

Ph.D. in Business Program: Information Systems

**CIS 84000 – IS SPECIAL TOPICS SEMINAR:
Information Economics and Competitive Strategy (Fall 2021)**

Tentative Syllabus (subject to change)

Thursday 4 – 6:30 pm, Room VC 13-254, Baruch College
Prof. Karl Lang, phone: 646-312-3092, VC 13-51, karl.lang@baruch.cuny.edu
Prof. Roumen Vragov, RVragov@qcc.cuny.edu

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, platforms and markets, and in enabling the creating of new organizational forms and strategies.

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 Ph.D students in information systems as well as other business and economics research disciplines. In class, 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 so that we can 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 develop and run some experiments using the otree experimental software platform.

In addition to a research paper presentation there will be one group and 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.

Required Text

Joachim Weimann and Jeanette Brosig-Koch (WBK), *Methods in Experimental Economics: An Introduction*, Springer Publishing, 2019

Recommended Additional Readings (Optional)

Experimental Economics Methodology Readings:

1. Daniel Friedman and Shyam Sunder, *Experimental Methods: A Primer for Economists*, Cambridge University Press, Cambridge, MA, 1994
2. Nicolas Jaquemet and Olivier L'Haridon (JH), *Experimental Economics: Method and Applications*, Cambridge University Press, 2018.
3. Peter G. Moffat, *Experimetrics: Econometrics for Experimental Economics*, McMillan International, 2016.
4. Vernon L. Smith, *Rationality in Economics: Constructivist and Ecological Forms*, Cambridge University Press, Cambridge, MA, 2009.
5. Nicholas Bardsley et al, *Experimental Economics: Rethinking the Rules*, Princeton University Press, 2010.
6. Francesco Guala, *The Methodology of Experimental Economics*, Cambridge University Press, Cambridge, MA, 2005.

Experimental Economics Applications

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

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.

Research Paper Presentation

Each student will be assigned a paper published in a top IS journal that presents a study using methods of experimental economics. Students will present the paper in class with a particular focus on discussing the experimental design, execution of the experiments, the analysis of the experimental data, and a discussion of the findings of the experimental study. The dates of the presentations will be arranged in class.

Group Project: Replication Study

Each team will replicate an original economic experiment using the o-tree experimental software package (or some other experimental software package) to conduct the experiment. 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 ISS department), run some 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 a (small scale) original study that addresses 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 ISS department), pilot-test the experiment, and present the project and preliminary findings in class.

Grading

Class Participation	15%
Research Paper Presentation	15%
Group Project	30%
Term Project	40%

Course Outline (subject to change)

August 26: Introduction and Overview

Sujoy Chakravarty, Daniel Friedman, Gautam Gupta, Neeraj Hatekar, Santanu Mitra, Shyam Sunder (2011), Experimental Economics: A Survey, *Economics and Political Weekly*, 96(35), 39-78.

WBK, Ch.1, The Study of Behavior.

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).

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

September 2: Methodological Foundations I

WBK, CH.2.1 – 2.3, Methodological Foundations (part 1)

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

September 9: Experimental Software Platforms

(Anh Luong – Guest Speaker)

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.

September 16: No Classes Scheduled

September 23: Methodological Foundations II

WBK, CH.2.4 – 2.6, Methodological Foundations (part 2)

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

September 23: Methodological Foundations III

WBK, CH.2.7 – 2.9, Methodological Foundations (part 3)

September 30 : Experimental Practice

WBK, CH.3

October 7: Experiments from a Statistical Perspective

WBK, CH.4.1 – 4.5

October 14: Data Analysis

WBK, CH.4.6 – 4.8

October 21: Human Decision Making

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

Kahneman (AER 2003), Maps of Bounded Rationality

Kahneman, Knetsch, and Thaler (1986), Fairness and the Assumption of Economics

October 28: Human-Machine Decision Making (Guest Speaker: Anh Luong)

Luong, Kumar, and Lang (2021): Human-Machine Collaboration
and Algorithmic Decision Making in Organizations

Brynjolfsson and Hitt (Science, 2017), What can Machine Learning
Do? Workforce Implications.

Gupta et al (INFORMS, 2019), Cognitive Challenges in Human-AI
Collaboration

November 4: Group Project Presentations

November 11: Electronic Market Design (Guest Speaker: Richard Shang, UNF)

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

Vragov, Shang and Lang (IJEC 2010), Online Auctions with Buy-It-Now Pricing

Lang, Shang, and Vragov (JAIS 2015), Consumer Co-Creation of Digital Culture
Products.

November 11: Social Commerce (Guest Speaker: Alex Pelaez, Hofstra Univ.)

Pelaez, Yu, and Lang (IJEC 2013), Social Buying

Jing and Xie (MSc 2011), Group Buying: A New Mechanism for Selling Through Social
Interactions

November 18: Neuroeconomics

Dimoka et al (MISQ 2012), Developing a Research Agenda for IS

Weinhardt et al (JAIS, 2017), A Platform for Conducting Neuro-IS Research

Camerer et al (ScandEco, 2004), Neuroeconomics

November 25: No Class – Thanksgiving

December 2: Open Topic

December 9: Term Project Presentations

The reading assignments and additional selected papers will be distributed in class