DH2660 Haptics 6.0 credits

Haptik

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 DH2660 valid from Spring 2011

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Language of instruction

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

Intended learning outcomes

After the course students will be able to:

- describe how the functionality of the sense of touch both perceptually and cognitively,
- explain how haptic feedback can be used in different application areas,

- use specific guidelines for haptic interface design,
- program haptic applications,
- apply HCI-methods for evaluation of haptic applications.

Course contents

This is an advanced course in human-computer interaction about methods for design, development and evaluation of haptic and tactile interfaces in different application areas such as computer games, computer supported collaboration, scientific visualization, medical simulation, and assistive technology.

The frontline research results regarding human touch perception is presented and how the human brain processes these perceptual events cognitively. An interesting question is how humans can use more of the brain capacity when interacting with and mediated by computers if more modalities than vision can be utilized.

Guidelines for how haptic interfaces should be designed are presented in the course and students practise to use these in the project they do and during laboratory sessions. In the projects, HCI-methodologies are applied in innovative ways in order to evaluate haptic interfaces.

Specific prerequisites

Single course students: 90 university credits including 45 university credits in Mathematics or Information Technology. Swedish B or equivalent and English B or equivalent.

Course literature

Compendium describing theory, research and application areas in the area of haptics will be available when the course starts.

Examination

- INL1 - Assignment, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Assignments, 1.5 credits, grading scale: P, F
- PRO1 - Project, 3.0 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.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

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.