inf522 - Information Processing in Bio-Medical Research

Module label: Information Processing in Bio-Medical Research
Module code: inf522
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Computing Science > Angewandte Informatik
- 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

Entry requirements:
The students are aware of the requirements of biomedical research information processing and technologies. They know, develop and evaluate approaches.

Skills to be acquired in this module:

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

Reader’s advisory

Links

Languages of instruction
German, English

Duration (semesters)
1 Semester

Module frequency
once a year

Module capacity
unlimited

Modullevel
AS (Akzentsetzung / Accentuation)

Modularart
Pflicht o. Wahlpflicht / compulsory or optional

Vorkenntnisse / Previous knowledge
V+Ü

Examination
Final exam of module
At the end of the lecture period
Written exam

Course type
Lecture
Comment
2.00
Frequency
WiSe
Workload attendance
28 h

Exercises
2.00
WiSe
28 h

Total time of attendance for the module
56 h