Module label: Essentials of fMRI Data Analysis with SPM and FSL

Module code: psy275

Credit points: 6.0 KP

Workload: 180 h

(Attendance: 56 h. (4 SWS), reading and practising: 124 h., total: 180 h.)

Used in course of study:
- Master's Programme Neurocognitive Psychology > Master module

Contact person:
- Riklef Weerda
- Peter Sörös

Entry requirements:
Enrolment in Master’s programme Neurocognitive Psychology, 3rd semester or higher.

Skills to be acquired in this module:
- Neuropsychological / neurophysiological knowledge
- interdisciplinary knowledge & thinking
- experimental methods
- statistics & scientific programming
- data presentation & discussion
- independent research
- scientific literature
- ethics / good scientific practice / professional behaviour
- critical & analytical thinking
- group work

This module offers a concise introduction to the basic principles of functional magnetic resonance imaging (fMRI). Students will gain essential knowledge about experimental design, data collection and analysis. Special emphasis will be laid on the statistical background of fMRI data analysis and a hands-on introduction to SPM and FSL, two widely-used and free software packages for fMRI data analysis and results visualisation.

Module contents:
1. Methodological basics of functional magnetic resonance imaging (fMRI)
2. Basic principles of fMRI experimental design and data collection
3. Statistical background of fMRI data analysis
4. Hands-on training in fMRI data analysis and results visualisation with SPM and FSL

Reader’s advisory:

Links:
- Language of instruction: English
- Duration (semesters): 1 Semester
- Module frequency: The module will be offered in the winter term, blocked in the first half (seven weeks).
- Module capacity: 20
- Reference text:
  PLEASE NOTE: We strongly recommend to take either psy170, psy270, psy275, psy280, or psy220 to gain methodological competencies (EEG, fMRI, TBS, HCI) that are needed for most practical projects and Master’s theses!

Modullevel: MM (Mastermodul / Master module)

Modulart: Wahlpflicht / Elective

Lern-/Lehrform / Type of program:
Part 1: 1 seminar (1 SWS)
Part 2: 1 supervised exercise (3 SWS)

Vorkenntnisse / Previous knowledge:

Examination:
Type of examination: written exam

Final exam of module:
Time of examination: end of winter term

Course type:
- Seminar: 1.00 SWS
- Exercises: 3.00 SWS

Comment: Frequency: Workload attendance
- SWS: 14 h
- WiSe: 42 h

Total time of attendance for the module: 56 h