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.

Modullevel
AS (Akzentsetzung / Accentuation)

Modulart
Pflicht o. Wahlpfllicht / 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></td>
<td>2.00</td>
<td>SuSe or WiSe</td>
<td>28 h</td>
</tr>
<tr>
<td>Theorie-Praxis-Seminare (TPS)</td>
<td></td>
<td>2.00</td>
<td>SuSe or WiSe</td>
<td>28 h</td>
</tr>
</tbody>
</table>

**Total time of attendance for the module**: 56 h