neu510 - Computation in Sensory Systems

Module label: Computation in Sensory Systems
Module code: neu510
Credit points: 15.0 KP
Workload: 450 h
Used in course of study:
- Master's Programme Neuroscience > Research Modules

Contact person:
- Jutta Kretzberg
- Martin Greschner
- Jannis Hildebrandt
- Jochem Rieger

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
- Scientific 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, projects 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

Reader's advisory:

Links:
- Language of instruction: English
- Duration (semesters): 1 Semester
- Module frequency: halbjährlich
- Module capacity: unlimited

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.
| Modullevel | MM (Mastermodul) |
| Modulart | Wahlpflicht |

**Lern-/Lehrform / Type of program**

| Vorkenntnisse / Previous knowledge |

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<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
<th>Internship report</th>
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<tbody>
<tr>
<td>Final exam of module</td>
<td>flexible, 6 weeks after individual project</td>
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<tr>
<th>Course type</th>
<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
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<td>Projektorientiertes Modul</td>
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**Total time of attendance for the module**

140 h