



LTH

FACULTY OF
ENGINEERING

Course syllabus

Cognition Kognition

EXTA65, 4.5 credits, G1 (First Cycle)

Valid for: 2024/25

Faculty: Faculty of Engineering LTH

Decided by: PLED C/D

Date of Decision: 2024-04-16

Effective: 2024-05-08

General Information

Main field: Technology **Depth of study relative to the degree requirements:** First cycle, in-depth level of the course cannot be classified

Mandatory 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

In the course "Cognition," you will become acquainted with human cognition and how it affects our ability to interact with, develop, and understand technical systems. In the course, you will gain fundamental knowledge of how we humans understand our environment: what we pay attention to, what we remember, and how we make decisions or solve problems. You will also learn how to use what is known about human cognition to design better technical systems or products: you will gain a cognitive perspective on product design, usability concepts, and interaction design. Upon completion of the course, you will have taken the first step in being able to critically evaluate technical systems based on how they either support or hinder our cognitive processes.

Some of the concepts/phenomena you will become acquainted with in the course are:

Attention and memory. Top-down and bottom-up control of mental processes. Mental (conceptual) models and understanding. Affordances, constraints, and signifiers. Mapping and feedback. The gulfs of execution and evaluation in connection to Donald Norman's seven stages of action.

Examination details

Grading scale: TH - (U, 3, 4, 5) - (Fail, Three, Four, Five)

Assessment:

Midtest, 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.

Modules

Code: 0117. **Name:** Cognition.

Credits: 4.5. **Grading scale:** TH - (U, 3, 4, 5).

Admission

The number of participants is limited to: No

Kursen överlappar följande kurser: TEK210

Reading list

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

Contact

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Course homepage: <https://www.fil.lu.se/kurs/EXTA65/>