



IC1007 Human-computer Interaction: Principles and Design

7.5 credits

Människa-dator interaktion: Principer och Design

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for IC1007 valid from Autumn 2019

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completing the course with a passing grade the student should be able to:

- explain basic concepts in the field of HCI
- summarise the contents of research papers in the area
- explain and present design properties of interactive artifacts for different stakeholders
- carry out a smaller design project in a group (including simple project management)
- carry out an inspection method, e.g. Heuristic Evaluation, of existing interactive computer systems
- carry out formative usability tests of own prototypes
- be able to apply a creativity technique, e.g. Brainstorming or similar
- create paper prototypes and digital interactive prototypes
- apply general theoretical concepts on concrete interfaces
- based on a given design task discover and identify what characterises the intended target group and situation of usage
- identify and formulate usability requirements after completed field studies
- identify advantages and disadvantages of a specific interactive computer system based on the perspectives and needs of different user groups
- argue for and against different solutions of a usability problem
- reflect on the strengths and weaknesses of their own design based on literature and own evaluations

in order to

- get basic knowledge of fundamental concepts in the area of human computer interaction
- get tools to identify factors that influence the communication between human and computer positively and negatively
- meet design methods that support the development of useful systems.

Course contents

- The nature of the field of Human Computer Interaction. History- Perspectives- Research.
- At a general level; perception and representation, consciousness and memory, conceptual models and learning.
- Properties of interactive systems, the communication situation, media for communication, interaction technologies and processes.
- Interactive systems in relation to individuals, tasks and organisations, motives for improvements of interactive systems, functionality- usability, models and modeling conflicts, adaptation of systems with respect to users and activities, learning, education and documentation.
- Analysis of applications.

Disposition

The lectures highlight and comment central themes and concepts in the area of human computer interaction. They take their starting point in psychological and cognitive theories. Different types of applications are discussed, but the emphasis is placed on systems for users that not are computer experts. Laboratory sessions and seminars give practical illumination

of these themes as well as exercise in analysis. The assignments use standard systems as illustrating examples

Course literature

The course literature list is announced on the course page.

Examination

- TENB - Written exam, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- INLB - Homework, 6.0 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

In agreement with KTH's coordinator for disabilities, it is the examiner who decides to adapt an examination for students in possession of a valid medical certificate.. The examiner may permit other examination formats at the re-examination of individual students.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.