inf131 - Advanced Topics in Human Computer Interaction

<table>
<thead>
<tr>
<th>Module name</th>
<th>Advanced Topics in Human Computer Interaction</th>
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<tbody>
<tr>
<td>Module code</td>
<td>inf131</td>
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<tr>
<td>ECTS credit points</td>
<td>6.0 KP</td>
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<tr>
<td>Workload</td>
<td>180 h</td>
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**Used in degree programmes**

- Master's Programme Computing Science > Mastermodule
- Master's Programme Engineering of Socio-Technical Systems > Human-Computer Interaction

**Contact person**

- module responsibility
  - Susanne Boll-Westermann
  - Die im Modul Lehrenden

**Prerequisites**

This course aims to provide a sample of some of the most recent and significant advances in this exciting area. Topics may include: situational awareness, designing for attention, ambient/peripheral interaction, computer support cooperative work and social computing (CSCW), ubiquitous and context-aware computing, haptic and gestural interaction, audio interaction, gaze-based interaction, biometric interfaces, and embedded, physical and tangible computing, mobile and wearable interfaces. This course is explicitly not focused on the methods used in HCI practice (i.e., user-centered design cycle), but rather focuses on (recent) research.

Course prerequisite: Mensch-Maschine-Interaktion (Human Computer Interaction)

**Professional competences:**

The students:

- Demonstrate a systematic understanding of knowledge and critical awareness of a selection of the recent research advances in the area of HCI
- Evaluate and critique recent developments in the field of HCI on scientific and technological grounds
- Develop ability to conceptualize, design, implement, and evaluate user-centered systems and techniques.
- Plan and implement exploratory projects directed at envisioning and prototyping novel interactive artifact

**Methodological competences:**

The students:

- Analyze, review and critique research papers
- Carry out original research from start to finish
- Summarize and present research findings
- Work in a team to produce and evaluate prototypes of novel interactive artifact

**Social competences:**

The students:

- Work collaboratively in groups to analyze and review research papers
• Summarize and present research findings to rest of class
• Discuss how HCI concepts and methods can be applied in analysis, design, and evaluation of interactive technologies.
• Discuss social and ethical implications of interactive technologies

Self-competences:
The students:

• Be comfortable tackling original research questions
• Aptitude in conceptualizing and running both qualitative and quantitative HCI experiments
• Ability to summarize, analyze, and critique published (peer-review) research papers

Module contents
HCI is a fast-growing field, where scientific research in this area crosses multiple disciplines. The body of theoretical and empirical knowledge that can inform the design of effective systems is rapidly developing, which underscores the importance of current research in the field.

This course aims to provide a sample of some of the most recent and significant advances in this exciting area. Topics may include: situational awareness, designing for attention, ambient/peripheral interaction, computer support cooperative work and social computing (CSCW), ubiquitous and context-aware computing, haptic and gestural interaction, audio interaction, gaze-based interaction, biometric interfaces, and embedded, physical and tangible computing, mobile and wearable interfaces.

Structure of the Module:
The course will consist of lectures and lab sessions. Lab sessions will cover assignments (writing paper reviews, presentations, and peer assessment). In addition to assignments and a final exam, a small part of the course includes a mini group-based HCI project.

Lectures: 2 hours per week
Lab: 2 hours per week

This lecture will be held in English. All assignment submissions and exams will be in English.

The primary audience for this class are Master students of Computer Science following the Human Computer Interaction track.

Recommended reading
Suggested reading:


Links

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<tr>
<th>Language of instruction</th>
<th>English</th>
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<tbody>
<tr>
<td>Duration (semesters)</td>
<td>1 semester</td>
</tr>
<tr>
<td>Module frequency</td>
<td>semi-anual</td>
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<tr>
<td>Module capacity</td>
<td>24</td>
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</table>
Module: AS (Accentuation)

Module Type: Pflicht o. Wahlpflicht / compulsory or optional

Type of Program: V+P

Previous Knowledge: Interaktive Systeme

Examination:

- **Final exam of module**: At the end of the lecture period
- **Project and oral exams**

**Missing the exam**
If you cannot attend the exam with valid reasons (medical reason, exam schedule conflicts), you need to inform us before the exam, and submit a scanned copy of the evidence (medical certificate, course registration, boarding passes) within 5 days after the exam.

- If the reason for missing the exam is valid, you will do your first try of the exam for the parts that you missed on the same date as the second chance exam.
- If the reason is not valid, you will not get any score from that exam. If your overall score passed the course, you will not have a chance to take the exam again.

**Grading:**
Your grade will be calculated as follows:

<table>
<thead>
<tr>
<th>Scored Items</th>
<th>%</th>
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<tbody>
<tr>
<td>Final</td>
<td>40</td>
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<tr>
<td>Assignments A01-03</td>
<td>30</td>
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<tr>
<td>Mini HCI research project</td>
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Course Type:

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<th>Course Type</th>
<th>Comment</th>
<th>SWS</th>
<th>Course Frequency</th>
<th>Workload Attendance</th>
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<tbody>
<tr>
<td>Lecture</td>
<td></td>
<td>2</td>
<td>WinSem</td>
<td>28 h</td>
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<tr>
<td>Practical</td>
<td></td>
<td>2</td>
<td>WinSem</td>
<td>28 h</td>
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**Total attendance time for module**: 56 h