inf522 - Information Processing in Bio-Medical Research

Module name: Information Processing in Bio-Medical Research
Module code: inf522
ECTS credit points: 6.0 KP
Workload: 180 h

Used in degree programmes:
- Master's Programme Computing Science > Mastermodule
- Master's Programme Engineering of Socio-Technical Systems > Embedded Brain Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems > Human-Computer Interaction
- Master's Programme Engineering of Socio-Technical Systems > Systems Engineering

Contact person:
module responsibility
- Rainer Röhrig
- Die im Modul Lehrenden

authorized examiners
- Die im Modul Lehrenden
- Rainer Röhrig

Prerequisites:

Skills to be acquired in this module:
The students are aware of the requirements of biomedical research information processing and technologies. They know, develop and evaluate approaches.

Professional competences:
The students:

- Know the principles of biomedical research and identify resulting requirements and develop appropriate solutions
- Know the regulatory guidelines and assess the suitability of (IT) solutions or develop them
- Plan, apply, evaluate, report and assess IT solution evaluation studies
- Are aware of the biomedical research responsibility and the ethical challenges

Methodological competences:
The students:

- Search literature systematically
- Plan and assess clinical studies
- Develop concepts for a data privacy and GCP conform study management
- Know and apply medical classification systems
- Validate and run software for clinical trials, cohorts and registries
- Plan and assess healthcare IT studies

Social competences:
The students:

- Present solutions/results
- Discuss studies constructively, professionally and appropriately
- Discuss ethical biomedical research problems from different points of view

Self-competences:
The students:

- Reflect their own values and attitudes in the context of medical and biomedical research border areas
- Reflect their self-capacity with regard to the responsibility and the workload during the implementation of studies and the operation of study information systems

Module contents

- Basics / Biomedical research theory
- Systematic literature research, repositories
- Study schedule and method design
- Biomedical research regulatory framework
- Biomedical research ethics
- IT infrastructure in research / IT components incl. molecular medicine
- (Data) privacy
- Operating of software for clinical trials, cohorts and registries
- Clinical study report standards (Equator-Network), review process
- Evaluation of healthcare IT (GEP-HI and STARE-HI) / evidence based healthcare informatics

Recommended reading

Links

Languages of instruction

German, English

Duration (semesters)

1 semester

Module frequency

once a year

Module capacity

Unlimited

Modullevel

AS (Akzentsetzung / Accentuation)

Modulart

Pflicht o. Wahlpflicht / compulsory or optional

Lern-/Lehrform / Type of program

V+Ü

Vorkenntnisse / Previous knowledge

Examination

Examination periods

Type of examination

Final exam of module

At the end of the lecture period

Written exam

Course type

Comment

SWS

Course frequency

Workload attendance

Lecture

2

WinSem

28 h

Exercises

2

WinSem

28 h
<table>
<thead>
<tr>
<th>Course type</th>
<th>Comment</th>
<th>SWS</th>
<th>Course frequency</th>
<th>Workload attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total attendance time for module</strong></td>
<td></td>
<td></td>
<td></td>
<td>56 h</td>
</tr>
</tbody>
</table>