neu440 - Visual Neuroscience

Module label: Visual Neuroscience
Module code: neu440
Credit points: 15.0 KP
Workload: 450 h
Used in course of study:
- Master's Programme Neuroscience > Research Modules

Contact person
Module responsibility
- Ulrike Janssen-Bienhold

Authorized examiners
- Alle hier genannten

Module counseling
- Karin Dedek
- Martin Greschner

Entry requirements
- attendance in pre-meeting, priority is given to students who attended neu140 BM Neurophysiology and/or neu150 BM Neuroanatomy

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
- During the module the students acquire advanced theoretical knowledge of the molecular and cellular characteristics of retinal circuits and physiology.
- + Students learn to plan and perform a research project independently (includes: literature research and usage of data banks (PUBMED, Gene Bank, Expasy etc.)
- + Students are introduced to scientific writing / have to write a scientific report.
- + Students acquire advanced skills in data analysis (including statistics, computational neuroscience, image analysis)
- + The module can serve the purpose of preparing for a Master's thesis.

Module contents
1. Independent performance of an individual research project in small groups. Dates are individually arranged with the respective supervisor. Available project topics will be presented in the pre-meeting. Methods include:
   - Option 1: Molecular Neuroscience
   - Option 2: Neuroanatomy
   - Option 3: Neurophysiology
2. Participation in the "Journal club" seminar, including presentation of the project and the results obtained.

Reader's advisory
- + http://webvision.med.utah.edu/ (H. Holb et al. (2016) The organization of the retina and visual system)
- + 20 to 30 selected original papers on vision research (depending on individual project)

Links
- Language of instruction: English
- Duration (semesters): 1 Semester
- Module frequency: halbjährlich
- Module capacity: unlimited
- Reference text: Regular active participation and presentation(s) within the scope of the seminar are required to pass the module. Furthermore, participation in a joint poster presentation of concurrent research modules is required to pass the module.

Modullevel: MM (Mastermodul)
Modulart: Wahlpflicht

Vorkenntnisse / Previous knowledge:

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<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
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<tbody>
<tr>
<td>Final exam of module</td>
<td>flexible, after individual project</td>
<td>Internship report</td>
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<table>
<thead>
<tr>
<th>Course type</th>
<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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<tbody>
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<td>Seminar</td>
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<tr>
<td>Projektorientiertes Modul</td>
<td>8.00</td>
<td>WiSe</td>
<td>112 h</td>
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Total time of attendance for the module: 140 h