neu510 - Computation in Sensory Systems

Module label: Computation in Sensory Systems
Module code: neu510
Credit points: 15.0 KP
Workload: 450 h

Module can serve as preparation for a Master's thesis.

Entry requirements:
- attendance in pre-meeting, priority is given to students who attended BM Computational Neuroscience

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

Students perform individual research projects to learn:
- planning, performing and analyzing experiments and / or simulations
- working with scientific background literature on the specific context of the project
- oral presentation and discussion of backgrounds and results in the lab seminar
- write a scientific report
- prepare and present a scientific poster

Module contents:
Students can choose between five options (explained in more detail during the pre-meeting):
1. invertebrate somatosensory system (Kretzberg)
2. vertebrate visual system (Greschner)
3. vertebrate auditory system (Hildebrandt)
4. human perception-action cycle (Rieger)
5. advanced analysis of physiological data (Anemüller)

In options 1-4, depending on the student's interests and background, projects can be focussed on:
- experiments (neurophysiology / behavior)
- simulation
- data analysis or
- combinations of these approaches

In all systems, project can be focussed on experiments (neurophysiology / behavior), simulation, data analysis or combinations of these approaches.

Will be given to the students depending on the project

Reference text:
The timing of individual projects can be discussed with the supervisor. Projects can also be scheduled during semester breaks, part-time options (lasting more than 7 weeks) are available.

- priority for admission to the module is given to students who passed computational neuroscience background modules (neu240 / neu250)

- Participation in a joint poster presentation of concurrent research modules is highly recommended.
### Module Level

**Modulart**

Wahlpflicht

### Type of Program and Previous Knowledge

**Lern-Lehrform / Type of program**

Wahlpflicht

**Vorkenntnisse / Previous knowledge**

### Examination

<table>
<thead>
<tr>
<th>Final exam of module</th>
<th>Time of examination</th>
<th>Type of examination</th>
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<tbody>
<tr>
<td></td>
<td>flexible, 6 weeks after individual project</td>
<td>Internship report</td>
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### Course Type

<table>
<thead>
<tr>
<th>Course type</th>
<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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</thead>
<tbody>
<tr>
<td>Seminar</td>
<td></td>
<td>1.00</td>
<td></td>
<td>14 h</td>
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<tr>
<td>Projektorientiertes Modul</td>
<td></td>
<td>9.00</td>
<td>WiSe</td>
<td>126 h</td>
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**Total time of attendance for the module**

140 h