inf964 - Foundations of STS Eng.: Psychology and Philosophy of Technology

Module label
Foundations of STS Eng.: Psychology and Philosophy of Technology

Module code
inf964

Credit points
6.0 KP

Workload
180 h

Used in course of study
- Master's Programme Engineering of Socio-Technical Systems > Fundamentals/Foundations

Contact person

Module responsibility

- Rainer Röhrig

Authorized examiners

- Die im Modul Lehrenden

Entry requirements

Skills to be acquired in this module

The module aims to provide an overview of theories of (Neuro)Cognitive Psychology with potential for application, concepts for technology assessments and ethical principals and their applicability for the field of (Neuro)Cognitive Psychology. In addition to these learning aims, they will experience chances and limitations of technology assessments. Thus, it will cover core concepts of cognitive psychology, their neuronal basis, basic knowledge of neuroimaging and data analysis techniques. Special emphasis will be put on research aiming at complex real-world settings and translation of basic science into practice. Examples of successful transfers will be analyzed. Parts 1 (lecture) and 2 (seminar) will run in parallel. The lecture provides the theoretical basis. In the seminar the material is consolidated by examples from the literature will be presented and critically analyzed and discussed.

Competencies:

Professional competences:
The students:

- Should have a repertoire of cognitive psychology concepts relevant for real world situations
- should be able to familiarize themselves with important ethical concepts, are able to explain them, and transmit them on scenarios of the technology assessment
- should know and be able to explain different forms and concepts of technology assessments (Expert, participatory, constructive, discursive Technology Assessment, Health Technology Assessment (HTA)
- should be able to reflect the collingride dilemma

Methodological competences:
The students:

- should be able to transfer the learned theoretical concepts into practical contexts
- should be able to perform a systematic literature review
- should be able to evaluate potential issues arising in the process of translation
- should be able to do a risk-benefit analysis and cost-benefit analysis of given examples
- should know and can explain empirical methods for technology assessment
- Methodological considerations: Generalization, validity of theories and research methods

Social competences:
The students:

- should be able to argue on different point of views based on different

Self-competences:
The students:

- should be able to reflect their own attitudes and able to explain them using ethical principles
- Pursuing goals: Thinking, problem solving and acting

Module contents
The module consists of a lecture and an seminar part:

Lecture:
Neurocognitive Psychology with emphasis in real world context
- Ethical Principals an Concepts
- Forms and Concepts of Technology Assessment
- Chances and Limitations of Technology Assessment

**General:** Presentation as well as critical evaluation and discussion of scientific literature, application of research methods, transfer of scientific paradigms (concepts and methods) to real-world situations.

**Seminar:** The students write a thesis for a given technological innovation. In this, various concepts of ethical assessment and technology assessment are to be applied. The Innovation is to be discussed critically from different perspectives. Advantages against disadvantages, benefits against damage, opportunities against dangers, self-interest against common public interest are to be weighed.

**Reader’s advisory**

**Links**
- Language of instruction: English
- Duration (semesters): 1 Semester
- Module frequency: Once a year
- Module capacity: unlimited
- Reference text: The module will be offered in summer terms and should be completed within one semester. Both parts will run in parallel.

**Modullevel**
- BC (Basicscurriculum / Base curriculum)

**Modulart**
- Pflicht o. Wahlpflicht / compulsory or optional

**Lern-/Lehrform / Type of program**
- V+S

**Vorkenntnisse / Previous knowledge**

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<thead>
<tr>
<th>Examination</th>
<th>Time of examination</th>
<th>Type of examination</th>
<th>Portfolio</th>
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<td>Final exam of module</td>
<td>At the end of the lecture period</td>
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<th>Comment</th>
<th>SWS</th>
<th>Frequency</th>
<th>Workload attendance</th>
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<td>28 h</td>
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<td>Seminar</td>
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**Total time of attendance for the module**
- 56 h