

# Introduction to Experimental Economics

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**This version: (First official draft)**

## Course instructors

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*Further instructors will be asked to join the course, and may do so based on availability and interest*

## Application procedure

### Goal and target audience

This course is for researchers on the doctoral or post-doctoral levels who are beginners in economic laboratory experiments. It will enable you to

- decide whether a laboratory experiment is appropriate to address some research question;
- find research questions in your area of interest that a laboratory experiment can address;
- develop an experimental design to address such a research question.

In addition, the course will offer you hands-on training on how to bring experiments to the laboratory. It will cover common practical issues, such as which software to use, how to recruit participants, or how to conduct an experiment.

The course will be most beneficial for you if you plan to run your own experiment soon. It will be particularly helpful for you if you consider using experimentTUM, TUM's laboratory for experimental research in economics.

### Application process

Write to Andreas Ostermaier no later than July 22, 2022 to sign up ([ostermaier@sam.sdu.dk](mailto:ostermaier@sam.sdu.dk)). Please state your primary research area and method. Mention also what motivates you to sign up for this course and whether you are planning to run an experiment.

If you have a research question or idea for an experiment that you would like to see as an assignment, remember to include a very brief proposal in your application. If you have any introductory readings, feel free to suggest these, too.

Please make sure you can attend the full course before signing up. From a pedagogical angle and out of fairness toward the other participants, you should not miss any part of the course for any reason, including the supervision of student exams.

## Course aims

### What this course is

The first key element of this course is experimental design. The ultimatum game serves as an example of a design that can be and has been used to address multiple research questions. In addition, we will work with other selected standard designs intensively.

The second key element is to understand when a laboratory experiment is an appropriate method to address a research question or to find research questions in your area of interest that laboratory experiments can address. We will thus consider recent research. You can strongly influence the contents of the course by suggesting a research question or idea (see application process).

The third key element is to understand how to conduct a laboratory experiment. Along with questions about software, recruitment of participants, or funding, a visit to the laboratory gives you a specific idea of the procedures.

Along with these key contents, we will be touching on various other issues, including criticism of the experimental method, and what can be done about potential weaknesses.

#### **What this course is not**

This is not a reading course, where we discuss (experimental) studies in any specific area. The focus is on the method, and we dive into the literature as needed to understand the method.

## **Course objectives**

#### **Knowledge Objectives**

You know how to design economic experiments. In particular, you are familiar with standard designs, such as the ultimatum game, the public goods game, and the gift exchange game, which can be adapted to address a wide range of research questions.

More generally, you know about design choices such as within-subjects versus between-subjects manipulations, real effort versus chosen effort tasks, one-shot versus repeated games, matching of participants for interaction, and belief elicitation, to name but a few.

You are familiar with strengths and weaknesses of the method, including internal versus external validity, replicability, and benchmarking against counterfactuals. You know how to address weaknesses by means such as the variation of remuneration, the choice of appropriate subjects, or control variables.

#### **Skills Objectives**

You are able to create and run your own experiments. Specifically, you can assess whether an experiment is the appropriate method to address a research question of interest and, conversely, come up with research questions that are best addressed with that method.

You can make the appropriate design choices to turn your research idea into an actionable experiment. You can deal with the trade-offs arising from these design choices. You know how to run your own experiments in the laboratory and understand how to analyze the data.

You can analyze and evaluate an experiment designed by someone else. You are thus able to make an informed choice whether to reference experimental research in your own work. You can also assess the quality of an experiment when you are asked to review a study.

#### **Learning Objectives**

The learning objectives consist in the acquisition of the aforementioned knowledge and skills.

## **Preliminary schedule**

The course will extend over three days. The tentative schedule is as follows.

First day:

- Visit to experimenTUM (interactive);
- The ultimatum game (lecture & discussion);
- Standard designs (first assignment, interactive).

Second day:

- Standard designs cont'd (first assignment, interactive);
- Common design choices (lecture & discussion);
- Designing your own experiment (second assignment, interactive).

Third day:

- Designing your own experiment, cont'd (second assignment, interactive);
- Benefits and pitfalls of lab experiments (lecture & discussion);
- Discussion of participants' projects (t.b.a. individually).

The course will typically at 9 a.m. in the morning and end no later than 5 p.m. in the afternoon. The afternoons of the first and second days are partly reserved for working on your assignments. I will always be around to assist you, commuting between the teams.

We may finish earlier on the third day to provide for time for individual discussions of your projects. If you are interested, you just let me know during the course.

## Core readings

Readings for the assignments are provided in class. For the first assignment on standard designs, these will be canonical articles that introduced or applied these designs. For the second assignment, I will suggest recent research articles, potentially based on the assignment that you proposed. Preparatory readings are not required.

## Course procedures

The seminar is scheduled to be held on July 25–27, 2022 in room 0505.Z1.534Z

(<https://portal.mytum.de/displayRoomMap?Z534@0505>). If so mandated by TUM's health and safety requirements, the seminar will be held online.

## Assessment

The assessment is based on the assignments in class.