Humanistic Informatics 8th semester, Human Centered Informatics, Copenhagen

Semester description

Semester details

School: School of Communication, Art and Technology (CAT)

Study board: Humanistic Informatics

Study regulations:
http://www.fak.hum.aau.dk/digitalAssets/84/84303_curriculum_ma_human_centred_informatics_2014_hum_aau.pdf

Semester framework theme

This semester focuses on development and design of Information and Communication Technology (ICT). Building on curriculum from the previous (7th) semester's work on analysis of use practices, this semester introduce the challenge of how to design with use practice. This includes teaching within the overall research area of systems design with specific emphasis on designing with the use practice through user-driven theories and methods, organisational change in relation to systems design, interaction design and information architecture, formal models for preparing and communicating design solutions, and epistemological understandings of information with a view to reflecting on the scientific theoretical basis of design. After having completed the 7th and 8th semester the students will have competences in both analysis of use practises and system design, and will be ready for the practise work on 9th semester.

Semester organisation and time schedule

The semester is introduced in week 5. It has one 5 ECTS study module on "ICT for Learning, Knowledge and Content Management", which begins in weeks 5-7 with a takehome exam in week 8. The study module is a focussed 3 week course that takes the students through a complete design and implementation process on a focussed topic (HCI goes MOOC), and includes an introduction and hands-on experience with a CMS (wordpress). The study module is focused on MOOCs, and will around this topic introduce students to the fundamentals of e-learning. The module takes the students from the process of user research and requirements definition through to modeling system functions via use case diagrams, as well as wireframing and simple mock-ups for design. Finally, implementation of systems via CMS. Along the way 4 deliverables are generated and shared among the students, forming the dataset for the take-home exam at the end of the course.

Building directly on the study module, the main 20 ECTS project module on "Development and Design of ICT" begins in week 9. The project module goes more in-depth into development methods, modelling, prototyping, design methods, information architecture and user testing. The module is informally split into two components, Development Methods and Design Methods. Both introduce several different methods and processes. The Development Methods section focuses on agile methods, UML and prototyping as core tools. The Design Methods section focus on the use of storyboards, flowcharts and wireframes, as well as the context of design. Furthermore, Information

Architecture and basic user testing methods are covered. Two or more set cases are offered to the students as background for in-class deliverables.

Students can choose one 5 ECTS elective course. Either from the two courses offered under this degree ("Collective Intelligence" or "Web programming") or from among the elective courses offered by the master in communication. Elective courses start in week 9 with takehome exams in week 17.

Semester coordinator and secretariat assistance

Anchorperson: Anders Drachen and Birger Larsen

Secretarial assistance: Karen Holm Greve

Module description: "Development and Design of ICT"

"Development and Design of ICT"
20 ECTS equals 550 working hours

Location
8th semester

Location

8th semester

Module coordinator
Anders Drachen and Birger Larsen

Type and language
Project module English

Objectives

In this module students will acquire:

Knowledge of:
- the theory of science, theory and methods of system development
- user-driven techniques and tools
- organisational change and organisational culture in relation to system development and system design pertaining to ICT
- information architecture and usability
- formalisation and categorisation as regards formal models for the preparation, visualisation and communication of design solutions.

Skills in:
- assessing strategies and methods for system development and system design on the basis of user needs and/or costumer needs and knowledge of the disciplinary theories and methods.
- choosing suitable strategies and methods for system development and system design directed towards various domains
- data collection and analysis as regards system development and system design
- applying formal models for the preparation and communication of system development and system design
- communicating system development and system design to peers and others.

Competences in:
- taking an analytical, reflective and critical approach to the preconditions for system development and system design
- taking an analytical, reflective and critical approach to system development and system design
- engaging in disciplinary and interdisciplinary collaboration on system development and

system design, with a professional approach

- identifying own learning needs and structuring own learning in relation to the subject area of system development and system design.

Academic content and conjunction with other modules/semesters

The module will introduce students to design of ICT directed towards organisational practice or another professional practice as an additional core activity in the practice field of informatics.

The module comprises teaching within the following areas:
- system design with particular emphasis on information architecture and interaction design
- user-driven system development and system development methods in theory and practice
- formal models for preparing and communicating design solutions (for example blueprints, UML etc.)
- information theory and understanding of information with a view to reflecting on the scientific theoretical basis of design work.

Academic supervision will be offered in connection with the problem oriented project work.

Scope and expected performance

20 ECTS

Participants

Only for students on the 8th semester of the Humanistic Informatics degree at AAU Copenhagen.

Prerequisites for participation

Completion of all courses and deliverables on the 7th semester of the Humanistic Informatics degree at AAU Copenhagen.

Module activities (course sessions etc.)

The project module is focused along the semester theme of design and development of IT-based systems. The module is informally split into two components, Development Methods and Design Methods. Both introduce several different methods and processes. The Development Methods section focuses on agile methods, UML and prototyping as core tools. The Design Methods section focus on the use of storyboards, flowcharts and wireframes, as well as the context of design. Furthermore, Information Architecture and basic user testing methods are covered.

Teaching activities comprise a mixture of lectures and exercises under each overall topic. Two or more set cases are offered to the students as background for in-class deliverables.

Teachers: Anders Drachen, Birger Larsen and Stine Ejsing-Suun

Introduction (2 hrs)
▶ Course/semester intro
▶ Cases (2 or more cases) for semester projects
▶ Overview of entire semester
▶ Summary of previous theories

Readings:
J. L. Whitten and L. D. Bentley, Systems Analysis and Design Methods, 7th edition or later,
Chapters 1-4 (Systems analysis and design methods; IS building blocks; IS development and -
management)

Development methods (4 hrs)
▸ Waterfall modeling
▸ SCRUM/Agile
▸ Gantt charts

Readings:
Dix, A.; Finlay, J. Abowd, G. D. and Beale, R. Human Computer Interaction, 3rd edition or newer,
chapter 6: HCI in the Software Process.
Moreira, R.: Agile Development. Chapters 1-5.
Goodman, E.; Kuniavsky, M. and Moed, A. Observing the User Experience: A Practitioner´s Guide
to User Research, Chapters 1-3.

Modeling (4 hrs)
▸ UML
▸ User stories

Readings:
J. L. Whitten and L. D. Bentley, Systems Analysis and Design Methods, 7th edition or later,
Chapter 10 (Object-oriented analysis and modeling using the UML).

Prototyping
General introduction to prototyping as a tool.

Readings:
Dix, A.; Finlay, J. Abowd, G. D. and Beale, R. Human Computer Interaction, 3rd edition or newer,
chapter 6 (Interaction design basics).

Design methods (4 hrs)
▸ Storyboards
▸ Flowcharts
▸ Wireframes

Readings:
Rogers, Y., Sharp, H. & Preece, J (2011): Interaction Design - beyond human -computer
interaction, 3rd edition, Chapter 11 (Design, prototyping, and construction).

Contextual design (2 hrs)

Designing information spaces (2 hrs)
▸ Information architecture
▸ Interaction design

Readings:
Morville, P. M. & Rosenfeld, L. (2006): Information Architecture for the World Wide Web, 3rd
edition, chapters 1-9.

User testing (2 hrs)
- ▸ Eyetracking
- ▸ Think-aloud
- ▸ Stimulated recall

Readings:
Charters, E. (2003): The Use of Think-aloud Methods in Qualitative Research - An Introduction to Think-aloud Methods. Brock Education Journal 12(2), 68-82.
Webb, N., Renshaw, T. (2008). Eyetracking in HCI. In: Cains, P. & Cox, A.L (Eds.) Research methods for human-computer interaction. Cambridge, UK: Cambridge University Press, p 35-69.

Presentation session (across 6th and 8th semester)

The best semester project will receive an award, an official certificate (and if possible a small prize). The best projects will be decided by teachers, external contacts related to the case(s), and the other students. A presentation session, shark tank style, will occur across the 6th and 8th semesters 2 weeks before the project deadline.

Examination

Examination 4
An external oral examination in: **"Development and Design of ICT"**
The examination is a conversation between the student(s) and the examiner and external examiner based on a project report produced individually or in a group. The project report/written work will be considered the shared responsibility of the group. Students will be examined and assessed on the basis of the entire project report, and one combined grade will be awarded each student for the project report and the oral performance.
The project report: total number of pages must be no less than 15 pages and no more than 20 pages per student in a project group, and 30 pages if written individually.
Duration of examination: 20 minutes per student and 10 minutes per group for assessment and announcement of result, although no longer than a total of two hours. 30 minutes in total for individual examinations.
Evaluation: Grading according to the 7-point scale.
At oral group examinations, the examination must be conducted in such a way that individual assessment of each individual student's performance is ensured.
Credits: 20 ECTS.
The project report and the conversation must demonstrate that the student fulfils the objectives for the module stated above.
In the evaluation of the examination performance, the grade 12 will only be awarded to students who give an excellent performance and demonstrate that they have fulfilled the above objectives exhaustively or with only few insignificant omissions.

Any re-examinations will be held on the basis of the revised project report.

Module description: "ICT for Learning, Knowledge and Content Management"

"ICT for Learning, Knowledge and Content Management" 5 ECTS equals 137,5 working hours
Location 8th semester
Module coordinator Anders Drachen
Type and language Study subject module English
Objectives In this module students will acquire: **Knowledge of:** • theory and methods at the highest international level as regards ICT systems for learning, knowledge and content management • ICT systems for learning, knowledge and content management **Skills in:** • assessing, selecting and applying methods for learning, knowledge and content management • selecting, configuring and adapting ICT systems for learning, knowledge and content management • communicating methods and solutions for ICT for learning, knowledge and content management to peers and others. **Competences in:** • taking an analytical, reflective and critical approach to selecting, adapting and applying ICT systems for learning, knowledge and content management • engaging in interdisciplinary collaboration on selecting, adapting and applying ICT systems for learning, knowledge and content management • identifying own learning needs and structuring own learning in relation to selecting, adapting and applying ICT systems for learning, knowledge and content management.
Academic content and conjunction with other modules/semesters The module will introduce students to the management and adaptation of systems for learning, knowledge and content management in order to enable students to act independently when needing to adapt systems, implement prototypes and implement more complete solutions on the

basis of the adaptation and combination of components.

The module comprises courses and exercises within the following areas:
- systems for learning, knowledge and content management
- use and adaptation of systems for learning, knowledge and content management.

Scope and expected performance

5 ECTS equalling 137,5 working hours

Participants

Only for students on the 8th semester of the Humanistic Informatics degree at AAU Copenhagen.

Prerequisites for participation

Completion of all courses and deliverables on the 7th semester of the Humanistic Informatics degree at AAU Copenhagen.

Module activities (course sessions etc.)

This module operates in concert with the project module. It is focused on introducing students to the design and management of systems for learning, knowledge and content management. The module is focused on MOOCs, and will around this topic introduce students to the fundamentals of e-learning. The module takes the students from the process of user research and requirements definition through to modeling system functions via use case diagrams, as well as wireframing and simple mock-ups for design. Finally, implementation of systems via CMS. Along the way 4 deliverables are generated and shared among the students, forming the dataset for the take-home exam at the end of the course.

The four deliverables are:
1. stakeholder analysis
2. interviews/surveys with specific user groups (divided among groups)
3. user requirements and sharing of these data with other groups

The deliverables form the basis for the take-home exam, which is a 7-day affair. During this exam, the students take on the role of consultants working with MOOCs. They need to develop a solution for the IV degree at AAU Copenhagen, and provide scientific arguments as to why their solution should be used to promote the degree, and the pros and cons of the MOOC platform. It is expected that students integrate one or more system functionalities via the chosen CMS such as Wordpress.

Introduction to case: HCI goes MOOC (4 hrs)
▸ What is a MOOC?
▸ E-learning in higher
  education

Readings:
http://newprairiepress.org/culsproceedings/vol3/iss1/5/
http://er.dut.ac.za/handle/123456789/71
http://www.tandfonline.com/doi/abs/10.1080/00091383.2013.842103?journalCode=vchn20

From users to use cases (4 hrs)

- ▸ User research
- ▸ Requirements
- ▸ Functions

Deliverable: **Stakeholder analysis**

Readings:
Goodman, E.; Kuniavsky, M. and Moed, A. Observing the User Experience: A Practitioner´s Guide to User Research, Chapters 4-5
Schmeer, K. Stakeholder Analysis Guidelines.

Modeling (2 hrs)
- ▸ Use case diagrams and UML introduction

Readings:
J. L. Whitten and L. D. Bentley, Systems Analysis and Design Methods, 7th edition or later, Chapter 10 (Object-oriented analysis and modeling using the UML)

Design (4 hrs)
- ▸ Wireframes (w/ Balsamiq)
- ▸ Usability heuristics

Deliverable: **Interviews/surveys**

Readings:
Dix, A.; Finlay, J. Abowd, G. D. and Beale, R. Human Computer Interaction, 3rd edition or newer, Chapter 5 (Interaction design basics), Chapter 7 (Design rules).

Implementation 4 hrs)
- ▸ CMS / WordPress

Student presentations (4 hrs)
- ▸ Meet requirements
- ▸ Which learning activities?
- ▸ Organizational aspects

Deliverable: Requirements & sharing data with other groups

Take-home exam theme: You are consultants working with MOOCs. Provide scientific arguments on why your solution should be used to promote the HCI degree through MOOCS?

Lecturers: TBA

Examination

Examination 5
An internal written examination in English in **"ICT for Learning, Knowledge and Content Management"**
The examination is a seven-day take-home assignment on a set topic. On the basis of the module, students will respond to one or a number of questions and assignments within the subject area of

the module. The assignment paper must not exceed ten pages, and it must be prepared individually.

Evaluation: Grading according to the 7-point scale.

The study elements on which the examination is based is equivalent to 5 ECTS.

In the evaluation of the examination performance, the grade 12 will only be awarded to students who give an excellent performance and demonstrate that they have fulfilled the above objectives exhaustively or with only few insignificant omissions.