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
Modulelevel  AS (Akzentsetzung / Accentuation)
Modulart  Pflicht o. Wahlpflicht / compulsory or optional
Lern-/Lehrform / Type of program  V+Ü

Vorkenntnisse / Previous knowledge

Examination

Time of examination  At the end of the lecture period
Type of examination  Written exam

Final exam of module

Course type  Comment  SWS  Frequency  Workload attendance
Lecture  2.00  SuSe  28 h
Exercises  2.00  SuSe  28 h

Total time of attendance for the module  56 h