

Ph.D. in Business Program: Information Systems

**CIS 84000 – IS SPECIAL TOPICS SEMINAR:
Information Economics and Competitive Strategy (Fall 2018)**

Tentative Syllabus (subject to change)

Friday 2 – 4pm (Lecture), Room VC 13-254 (Baruch College)

4 – 5pm (Lab), VC 13-248

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Course Objectives and Description

Business organizations and markets use a bewildering variety of structures and practices to coordinate economic activities. Dramatic changes in information technology and the nature of economic competition are forcing firms to come up with new ways of designing markets, organizing work and interacting with customers. This course specifically investigates the role of information and the digitization of business processes in the existing diversity of organizations and markets, and in enabling the creating of new organizational forms.

Information economics has emerged as one of the most active and most relevant areas in information systems research. This class offers an exposure to fundamental ideas in the economics of information, systems, and strategy. It will review important economic concepts and also study how economic theory has been applied in current IS research. As a particular focus in this course, we will introduce the methodology of experimental economics and discuss applications in information systems and other business research areas.

The course is designed for is intended for Ph.D students in information systems as well as other business and economics research disciplines. We will typically discuss a mix of background readings, research method texts (on experimental economics), and a selection of seminal publications and current, cutting edge research articles. You are expected to be knowledgeable about these materials when you come to class. We will, however, spend most of the class time on the discussion of the reading materials. You will be assigned as a discussant of papers on a rotating basis. We will also use the experimental lab to develop and run some experiments using the otree experimental software platform.

There will be one group and one individual research project in the class. In a team setting, you will set up and run a replication of a previously published research study using the o-tree experimental software. As your term project you will propose, design, and (pilot) run your own experimental study on a topic in your area of interest.

Grading

Class Participation	25%
Team Project	25%
Term Project	50%

Required Text

Daniel Friedman and Shyam Sunder, *Experimental Methods: A Primer for Economists*, Cambridge University Press, Cambridge, MA, 1994.

Recommended Additional Readings (Optional)

Experimental Economics Methodology Readings:

1. Daniel Friedman and Alessandra Cassar, *Economics Lab: An Intensive Course in Experimental Economics*, Routledge, New York, NY, 2004.
2. Francesco Guala, *The Methodology of Experimental Economics*, Cambridge University Press, Cambridge, MA, 2005.
3. Nicholas Bardsley et al, *Experimental Economics: Rethinking the Rules*, Princeton University Press, 2010.
4. G.R. Frechette and A. Schotter (eds.), *Handbook of Experimental Economic Methodology*, Oxford University Press, 2015.
5. Vernon L. Smith, *Rationality in Economics: Constructivist and Ecological Forms*, Cambridge University Press, Cambridge, MA, 2009.

Experimental Economics Applications

6. Miller, R.M. and V. Smith, *How We Can Build Better Financial Markets*, 2005.
7. Dan Ariely, *Predictably Irrational: The Hidden Forces that Shape our Decisions*, Harper Collins, New York, NY, 2008.
8. Charles R. Plott and Vernon L. Smith (eds.), *Handbook of Experimental Economics Results*, North Holland, 2008.
9. John H. Hagel and Alvin E. Roth (eds.), *Handbook of Experimental Economics*, Volumes 1 and 2, Princeton University Press, Princeton, NJ, 1995 / 2015.
10. S. Durlauf, and L. Blume (eds.), *Behavioural and Experimental Economics*, Palgrave Macmillan, 2009.
11. Ananish Chaudhuri, *Experiments in Economics: Playing Fair with Money*, Routledge, New York, NY, 2009.
12. Jayson L. Lusk and Jason F. Shogren, *Experimental Auctions: Methods and Applications in Economic and Marketing Research*, Cambridge University Press, Cambridge, UK, 2007.

Recommended Readings on Information Economics (optional)

1. Soon-Yong Choi, Dale O. Stahl, and Andrew B. Whinston, *The Economics of Electronic Commerce*, McMillan Technical Publishing, Indianapolis, IN, 1997. Online version available for free download at <http://www.smartecon.com/> .
2. Hal R. Varian, Joseph Farrell, and Carl Shapiro, *The Economics of Information Technology: An Introduction*, Cambridge University Press, 2005.
3. Carl Shapiro and Hal R. Varian, *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press, Boston, MA, 1999.
4. Stan Liebowitz, *Re-Thinking the Network Economy: The True Forces that Drive the Digital Marketplace*, AMACON Publishing, The American Management Association, 2002.
5. Nir Vulkan, *The Economics of E-Commerce*, Princeton University Press, Princeton, NJ, 2003.
6. Yochi Benkler, *The Wealth of Networks*, Yale University Press, 2006.

A selection of research papers and additional readings will be distributed in class.

Group Project: Replication Study

Each team will replicate the original market experiment by Smith (1962) that pioneered the methods of experimental economics as an empirical research method. Team will use the o-tree experimental software package (or some other experimental software package) to conduct the replication study. Teams need to install the o-tree software, select a published study from literature (in consultation with the instructor), design the replication experiment, recruit study participants (from the subject pool in the SCIS department), run experiments, compare the results from the replications study with the original study, and present the project in class.

Term Project: Original Study

Each student will design and (pilot) run an original study that address an IS research question and uses the methods of experimental economics, using the o-tree (or any other) experimental software package. You will need to choose an original research question in your own area of interest (in consultation with the instructor), design your experiment, recruit study participants (from the subject pool in the IS department), pilot-test the experiment, and present the project and preliminary findings in class.

Course Outline (subject to change)

August 31 (Fri) : Introduction and Overview

Croson,R. and S. Gächter (2010), The Science of Experimental Economics, *Journal of Economic Behavior and Organization*, 73(1), 122-131.

Falk, A. and J.J. Heckman (2009), Lab Experiments are a major Source of Knowledge in the Social Sciences, *Science*, 326(5952), 535-538.

Gupta, A., K. Kannan, and P. Sanyal (2018), Economic Experiments in Information Systems, *MIS Quarterly*, 42(2).

September 7: Experimental Software Platforms

Friedman, Ch. 1 and Ch. 9

Chen et al (2016) oTree – An Open-Source Platform for Laboratory, Online, and Field Experiments, *Journal of Behavioral and Experimental Finance*, Vol. 9(10), 88-97.

Fischbacher, U., z-Tree: Zurich toolbox for ready-made economic Experiments, *Experimental Economics*, (2007) 10:171–178.

Palan, S. (2015) GIMS – Software for Asset Market Experiments

September 14: Experiments in the Laboratory

Friedman, Ch. 2

Friedman and Cassar (2004), *Economics Lab*, Ch. 8, Markets.

Smith, V.L. (1994), Economics in the Lab, *The Journal of Economic Perspectives*, Vol. 8, No. 1 (Winter, 1994), pp. 113-131.

September 21: Market Experiments

Bichler, M., A. Gupta, and W. Ketter, Designing Smart Markets, *Information Systems Research*, 21(4), 2010.

Smith, V.L. (JEP 1989), Theory, Experiment and Economics

Smith, V.L., (2006), Markets, Institutions, and Experiments, *Encyclopedia of Cognitive Science*, John Wiley.

September 28: Experimental Design

Friedman, Ch. 3

Smith (JPE 1991), Rational Choice: The Contrast between Economics and Psychology

October 5: Conducting an Experiment in the Lab

Friedman Ch. 4-6

October 12: Data Analysis and Inferences from the Experiment

Friedman, Ch. 6 & 7

Guala (2005)

October 19: Incentives in Experiments

Smith (AER 1976)

Guala (2005), Ch. 11

Bardsley et al (2010), Ch. 6

October 26: Theory Testing and Theory Building

Smith (JEBO 2010), Theory and Experiment: What are the Questions?

Davis, Eisenhardt, and Bingham (AMR 2007): Developing Theory through Simulation Methods

November 2: Group Project Presentation / Digital Field Experiments

Kohavi et al (DMKD 2009), Controlled Experiments on the Web

Kohavi et al (KDD, 2014), Seven Rules of Thumb for Web Site Experimenters

Goodson (Qubit, 2014), Most A/B Test Results are Illusory

November 9: Applications in IS Research I – Online Auctions & Electronic Markets

Readings TBA

November 16: Applications in IS Research II – Neuroeconomics

November 23: No Class – Thanksgiving

December 7: Term Project Presentations