neu280 - Research Techniques in Neuroscience

Module label
Research Techniques in Neuroscience

Module code
neu280

Credit points
6.0 KP

Workload
180 h
(2 SWS Lecture: 35 h contact / 45 h background reading / 10 h exam preparation 2 SWS Practical: 50 h contact / 30 h protocol preparation / 10 h exam preparation)

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

Contact person
Module responsibility

- Anna-Maria Hartmann

Authorized examiners

- Anna-Maria Hartmann
- Hans Gerd Nothwang
- Christiane Margarete Thiel
- John Neidhardt
- Martin Greschner
- Carsten Bantel

Entry requirements

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

1. have basic knowledge of different techniques (see content of the module) used in neurosciences
2. have basic knowledge of realizing clinical studies, generating questionaires and their biostatistical data analyses
3. have acquired practical skills in whole brain imaging (fMRI) and molecular techniques
4. have acquired practical skills in performing clinical studies

Module contents
Lecture topics:
1. Whole brain imaging (CT, MRI, fMRI, PET, EEG, MEG)
2. Animal Behaviour
3. Microscopy and Visualizing nervous system structure
4. Electrophysiology
5. Identifying Gene of Interest and Gene delivery strategies
6. Molecular Cloning, generation of transgenig organism, manipulating endogenous genes
7. Cell culture techniques
8. Biochemical assays and intracellular signalling
9. Clinical studies
10. questionnaire and biostatistics
11. judicial basics of scientific work

laboratory course
1. molecular methods (site directed mutagenesis, PCR, midi preparation, sequencing, bioinformatics)
2. fMRI
3. clinical studies

Reader's advisory
Guide to Research Techniques in Neuroscience, 2nd EditionAuthor(s) : Carter & Shieh
Print Book ISBN : 9780128005118
eBook ISBN : 9780128005972

Links
Language of instruction
English

Duration (semesters)
1 Semester

Module frequency
summer term / annually

Module capacity
20 (
Registration procedure / selection criteria: StudIP)

Modulelevel
...

Modulart
je nach Studiengang Pflicht oder Wahlpflicht
### Lern-/Lehrform / Type of program

**Vorkenntnisse / Previous knowledge**

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**Total time of attendance for the module**

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