# Doctoral School in Economics, Finance and Management
# University of Luxembourg 2019-2020

## Course ID

*Doctoral Seminar on Experimental Methods in Economics and Finance*

### 1. Course details

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|---|---|
| Semesters: | 1 |
| Credit rating: | 1 ECTS |
| Teaching units | 15 |
| Pre-requisite(s): | None |
| Lecturers: | Tibor Neugebauer |
| Administrator: | - |
| Secretary: | *Roswitha Glorieux* |
| Tutors: | |
| Seminar times and rooms: | See below |
| Tutorial times and rooms: | TBA |
| **Communications** | **It is important that students should regularly read their University e-mails, as important information will normally be communicated this way.** |
| Reading week: | - |
| Mode of assessment: | Class Participation & Assignment & experiment in Liser |
| Additional work: | Design and conduct of an experiment |
| Examination Periods: | Research paper |
| Course WebPage: | Moodle.uni.lu |

## 2. Aims and objectives

### Aims

This PhD course introduces students to experimental research methods in economics and finance. We discuss experimental design, procedures and results. As the final aim, students design and conduct their own experimental research project. The topics addressed in this course include experimental methods including software programming, data analysis, experimental games and market experiments. We generally study laboratory design, survey experimental methods (Friedman and Cassar 2004) and the results of the experimental economics and finance literature (Roth and Kagel 1995, 2016). Students are introduced to experimental software programming (Fischbacher 2007). The course will be structured in five chapters.

### Learning Objectives

Upon successful completion of this course students will be able to:

- Understand the experimental research method.
- Know key results of experimental literature in economics and finance.
- Conduct their own experimental studies using the methods and tools learned.

## 3. Plan of semester: April 2020

Thursdays 3pm -5.30 pm
April 2/9/23/30 and May 23
BLF 2.13

## 4. Course details (by topics)

Course Outline:

Chapter 1 Introduction to Experimental Methods and zTree Programming
Chapter 2 Belief Elicitation and Gathering of Personality Data
Chapter 3 Non-parametric Statistics and Learning Models
Chapter 4 Experimental Economics Results
Chapter 5 Experimental Finance Results

## 5. Further information about assessment

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|---|---|
| **Examination(s)** | Final paper project: For the examination, students are required to conduct their own experiment with human subjects in the laboratory and write up a scientific paper. This task includes the planning of the experiment, the programming of experimental software, the writing of the experimental instructions, the instructing of subjects, the analysing of experimental data. Finally, the writing of the paper requires a motivation of the study including the literature review.<br><br>For the preparation of the experiment, students must test the software and present the instructions two weeks prior to the date of the experimental session.<br><br>There is a laboratory on campus at LISER where the experiments can be conducted. The laboratory contains work spaces for 30 subjects in the laboratory. On average, each subject should earn 25 Euro according to the lab rules. For each student, a budget of 750 Euro + 50 Euro cleaning fee is foreseen. |
| Weighting: | 100% |
| Date: | The laboratory experiment must be conducted in June/July 2019 |
| Length: | Each experimental session will last 90 minutes including the instruction session and the payment of subjects. |
| Structure: | Assignment<br>Pass |

# Experimental Economics and Finance

*Tibor Neugebauer*
*LSF*
*University of Luxembourg*

## BRIEF DESCRIPTION

This is a thorough doctoral level class aiming to provide students on how to design an experimental research project. We study the literature of experimental economics and finance. The course guides students to design an experimental test in the laboratory in order to address their research question. The class aims to provide to students the basic commands of experimental software programming. Students will use non-parametric statistics on experimental data. Finally, students write a research paper in experimental economics and finance.

## TEXT AND MATERIALS

Fischbacher, Urs, 2007, z-Tree: Zurich toolbox for ready-made economic experiments. Experimental Economics, Springer, vol. 10(2), 171-178.

Friedman, Dan and Alessandra Cassar, 2004, Economics Lab: An Intensive Course in Experimental Economics. Routledge.

Glimcher, Paul W., and Ernst Fehr, 2013, Neuroeconomics: Decision making and the brain. Academic Press.

Kahneman, Daniel, and Amos Tversky, 1979, Prospect theory: An analysis of decision under risk, Econometrica 47(2), 263-292.

Levitt, Steven D., and John A. List, 2009, Field experiments in economics: the past, the present, and the future. European Economic Review 53.1: 1-18.

Plott, Charlie and Sunder, Shyam, 1982, Efficiency of Experimental Security Markets with Insider Information: An Application of Rational-Expectations Models, Journal of Political Economy 90(4), 663-698.

Plott, Charlie and Sunder, Shyam, 1988, Rational Expectations and the Aggregation of Diverse Information in Laboratory Security Markets. Econometrica 56(5), 1085-1118.

Roth, Al E., and John Kagel, 1995, The handbook of experimental economics. Princeton University Press.

Roth, Al E., and John Kagel, 2016, The handbook of experimental economics, volume 2. Princeton University Press.

Selten and Neugebauer, 2013, Stock Market "Puzzles" Observed in the Experimental Call Auction and Continuous Double Auction Market – a Comparison of the Two Market Institutions, LSF working paper.

Smith, Vernon L, and Charlie Plott, 2008, Handbook of Experimental Economics Results. North Holland.

Smith, Vernon L, Suchanek, Gerry L, and Willliams, Bubbles, Arlington W., 1988, Crashes, and Endogenous Expectations in Experimental Spot Asset Markets. Econometrica 56(5), 1119-1151.

Sunder, Shyam, 1995, Experimental Asset Markets: A Survey, in: Roth/Kagel (Eds), Handbook of Experimental Economics, Princeton Univ Press.

Thaler, Richard (ed.) (1994), Quasi-Rational Economics, Russell Sage Foundation

Tversky, Kahneman, 1992, Advances in prospect theory: Cumulative representation of uncertainty, Journal of Risk and Uncertainty 5, 297-323.

## GRADING

60% written paper
40% presentation of topic

**INTENDED AUDIENCE**

This course is intended to help prepare doctoral students for research in the area of experimental economics and finance. It should certainly prepare you to be a researcher in the field!

**RESEARCH PROJECT PROPOSAL**

For most PhD students, the most difficult part of the program is the search for an interesting research topic. To acquire some experience selecting research topics, a main course requirement is to prepare a proposal for a project concerning issues we discuss in class. The proposal involves the formulation of a research question and an experimental design to generate data. I hope that a set of research ideas will come to you as the course progresses. This set will presumably consist of multiple ideas in different stages.

(1) One or two pages motivating the idea/research question. You want to identify a question, explain why it is important that we know more about it
(2) Once you motivate your research question, you need to think about the economics of your inquiry. This would probably take a page or two. Anticipating the results: Based on priors as economic equilibrium theory, what results should be expected? (What if you find something else?) Discussing this should take a few paragraphs.
(3) Embed your question in the literature, add a literature review. Like all you do in the paper, use this to motivate the importance of your research question.
(4) Prepare the experiment, and conduct your experiment with students in the laboratory.
(5) Analyze the data and present some preliminary results in a research paper.
(6) Present your paper and gather comments.

Students may propose to work on a joint project with other students in the class, subject to instructor's prior approval.

**LECTURE SCHEDULE**

(Note: Tentative and subject to change) see above

LIST OF TOPICS AND READING MATERIALS

See above