

Introduction to Neuroimaging (H002005)

Course size (nominal values; actual values may depend on programme)

Credits 4.0 Study time 120 h Contact hrs 30.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 1) English lecture 30.0 h

Lecturers in academic year 2018-2019

Krebs, Ruth	PP02	lecturer-in-charge
Braem, Senne	PP02	co-lecturer
Park, Haeme	PP02	co-lecturer

Offered in the following programmes in 2018-2019

	crdts	offering
Bachelor of Science in Psychology (main subject Theoretical and Experimental Psychology)	4	A
Master of Science in Psychology (main subject Theoretical and Experimental Psychology)	4	A
Exchange Programme in Psychology	4	A
Linking Course Master of Science in Psychology (main subject Teacher Education and Training)	4	A
Linking Course Master of Science in Psychology (main subject Theoretical and Experimental Psychology)	4	A
Preparatory Course Master of Science in Psychology (main subject Teacher Education and Training)	4	A
Preparatory Course Master of Science in Psychology (main subject Theoretical and Experimental Psychology)	4	A

Teaching languages

English

Keywords

neuroimaging, cognitive neuroscience, fMRI, EEG, TMS

Position of the course

Introduction to Neuroimaging is a course in the specialization Theoretical and Experimental Psychology. It builds on background courses in the Bachelor program related to cognitive psychology and neuroscience and provides an overview over the most important research methods in Experimental Psychology and Cognitive Neuroscience.

Contents

This course covers the following topics:

- Introduction to major neuroimaging techniques employed in cognitive neuroscience
- Focus on fMRI and EEG
- Additional techniques include TMS, PET, genetics, etc.
- Pros and cons of specific methods
- Integration of multiple methods
- Optimizing experimental designs
- Preview of data analysis
- Scientific integrity and ethical attitude

Initial competences

Psychonomics II (or similar)

Final competences

- 1 To evaluate advantages and disadvantages of current research methods in cognitive

neuroscience.

- 2 To judge the quality and relevance of original cognitive neuroscience research.
- 3 To approach research questions in cognitive neuroscience with appropriate methods.
- 4 To be aware of common challenges in study design and data analysis.
- 5 To understand the basic underlying neural mechanisms of major cognitive neuroscience methods.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture

Learning materials and price

Selected literature (costs: 10 euro)

References

- Senior, C., Russell, T, Gazzaniga, M.S. (Editors). Methods in mind (Cognitive Neuroscience). MIT Press.
- Ward, J. The student's guide to cognitive neuroscience. Psychology Press.

Course content-related study coaching

- interactive support using MINERVA
- by appointment

Evaluation methods

end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions

Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

- Written exam with 6 open questions

Calculation of the examination mark

The periodic evaluation accounts for 100% (20/20).