# 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. knowl. Expt. methods
- Independent research
- Scient. literature
- + Social skills
- Interdiscipl. knowl.
- + 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/](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.

## Module level
MM (Mastermodul)

## Modulart
Wahlpflicht

## Lern-/Lehrform / Type of program

## Vorkenntnisse / Previous knowledge

<table>
<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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<th>Course type</th>
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