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.

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

Establishment

Course syllabus for IC1007 valid from Autumn 2016

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

The course aims at providing basic knowledge about concepts within the fields of human computer interaction and the psychology of the interaction process. Another purpose is to provide the students with tools for identifying factors affecting the communication between humans and computers in a positive and negative manner and to provide the design methods to improve that communication.
Knowledge and comprehension

The student is, after completion of the course, expected to be able to:

- give an account of basic concepts within the field of HCI (regarding human cognition, interfaces, interaction and iterative system development)
- give an account of most of the existing styles of interaction, both from a user perspective and from a developer perspective
- give an account of a large number of interaction devices and be able to decide which usage situation it is best suited for
- describe different ways to design interactive computer systems, with regard to the peoples whole situation (e.g. mobility, affection, work and leisure, etc.)
- incorporate the content of a research article within the field
- analyze interactive computer systems from a usability perspective
- conduct an expert evaluation (e.g. Heuristic Evaluation and Cognitive Walkthrough) of existing interactive systems
- adapt a design of an interactive computer system to the needs of different user groups
- create simple paper prototypes
- choose relevant evaluation methods for a given specific computer system and context
- choose style of interaction and interaction device for a given user group adjusted for their tasks and situation
- argue for different solutions to a usability problem
- discuss pros and cons with an interactive computer system from the point of view of different user groups
- apply general theoretical concepts to concrete interfaces.

Course contents

- History, perspectives and research in the area of Human Computer Interaction.
- Overview of perception and representation, awareness and memory, conceptual models and learning.
- Properties of interactive systems, the communicative situation, communicative media.
- Interactive systems correlated to individuals, tasks and organisations. motives for improvement of interactive systems, functionality and usability, models and conflicts within models, adaptation of systems for users and tasks, learning and education, documentation.

- Analysis of applications.

Disposition

The course addresses central concepts within the area of Human Computer Interaction as well as theory and methods to include limitations and potentials of humans when designing computer systems, i.e. knowledge about the human perceptual, communicative and cognitive processes. The area is clearly multidisciplinary and contains a number of topics, i.e. psychology, linguistics and graphic design. The course also addresses the methodology for planing and execution of studies in the process of constructing as well as evaluating computer systems.

Course literature

David Benyon: Designing Interactive Systems (Upplaga: Third Edition), Addison Wesley, 2014, 978-1-4479-2011-3.

Norman, Donald: Design of Everyday Things (Upplaga: rev ed), Basic Books, 2013, 9780465050659.

Examination

- INLA - Assignments, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- TENA - Examination, 4.5 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.

A written exam 4,5 ECTS credits, assignments and mandatory seminars 3 ECTS credits.

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.