neu305 - Essentials of fMRI Data Analysis with SPM and FSL

Module label
Essentials of fMRI Data Analysis with SPM and FSL

Module code
neu305

Credit points
6.0 KP

Workload
180 h
(1 SWS Seminar (SE) fMRI: Experimental Design, Data Collection and Analysis Total workload
45h: 14h contact / 31h literature work 3 SWS Supervised exercise (UE) Statistical Analysis of fMRI
Data with SPM and FSL Total workload 135h: 42h contact / 93h practice with sample fMRI data sets)

Used in course of study
• Master's Programme Neuroscience > Background Modules

Contact person
Module responsibility
○ Riklef Weerda
○ Peter Sörös

Entry requirements

Skills to be acquired in this module
+ Neurosci. knowlg.
++ Expt. Methods
+ Independent research
+ Scient. Literature
+ Social skills
+ Interdiscipl. knowlg.
++ Maths/Stats/Progr.
+ Data present./disc.
+ Scientific English
+ Ethics

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
Recommended textbook(s) or other literature:

Links
Language of instruction
English

Duration (semesters)
1 Semester

Module frequency
annually, winter term, first half

Module capacity
40

Modulart
je nach Studiengang Pflicht oder Wahlpflicht

Lern- / Lehreform / Type of program

Vorkenntnisse / Previous knowledge
Recommended previous knowledge / skills: statistics, MATLAB

Examination
Time of examination
Type of examination
Final exam of module
December
witten exam (multiple choice) In addition, mandatory but ungraded: continuous active participation

Course type
Comment
Frequency
Workload attendance
Seminar
0.00
WiSe
0 h
Exercises
0.00
WiSe
0 h

Total time of attendance for the module
0 h