mam - Master’s Thesis Module

<table>
<thead>
<tr>
<th>Module label</th>
<th>Master’s Thesis Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module code</td>
<td>mam</td>
</tr>
<tr>
<td>Credit points</td>
<td>30.0 KP</td>
</tr>
<tr>
<td>Workload</td>
<td>900 h</td>
</tr>
<tr>
<td>Used in course of study</td>
<td>Master’s Programme Embedded Systems and Microrobotics &gt; Abschlussmodul</td>
</tr>
<tr>
<td>Contact person</td>
<td></td>
</tr>
</tbody>
</table>

Module responsibility
- Michael Sonnenschein
- Lehrende der Informatik

Authorized examiners
- Lehrende der Informatik

Entry requirements
Skills to be acquired in this module

The students prove that they are able to process and solve complex computer science tasks based on gained scientific knowledge and applied research methods. The students successfully implement a task especially by using their acquired professional and methodological knowledge and their professional and social competences. The accompanying seminar is used to discuss the master’s thesis methodically and content-related. During the seminar the exchange of research and practical experience fosters the students’ ability to discuss and evaluate their thesis with other students and experts. The master’s thesis is finished by a colloquium.

Professional competence
The students:

- Recognise and evaluate applied techniques and methods of their subject and are aware of their limits
- Design solutions for complex, possibly vaguely defined or unusual computer science tasks/problems and evaluate these with reference to state of the art computer science and technology
- Identify, structure and solve problems/tasks, also in new or developing subject areas
- Apply state of the art and innovative methods to solve problems, if necessary from other disciplines
- Relate knowledge from different disciplines and apply this new knowledge in complex situations
- Develop complex computer systems, processes and datamodels
- Are aware of the current limits and contribute to the development of computer science research and technology
- Discuss and evaluate recent computer science developments

Methodological competence
The students:

- Identify and develop one or more solutions
- Evaluate and apply tools, technology and methods sophisticatedly
- Examine tasks with technical and research literature, write an academic article and present their solutions academically
- Schedule processes and resources
- Apply project management techniques
- Combine new and original approaches and methods creatively
- Evaluate problems/tasks, including new or developing subject areas of their discipline and apply computer science methods for solutions and research

Social competence
The students:

- Communicate with users and experts convincingly
- Take reasonable decisions

Self-competence
The students:

- Recognise and evaluate applied techniques and methods of their subject and are aware of their limits
- Pursue the overall and special computer science development critically
- Implement innovative professional activities effectively and independently
- Recognise their abilities and extend them purposefully
- Reflect their self-perception and actions with regard to professional, methodological and social aspects
- Develop and reflect self-developed hypotheses to theories independently
- Work in their field independently

**Module contents**
The content of this module is an independent topic research. The research findings will be presented and discussed in a master's thesis colloquium.

**Reader's advisory**

**Links**

**Languages of instruction**
German, English

**Duration (semesters)**
1 Semester

**Module frequency**
halbjährlich

**Module capacity**
unlimited

**Modullevel**
Abschlussmodul (Abschlussmodul)

**Modulart**
Pflicht

**Lern-/Lehrform / Type of program**
Master's thesis

**Vorkenntnisse / Previous knowledge**

<table>
<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam of module</td>
<td></td>
<td>Master’s thesis, presentation and discussion.</td>
</tr>
</tbody>
</table>

**Course type**
Seminar

**SWS**

**Frequency**

**Workload attendance**
0 h