



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Kognition och interaktionsdesign **Cognition and Interaction Design**

MAMA20, 7,5 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: C1

Language of instruction: The course will be given in Swedish

Aim

The course provides the student with basic knowledge about man as a knowledge and information being as well as insights into how interactive products and services should be designed to be useable based on human cognition.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to explain basic cognitive science concepts and principles
- be able to explain basic concepts and principles in interaction design
- demonstrate a basic understanding of how the design of technology systems interacts with human cognition and why

Competences and skills

For a passing grade the student must

- be able to investigate a technology system with regard to usability and user experience and be able to suggest and justify improvements
- be able to link the design of a technology system to concepts and principles from the cognitive science concept apparatus

Judgement and approach

For a passing grade the student must

- be able to argue for the relevance of applying a human-centred perspective on technology
- be able to show the complexity of human cognition and what this means for the design of technology systems
- be able to reflect on several different design solutions and weigh their advantages and disadvantages against each other

Contents

The course introduces basic cognitive processes such as perception, learning, memory, concept formation, etc. and connects these to the design of things in the human environment, in particular technical systems and products with application in e.g. learning and sustainability. The course also presents the basic concepts of usability and user experience and shows how these can be used in the field of interaction design. Furthermore, the course introduces basic concepts in the boundary area between interaction design and cognitive science (such as "affordances", "constraints", "mapping" and "feedback") and how they reflect human cognitive abilities and limitations. The course also deals with fundamental principles for the design of user interfaces (eg the laws of form and direct manipulation) and their origin in the study of human cognition.

The course structure consists of lectures, laboratory work, group assignments and individual assignments that work together to create an overall picture of the complex interaction between human cognition and technical systems. The course is given in collaboration between the Department of Design Sciences and Cognitive Science at the Department of Philosophy.

Examination details

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

Assessment: For a passed final grade, approved laboratory work and laboratory reports, approved test and approved individual final assignment are required. Points on the task are weighed together with points on the individual final task. The total score then determines grades higher than 3.

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.

Parts

Code: 0121. **Name:** Laboratory Work.

Credits: 3. **Grading scale:** UG. **Assessment:** Approved laboratory work and laboratory reports.

Code: 0221. **Name:** Written Examination.

Credits: 1,5. **Grading scale:** UG. **Assessment:** Written test.

Code: 0321. **Name:** Individual Assignment.

Credits: 3. **Grading scale:** TH. **Assessment:** Written individual assignment.

Admission

The number of participants is limited to: No

The course overlaps following course/s: MAMA15, EXTA65, TEK210

Reading list

- Interaction design - beyond human-computer interaction (5th ed., 2019) Helen Sharp, Yvonne Rogers & Jenny Preece.
- The design of everyday things (Revised and expanded edition, 2013) Donald Norman.

Contact and other information

Course coordinator: Annika Wallin, annika.wallin@lucs.lu.se

Course coordinator: Mattias Wallergård, mattias.wallergard@design.lth.se

Examiner: Christofer Rydenfält, christofer.rydenfalt@design.lth.se

Further information: The course is given in collaboration between Department of Philosophy and the Department of Design Sciences.