inf974 - Human Computer Interaction and Brain Computer Interfacing

Module label: Human Computer Interaction and Brain Computer Interfacing
Module code: inf974
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Engineering of Socio-Technical Systems > Embedded Brain Computer Interaction

Contact person:
Module responsibility:
- Jochem Rieger
- Andreas Lüdtke
Authorized examiners:
- Die im Modul Lehrenden

Entry requirements:
Skills to be acquired in this module:

Professional competences:
The students:
- Human computer interaction (HCI) in its interdisciplinary requirements focusing on the perspective from neurocognitive psychology.
- Basic knowledge of Brain Computer Interfacing

Methodological competences:
The students:
- Will acquire basic knowledge of neuroimaging and data analysis techniques.
- Will acquire Methodological competences: required for deriving statistical models to link brain and cognition/behavior.
- Will acquire skills and knowledge to critically reflect basic science theories in naturalistic context.

Social competences:

Self-competences:
The students will have knowledge of common experimental designs, data acquisition, and analysis methods and will have an insight of how to chose appropriate methods for their specific experiment. They are able to design and run a simple HCI/BCI experiment.

Module contents:
The module consists of a lecture and an exercise part:
Lecture:
- Background and concepts of cognitive psychology relevant for human computer interaction
- Sensation, perception, action
- Data acquisition and processing methods for brain computer interfacing.

Reader's advisory:

Links:
- Language of instruction: English
- Duration (semesters): 2 Semester
- Module frequency: Once a year
- Module capacity: unlimited
- Reference text: The module will start every summer term with part 1. Part 2 will be offered in the winter term.
- Modulelevel: AS (Akzentsetzung / Accentuation)
- Modultyp: Pflicht o. Wahlpflicht / compulsory or optional
- Lern-/Lehrform / Type of program: V+TPS
- Vorkenntnisse / Previous knowledge: Knowledge in statistical data analysis techniques and/or programming (e.g. Module N) is desirable
<table>
<thead>
<tr>
<th>Course type</th>
<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>2.00</td>
<td></td>
<td>SuSe or WiSe</td>
<td>28 h</td>
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<tr>
<td>Theorie-Praxis-Seminare (TPS)</td>
<td>2.00</td>
<td></td>
<td>SuSe or WiSe</td>
<td>28 h</td>
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**Total time of attendance for the module**: 56 h