

**Econ 445/838**  
**Design and Analysis of Economics Experiments**

Department of Economics  
George Mason University  
Spring 2013

**Instructor**

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Class: Thursday 7:20 -10:00 pm  
Location: New Arts Building L008  
Office Hour: Thursday 6:20-7:20

**Teaching Assistant**

Siyu Wang  
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**Course Description**

This class provides an introduction to the design and analysis of economics experiments. The topics covered will be useful to anybody interested in running scientific experiments, but will be primarily geared toward behavioral experiments as conducted by economists and psychologists.

**Textbooks**

Required: Box, Hunter and Hunter. (1978) Statistics for Experimenters. Wiley.  
Recommended: Cox, D. R. (1958) Planning of Experiments. Wiley.

**Grades**

Your course grade will be based 25% on the nine problem sets (drop one with lowest grade, the rest equally weighted), 10% on the presentation of one of the reading assignments, 25% on the midterm exam and 40% on the final exam. Good class participation can improve your evaluation.

**Office Hours**

Professor Houser will hold office hours in our classroom after class on Thursday , or by appointment. Teaching Assistant Siyu Wang will hold office hour every Thursday, 6:20 to 7:20 pm. You can also reach Siyu by phone 703-989-2261 or email at [swang14@gmu.edu](mailto:swang14@gmu.edu)

**Outlines**

Notes are available at <http://mason.gmu.edu/~dhouser/courses.htm>

**1. Science and Experiments**

*Box, Hunter & Hunter, Chapter 1; Cox, Chapter 1; Houser website, Lecture 1*

**2. Review of Basic Statistics**

Probability distributions, parameters, statistics

*Box, Hunter & Hunter, Chapter 2; Houser website, Lecture 2*

**3. Comparing Two Entities**

a. Relevant reference sets and distributions

b. Randomized Paired Comparison Design

c. Blocking and Randomization

*Box, Hunter & Hunter, Chapter 3; Houser website, Lecture 3*

#### **4. Comparing k treatment means**

a. Completely Randomized Design - One-way ANOVA

b. Randomized Block Design - Two-way ANOVA

*Box, Hunter & Hunter, Chapter 4; Houser website, Lecture 4*

#### **5. Designs with more than one blocking variable**

a. Latin squares

b. Greaco and hyper-geometric squares

c. Balanced incomplete block designs

*Houser website, Lecture 5*

#### **Articles**

Kosfeld, Michael et al., 2005, "Oxytocin increases trust in humans", *Nature*, Vol. 435

Brosnan, Sarah F. and Waal, Frans B.M. de, 2003, "Monkeys Reject Unequal Pay", *Nature*, Vol. 425

Cox, James C., 2004, "How to Identify Trust and Reciprocity", *Games and Economic Behavior*, 46:2, 260-281

Gneezy, Uri and List, John A. "Putting Behavioral Economics to Work: Testing for Gift Exchange in Labor Markets Using Field Experiments", *Econometrica*, 74:5, 1365-1384

Fehr, Ernst and Bettina Rockenbach, 2003, "Detrimental effects of sanctions on human altruism", *Nature*, Vol. 422

Houser, Daniel and Robert Kurzban, 2002, "Revisiting Kindness and Confusion in Public Goods Experiments", *American Economic Review*, 92:4, 1062-1069

Chen, Yan and Sherry Xin Li, 2009, "Group Identity and Social Preferences", *American Economic Review*, 99:1, 431-457

Gneezy, Uri, 2005, "Deception: The Role of Consequences", *American Economic Review*, 95: 1, 384-394

List, John A. and David Lucking-Reiley, 2002, "The Effects of Seed Money and Refunds on Charitable Giving: Experimental Evidence from a University Capital Campaign". *Journal of Political Economy*, 110:1, 215-233

Charness, Gary and Martin Dufwenberg, 2006, "Promises and Partnership", *Econometrica*, 74: 6, 1579-1601

Filiz-Ozbay, Emel and Erkut Y. Ozbay, 2007, "Auctions with Anticipated Regret: Theory and Experiment", *American Economic Review* 97:4, 1407-1418

Chen, Yan and Tayfun Sonmez, 2006, "School Choice: An Experimental Study", *Journal of Economic Theory* 127:1, 202-231

Charness, Gary, Margarida Corominas-Bosch, Guillaume R. Frechette, 2007, "Bargaining and Network Structure: An Experiment", *Journal of Economic Theory*, 136, 28-65

Bo, Pedro Dal and Guillaume R. Frechette, 2011, "The Evolution of Cooperation in Infinitely Repeated Games: Experimental Evidence", *American Economic Review*, 101: 411- 429

#### **Students with disabilities**

Students with Faculty Contact Sheets for this class need to present them to the instructor as soon as possible. Other students requiring reasonable accommodations, as covered under the

Americans with Disabilities Act, should contact the Disability Resource Center (DRC) to open up a DRC file and discuss needed accommodations. Questions and requests for reasonable accommodations should be directed to DRC, 234 SUB I, phone (703) 993.2474 or email [dwyne@gmu.edu](mailto:dwyne@gmu.edu).

**Honor code**

George Mason University is an honor code university. Students pledge not to cheat, lie, plagiarize or steal in academic matters.