

# Open Science – What is it and why do we need it?

## Special Seminar (Specseminārs)

Lecturer: Aisha Futura Tüchler, MSc in Cognitive Science, University of Vienna; Marie Curie Early Stage Researcher in the Innovative Training Network [e-LADDA](#) (Early Language Development in the Digital Age)

Apply by writing to: [aisha.tuechler@lu.lv](mailto:aisha.tuechler@lu.lv)

Time and Space: TBD - Online in MS Teams/in presence

Working language: English

Requirements for passing the course: attended at least 50% of classes, present 1 article and prepare 1 preregistration

### Overview

In 2015, the Open Science Collaboration published [an article](#) reporting results from repeating 100 experiments from the psychological sciences. Only 39 of the 100 replication attempts were successful, giving rise to the term “replication crisis”. The replication crisis refers to the widespread failure to reproduce results of published scientific studies, especially in the social and behavioural sciences. This has raised questions about the validity and reliability of research findings and has led to calls for more transparency and rigor in scientific research.

This course aims to give students an introduction to the causes and consequences of the replication crisis and make them familiar with possible solutions to increase reproducibility of studies.

### First part - Good Science, Bad Science

This first part of the course introduces students to scientific process and practices. We will discuss problematic research practices the learn how to avoid such problematic practices in the future.

Selected papers from the field from various disciplines (depending on students’ interests) will be presented and discussed in the group.

### Second part - Introduction to Experiment Design

During this part of the course, the students get acquainted with research questions and methods of their discipline and beyond. The aim is to familiarise the students with qualitative and quantitative research methods and explore their scope and limitations when tackling a concrete research question.

### Third part - Open Science and Preregistration

In the third part students will obtain guidance and practical experience in designing informative and transparent experiments and will learn to draft a short preregistration.