DH2400 Physical Interaction Design and Realization 7.5 credits

Fysisk interaktionsdesign

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

Establishment

Course syllabus for DH2400 valid from Spring 2019

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering, Information and Communication Technology, Information Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

Students will:

- get familiar with techniques and technologies allowing them to create interactive systems that work outside, or along with the classical mouse-keyboard-and-screen paradigm.

For that, the students will:

- be able to identify the sensors, actuators and microcontrollers needed for a system
- use sensors, actuators and microcontrollers for prototypes of various levels of fidelity
- put together prototypes in a hands-on manner.

Course contents

Design:

- interaction with physical objects. Elements of industrial design
- state of the art "tangible" devices, giveaway sensor projects
- other physical forms of interaction: e.g. haptics, eye tracking, two-hand interaction, feet interaction, dance.

Technology:

- recap of electronic circuit basics, including resistors, capacitors and LEDs
- sensors and actuators for various destinations, built with various technologies
- prototyping interactive installations with Phidgets
- simple microcontrollers: BASIC Stamp, Arduino
- communicating with a computer or with another installation
- elements of advanced microcontrollers, wireless sensor networks
- elements of augmented reality.

Course literature

To be announced at least 4 weeks before course start.

Examination

- PRO1 - Project, 7.5 credits, grading scale: P, 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 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.

Other requirements for final grade

Installation construction and programming exercises, reflective diary and project (PRO1; 7,5 hp).

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.