



# DH2670 Haptics, Tactile and Tangible Interaction 7.5 credits

Haptisk och taktil interaktionsteknik

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 DH2670 valid from Spring 2018

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Computer Science and Engineering

## Specific prerequisites

For single course students, 90 credits are required of which 45 credits in computer and information science or informatics. Furthermore, a basic course in human computer interaction is required.

## Language of instruction

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

## Intended learning outcomes

On completion of the course, the students should be able to:

- account for how the tactile sense functions both regarding perception and cognition
- explain how physical manipulation with and without haptic feedback can give an added value in different interactive application fields
- use the specific guidelines that should be followed at design of systems that build on haptic, tactual and physically manipulatable interface
- program simple applications based on haptic and physically manipulatable interactive technology
- use methods in HCI to evaluate haptic, tactual and tangible interaction

## Course contents

An advanced course in human computer interaction that treats methods for design, development and evaluation of haptic and tactual interaction interface in different application fields such as computer games, cooperative support, home appliances, medical simulation, industrial applications, disablement aid etc

The latest research about how the perception via the tactile sense functions is presented as well as how we process these sensory impression cognitive, in different situations and placements. Orientation is given around new technology where physical manipulation and tactual experience are used to support interaction in concrete applications.

Guidelines for how haptical and other physical interface should be designed is treated in the course and the students practice how to apply these in the project they carry out as well as during the laboratory sessions when the students program simple applications. In the project, methods in HCI are used in new ways to design as well as evaluate haptic, tactual and tangible interaction.

## Course literature

Offprint describing theory, research and applications in the area of that are made available via the course web page.

## Examination

- INL1 - Individual report, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Practical exercise/lab, 1.5 credits, grading scale: P, F
- PRO1 - Project, 4.0 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.

## **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.