and permission of colloquium instructor and economics director of graduate studies.

Course Grading: Students will receive a letter grade based on the following criteria: 30% for participation, 30% for presentation, and 40% for the resulting research paper

### **COURSE SCHEDULE OUTLINE:**

Week 1. Overview of matching models by Profs. Healy and Azrieli. See Roth & Sotomayor 1992.

Week 2 The marriage model with no side payments: theory.

Week 3 The marriage model with no side payments: experiments.

Week 4 The marriage model with side payments: theory.

Week 5 The marriage model with side payments: applications.

Week 6 The marriage model with side payments: experiments.

Week 7 Many-to-one matchings: theory.

Week 8 Many-to-one matchings: applications.

Week 9 Many-to-one matchings: experiments.

Week 10 Many-to-many matchings: theory

Week 11 Many-to-many matchings: applications

Week 12 Many-to-many matchings: experiments.

Week 13: Strategic considerations: theory

Week 14: Strategic considerations: experiments.

### **GENERAL READING LIST:**

#### **Surveys**

• Roth, A. E., Sotomayor, M., 1992. Two-sided matching. In: Aumann, R., Hart, S. (Eds.), *Handbook of Game Theory With Economic Applications*. Vol. 1. Elsevier, Amsterdam, Ch. 16, pp. 485–541

#### **Marriage model with no side payments:**

• Gale, D., Shapley, L., 1962. College admissions and the stability of marriage. *The American Mathematical Monthly* 69 (1), 9–15

• Roth, A., Vande Vate, J., 1990. Random paths to stability in two-sided matching. *Econometrica* 58 (6), 1475–1480

• Bogomolnaia, A., Moulin, H., 2004. Random matching under dichotomous preferences. *Econometrica* 72, 257–279

- Echenique, F., 2008. What matchings can be stable ? the testable implications of matching theory 33 (3), 757–768

**Marriage model with side payments:**

- Shapley, L., Shubik, M., 1972. The assignment game I: The core. *International Journal of Game Theory* 1, 111–130
- Mo, J. P., 1988. Entry and structures of interest groups in assignment games. *Journal of Economic Theory* 46, 66–96
- Vande Vate, J., 1989. Linear programming brings marital bliss. *Operations Research Letters* 8, 147–153
- Chambers, C., Echenique, F., 2009. Core matchings of markets with transfers, Caltech SS Working Paper 1298

**Many-to-one matchings:**

- Crawford, V., Kelso, A., 1982. Job matching, coalition formation, and gross substitutes. *Econometrica* 50, 1483–1504
- Roth, A., 1984b. Stability and polarization of interests in job matching. *Econometrica* 52, 47–57
- Roth, A., 1985. The college admissions problem is not equivalent to the marriage problem. *Journal of Economic Theory* 36, 277–288
- Roth, A., Sotomayor, M., 1989. The college admissions problem revisited. *Econometrica* 57, 559–570
- Crawford, V., 1991. Comparative statics in matching markets. *Journal of Economic Theory* 54, 389–400
- Abdulkadiroglu, A., Sonmez, T., 2003. School choice: A mechanism design approach. *American Economic Review* 93, 729–747
- Echenique, F., Oviedo, J., 2004. Core many-to-one matchings by fixed-point methods. *Journal of Economic Theory* 115 (2), 358–376
- Echenique, F., Yenmez, M. B., 2007. A solution to matching with preferences over colleagues. *Games and Economic Behavior* 59 (1), 46–71

**Many-to-many matchings:**

- Echenique, F., Oviedo, J., 2006. A theory of stability in many-to-many matching markets. *Theoretical Economics* 1 (2), 233–273

**Strategic considerations:**

- Roth, A., 1982. The economics of matching: Stability and incentives 7, 617–628
- Leonard, H., 1983. Elicitation of honest preferences for the assignment of individuals to positions. *Journal of Political Economy* 91, 461–479

- Roth, A., 1984a. Misrepresentation and stability in the marriage problem. *Journal of Economic Theory* 34, 383–387
- Roth, A., 1989. Two sided matching with incomplete information about others' preferences. *Games and Economic Behavior* 1, 191–209
- Kara, T., Sonmez, T., 1996. Nash implementation of matching rules. *Journal of Economic Theory* 68, 425–439

### **Experiments:**

- Chen, Y., Sonmez, T., 2002. Improving efficiency of on-campus housing: An experimental study. *American Economic Review* 92, 1669–1686
- Chen, Y., Sonmez, T., 2006. School choice: An experimental study. *Journal of Economic Theory* 127, 202–231
- Niederle, M., Roth, A. E., 2008. Making markets thick: Designing rules for offers and acceptances, Stanford University working paper
- Niederle, M., Yariv, L., 2008. Matching through decentralized markets, working paper
- Echenique, F., Wilson, A., Yariv, L., 2009. Clearinghouses for two-sided matching: An experimental study, Caltech SS Working Paper 1315
- Niederle, M., Yariv, L., 2009. Decentralized matching with aligned preferences, NBER Working Paper Number 14840
- Niederle, M., Roth, A. E., Unver, U., 2010. Unraveling results from comparable demand and supply, Stanford University working paper

**Academic Misconduct: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct ([http://studentaffairs.osu.edu/info\\_for\\_students/csc.asp](http://studentaffairs.osu.edu/info_for_students/csc.asp)).**

**Any student who needs an accommodation based on the impact of a disability should contact the instructor as soon as possible to discuss ways to meet his or her special needs. Such students should also contact the OSU Office for Disability Services (292-3307).**