Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

4ME103 Fysiska och påtagliga användargränssnitt, 7,5 högskolepoäng

Tangible User Interfaces, 7.5 credits

Main field of study
Media Technology

Subject Group
Media Production

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved by the Board of the School of Computer Science, Physics and Mathematics 2010-12-15

The course syllabus is valid from autumn semester 2011

Prerequisites
22.5 Credits at G2F level in Media Technology or the equivalent.

Expected learning outcomes

Upon the completion, the student should be able to:

- discuss relevant conceptual frameworks for design of ubiquitous and tangible user interfaces using physical computing
- understand and explain the design space and the possible specificities of these new types of user interfaces
- understand the challenges of user-centered design for ubiquitous and tangible user interfaces and physical computing
- develop prototypes of these new user interfaces using physical computing
- plan appropriate user studies taking into account the design cycle.

Content

Physical spaces and everyday objects are being embedded with sensing, networking and computational capabilities that alter the way people work, interact and play in everyday scenarios. The aim of this course is to provide students with knowledge and understanding of the conceptual frameworks and methodologies used for development of ubiquitous and tangible user interfaces.

The course consists of:

- Presentation and discussion of scientific papers covering relevant conceptual frameworks.
- Analysis and discussion of different tangible user interfaces.
- Practical exploration of different user-centered methodologies.
- Hands-on work with high-level prototyping platforms for physical computing.
- Structuring and writing of reports concerning the planning and conducting of appropriate user studies and translation of the results into design alternatives.

Type of Instruction

Lectures, seminars and workshops.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
Assessment in this course will be comprised of: written and/or oral examinations, assignments as well as mandatory seminar work. At the beginning of the course it will be decided on what types of assessment used.

Students who do not pass the regular examination are given the opportunity to do a reexamination shortly after the regular exam.

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Course Evaluation

A course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

Other

Upon request, a Swedish University course certificate will be awarded upon successful completion of the course.

Required Reading and Additional Study Material

Required Reading

Kuniavsky, M. (2010). *Smart Things: Ubiquitous Computing User Experience Design*. Morgan Kaufmann. Burlington (MA), USA. Latest Edition. 319(319) pages.

Greenfield, A. (2006). *Everyware: The Dawning Age of Ubiquitous Computing*. New Riders Publishing. Berkeley (CA), USA. Latest Edition. 272(272) pages.

Krumm, J. (2010). *Ubiquitous Computing Fundamentals*. Taylor and Francis Group. Boca Raton (FL), USA. Latest Edition. 410(410) pages.

DFM, *Distributed materials*, 100 pages

Additional reading

Lazar, J., Feng, J. H., and Hochheiser H. (2010) *Research Methods in Human Computer Interaction*. John Wiley & Sons Ltd, West Sussex, UK, Latest Edition. 419 (419) pages.

Clark, A. (2003). *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. Oxford University Press Inc, Madison Avenue (NY), USA. Latest Edition. 240(240) pages.

Dourish, P. (2001). *Where the Action Is: The Foundation of Embodied Interaction*. MIT Press, Cambridge (MA), USA. Latest Edition. 245(245) pages.