Course syllabus

Kognition
Cognition

EXTA65, 4,5 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED C/D
Date of Decision: 2023-04-18

General Information

Main field: Technology.
Compulsory for: D1
Elective for: BME4, E4, F4, Pi4
Language of instruction: The course will be given in Swedish

Aim

The course aims to give fundamental insight about the human being as a knowledge and information being as well as getting insight into cognition science as a discipline.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- have knowledge about fundamental concepts from cognitive science and about the different levels of description that are used in studies on information processes in human beings: the neurocognitive, the psychological, the social cognitive and the communication theoretical levels of description.
- be able to use some of the concepts in cognitive science

Competences and skills
For a passing grade the student must

- develop the ability to identify and discuss questions about humans as an information being, especially in human-technology-contexts
- develop the ability to reflect over technology and its design and be able to reason about its consequences of a technology-centred as well as a human-centred perspective on the design of technology

Judgement and approach
For a passing grade the student must

- have insight into the relevance of perspective on technology that complements the technical/relational and achieve increased understanding of the importance of knowledge about human cognition during design of different technical products. He/She should achieve increased insight about the complexity in human cognition.

Contents

The course introduces fundamental concepts from cognitive science, such as perception, learning and memory, concept formation, communication, etc. It presents different levels of description that are used in studies on information processes in human beings: the neurocognitive (with e.g. neural network models), the psychological, the social cognitive and the communication theoretical levels of description. The last-mentioned addresses common human dialogue as well as the role of technology for human communication and human-computer communication. The second part of the course amounts to applying, and simultaneously further developing, some of the obtained knowledge about cognition. In this, second, part issues about the design of artefacts in human environments in particular technical systems and products are studied. A short introduction is given to the domain of human-machine interaction in relation to cognitive science, as well as an introduction to a cognitive perspective on design. The relation between automatic and conscious processes, and the role of these kinds of processes in human-technology contexts, are central themes. A number of design principles and their cognitive background are presented and discussed.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)
Assessment: Written assignments and compulsory laboratory sessions and exercises.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

The number of participants is limited to: No
The course overlaps following course/s: TEK210

Reading list

- Norman, D A: The Design of Everyday Things, Revised and Expanded Edition. Doubleday/Currency, New York, 2013.
- A few articles.

Contact and other information

Course coordinator: Betty Tärning, betty.tarning@lucs.lu.se
Course homepage: http://www.fil.lu.se/kurs/EXTA65/HT2019/