



Course and Examination Fact Sheet: Spring Semester 2025

10,154: Workshop Series in Experimental Research Tools

ECTS credits: 4

Overview examination/s

(binding regulations see below)

decentral - Presentation, Analog, Individual work individual grade (40%)

Examination time: Term time

decentral - Written work, Digital, Individual work individual grade (60%)

Examination time: Term time

Attached courses

Timetable -- Language -- Lecturer

[10,154,1.00 Workshop Series in Experimental Research Tools](#) -- English -- [Siren Charlotta](#)

Course information

Course prerequisites

Those students who plan to take this course as an optional course and without an examination should also register via the bidding system.

Participants do not need to be familiar with programming languages or coding, in general, to successfully master the workshops.

Learning objectives

Having successfully taken this class, students will be able to:

- Outline and describe what types of neurophysiological experiment tools exist
- Point the strengths and weaknesses of these tools
- State the basic reporting requirements for experimental research that utilizes neurophysiological tools
- Apply the chosen tools in their own research projects
- Use these technologies with increased confidence

Course content

This course is a part of the doctoral program "Methods in Experimental Research" (MER). MER aims to build up and develop the methodological competence of doctoral students in the humanities and social sciences regarding the organization, implementation, and analysis of human behavior experiments.

MER is aimed at doctoral students who wish to establish causality in their research in situations where a pure correlational analysis is not sufficient. The experimental method is an advanced approach to scientific work. MER requires that doctoral students have a basic understanding of the scientific method. Nevertheless, MER is a program that supports doctoral students across all disciplines who are interested in experimental methods for behavioral research and who wish to further develop their methodological competence in this subject.

MER consists of two successive courses/modules taking place in the fall and spring semester, respectively:

- "Basics in Experimental Research" (Fall)



· "Workshop Series in Experimental Research Tools" (Spring)

The spring course, "Workshop Series in Experimental Research Tools", provides doctoral students with the opportunity to learn about and successfully apply different neurophysiological experimental tools. This course is very hands-on. Students will be expected to apply a method at each workshop. At the end of the course, students are expected to have a good understanding of different neurophysiological experimental research tools (e.g., eye tracking) and how to apply them. We will be using iMotions biometric research platform and related tools in this course. You are welcome to the Spring course without first taking the Autumn course, and you can also decide to take just one of the courses.

Course structure and indications of the learning and teaching design

The course is structured into a workshop format. Each workshop consists of a general intro to the tool followed by a hands-on workshop where participants apply the tool and make conclusions based on generated data. The lecture will analyze and discuss the strengths and weaknesses of each tool. During the course, participants are also introduced to recent academic articles that have successfully applied the tools. It is important that participants read the articles beforehand and are ready to discuss about them. Before the last workshop, students are offered private coaching sessions. In addition, during the semester, the HSG Behavioral Lab will offer course participants access to their facilities, tools, and consultation advice. In the last workshop, students will present an experiment project where they applied a neurophysiological tool (preferably, but not necessarily, one of the tools introduced during the course). Students will then use oral feedback from the teacher and other participants to further develop their research project, which they will then submit as a final written project report by the end of the semester.

Workshop contents:

- **Workshop 1**

Introduction to the course and to the iMotions research platform (<https://imotions.com/>). Overview of different neurophysiological tools and guided tour to the HSG Behavioral Lab (<https://behaviorallab.unisg.ch/en>).

- **Workshop 2**

Students will learn about facial expression analysis, how it can be applied to recognize emotions, and how to use the tool in practice. Students will also be given basic information about Galvanic Skin Response (GSR), which can be used to measure sweat glands in the skin. For more information see: <https://imotions.com/products/imotions-lab/modules/fea-facial-expression-analysis/> and <https://imotions.com/products/imotions-lab/modules/eda-gsr-electrodermal-activity/>

- **Workshop 3**

Students will be introduced to the use of eye tracking as an experimental research tool. This tool enables to collect information about eye movements and fixations. With eye tracking, researchers can obtain an understanding of what attracts attention, which elements get ignored, in which order elements are noticed, and how elements compare to others. For more information, see: <https://imotions.com/eye-tracking/>

- **Workshop 4**

This workshop will introduce EEG (Electroencephalography) as a tool to detect cognitive processes to learn more about how we think and behave. Brain waves data from EEG can tell researchers how alert, motivated, or engaged we are or how difficult a task is if interpreted correctly. For more information see: <https://imotions.com/products/imotions-lab/modules/eeg-electroencephalography/>

- **Coaching session**

Private coaching session with the teacher to discuss the planned application of a neurophysiological experiment tool.

- **Workshop 5**

In this final session, students will present their experiment project where they have applied a neurophysiological tool and will get feedback from the lecturer and other participants.

Doctoral students are expected to actively participate in all workshops, and to be prepared accordingly.

Course literature

Instructions and readings for each of the workshops will be available in StudyNet.

Additional course information



In case of administrative and content-related questions, please contact the lecturer, Prof. Dr. Charlotta Sirén, at charlotta.siren@unisg.ch.

The date, time, and location information in the fact sheet is non-binding. Binding information on time and place will be published on the course website.

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination modalities

| | |
|------------------------------|----------------------------------|
| Examination type | Presentation |
| Responsible for organisation | decentral |
| Examination form | Oral examination |
| Examination mode | Analog |
| Time of examination | Term time |
| Examination execution | Asynchronous |
| Examination location | On Campus |
| Grading type | Individual work individual grade |
| Weighting | 40% |
| Duration | -- |

Examination languages

Question language: English
Answer language: English

Remark

Presentation of research project

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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2. Examination sub part (2/2)

Examination modalities

| | |
|------------------------------|----------------------------------|
| Examination type | Written work |
| Responsible for organisation | decentral |
| Examination form | Written work |
| Examination mode | Digital |
| Time of examination | Term time |
| Examination execution | Asynchronous |
| Examination location | Off Campus |
| Grading type | Individual work individual grade |
| Weighting | 60% |
| Duration | -- |

Examination languages



Question language: English

Answer language: English

Remark

Examination paper on the research project

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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Examination content

Examination paper written at home:

Doctoral students are required to use the tools introduced in this course to individually work on and develop a research project.

This includes collecting actual data and providing an initial analysis. They are then required to report on this small study in English. While the size of this experiment will be left to the discretion of the student, it is important that they demonstrate methodological competence. The guidelines for the report will be presented at the first workshop. The written project report is due at the end of the semester.

Presentation:

Students will present their research project in the last workshop. Students will receive oral feedback from the lecturer as well as other doctoral students. Students are expected to incorporate this feedback into their final written report.

Examination relevant literature

Instructions and readings for each of the workshop will be available on StudyNet after the bidding has ended.



Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.

Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW21) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 13 (Monday, 25 March 2025) are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 04 (Thursday, 23 January 2025);
- Examination information (supplementary aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 17 March 2025);
- Examination information (supplementary aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 14 (Monday, 31 March 2025);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before ending with de-registration period in CW 15 (Monday, 07 April 2025).