

# Methodology for Interaction Design (Fall 2014)

(MIDE/IC2005), 7,5 ECTS-credits

## 1. General information

The aim of the course “Methodology for interaction design” is for participants to implement HCI design methods in the design and development process of interactive systems, i.e. methods for interaction design. The course provides practical knowledge of how to use well-known and established HCI design methods as well as theoretical knowledge of how to think and reasoning on them during the interaction design process.

Note that the course puts people rather than technology at the centre of the design process. We argue that interaction design is not just about the technical system that is developed but about describing and explaining how a computer system is going to affect the way people use and interact with the system.

The course is project-based. Participants are divided into small groups work with specific design assignments in which they apply the HCI design methods described in this document. In this respect does the course bring the students knowledge further by focusing on a specific design task and provide a context for understanding and applying HCI design methods.

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## 2. Curriculum objectives

After to have attended the course participants should be able to:

- Apply HCI methods during the development phases of planning, implementing and evaluation of interactive systems for the design of user-centered interactive systems.
- Critically analyze advantages and disadvantages of using HCI design methods in the development process of interactive system,
- Reflect on the role that HCI design methods play in system development.

## 3. Course content

During the course the following topics are treated:

- Interaction design: the design process, designers’ competence and the designed product.
- Observations and interviews
- Brainstorming and Bodystorming methods
- Scenarios and Personas methods
- Techniques for interface prototyping
- Evaluation paradigms and techniques

## 4. Teaching activities

The main goal of the course is for participants to know how and why to use different HCI design methods during the development process of interactive systems. In order to attain the course goal, participants divided in small groups will work with a design project and more in particular with different assignments from the beginning to the end of the course.

The goal of the design assignments is that participants apply the methods of observations and meeting users, brainstorming, bodystorming, personas and scenarios, sketching, prototyping and evaluation during the different phases of the design and development of an interactive

device/service.

In order to support participants in their project work, the course consists of five lectures and three reading seminars. The lectures cover theoretical and practical knowledge on each of the design methods participants will apply in the project work. The reading seminars constitute an opportunity to open an academic dialogue between us, to learn about our opinions and experiences and to discuss design concepts, design methods, and design philosophies together.

## 5. Course overview

Note! Lectures are not obligatory, however all design assignments and reading seminars are obligatory. If you miss a seminar this is what will happen:

*First missed seminar:* Write a (ca) 1p summary and reflection essay per article for the given seminar

*Second missed seminar:* Write a (ca) 2p summary and reflection essay per article for the given seminar

*Third missed seminar:* You will not pass course and has to do it all over again.

## About lectures

*Lecture 1:* Consists of an introduction to design methods. Assignment 1-4 is introduced in this lecture, as well as the design project.

*Lecture 2:* Presents the following methods: Ethnographic observation, Brain and Body-storming.

*Lecture 3:* Introduce the use of “Personas” and “Scenarios” in the design and development of interactive systems.

*Lecture 4:* Presents sketching and prototyping methods.

*Lecture 5:* Introduces and discusses evaluation methods.

## About assignments

*Assignment 1:* How to observe and use brain and body-storming methods with the purpose of creating a design vision.

*Assignment 2:* Constructing personas and scenarios with the goal of modeling a target group for your system.

*Assignment 3:* Applying sketching methods and early prototyping techniques with the goal of working with design thinking.

*Assignment 4:* Interactive prototypes with the goal of transforming your design ideas into a concrete product, these should also apply evaluation methods from a user-centered perspective given the personas and chosen user-group.

Design assignments demand creativity, knowledge, competence and group organization. It is requested that each group comprehends, applies and reflects on the methods used. Each group should after each presentation also book a time with their advisor for individual supervision.

For each assignment the group should do a 10min presentation, preferable complemented with PowerPoint slides, as well as a 3-4 pages long report. The report should describe how the assignment was done, the results and reflect on used methods in relation to the course literature.

## About seminars

*Seminar 1:* The aim of this seminar is to discuss the interaction design process.

*Seminar 2:* The aim of this seminar is to reflect on the role that creative design methods and techniques such as body storming and personas play in the design process.

*Seminar 3:* The aim of this seminar is to reflect on the role that creative design methods and techniques such as sketching, prototyping play in the design process.

*Seminar 4:* The aim of this seminar is to discuss how to evaluate the interaction design and how to perform evaluation during the design process.

The seminars demand active participation. Some key questions will be raised in the lectures, but each student should also prepare at least 2-3 questions for each paper / chapter that are sent to "Reading seminars questions" under "MethID Hand ins" in FC 1 hour before the seminar (failure to send these questions will count as no participation at the seminar). Each paper / chapter will then be discussed in detail where the students present the paper and facilitate an active discussion based on the questions.

### ***The course project -***

The course project is, as usual, connected to CHI Student Design Competition.

This year's conference theme "Crossings" focuses on crossing the boundaries for meaningful new creations and possibilities. The theme of this year's Student Design Competition is "Appropriating Technologies for New Cultures".

We are asking you to design a product, application, technology, or service that enable people who are a new and completely unexplored user group in any country to appropriate things and technologies around them. This user group may be a minority, an extreme case, or somehow disconnected from the mainstream. We ask you to showcase your best abilities of "maker cultures" to build new connections and to make less-voiced cultures be better heard. We ask you to use technology as a material for crafting and tinkering, and to make sure that you solve real problems, empower people in a unique way, and let them express their colors and needs.

In addition to the recommendation on the CHI web site, to use appropriate design methods such as ethnography, contextual and phenomenological research to understand the problem space, and develop human-focused design solutions to support, assist, enhance or otherwise benefit your target audience, we would like you follow the path that is outlined in this course, i.e. to use the four different assignments to leverage your work into a successful results project.

Please also review our criteria for assessment of the project report below to guide your work. However for a successful CHI submission additional work will be required and we are happy to support you in that process.

For more information on CHI Student Design Competition:  
<http://chi2015.acm.org/authors/student-design-competition/>

## **6. IT support**

First Class is the system we use to support class communication after or between classes. Our conference is called MethID. Daisy is the administration system at DSV. Daisy provides, among others, detail information about the course (course schedule, groups, exam deadlines etc.).

## **7. Examination**

### ***Exam***

The course consists of two examinations, an individual written examination (exam equals 3 ECTS-credits) and individual written report (reports equal 3 ECTS-credits).

In addition you have to actively participate in the three reading seminars sending at least, one question per seminar, 24 h before the seminars' start (seminars equal 1,5 ECTS-credits).

Exam or individual written examination

It consists of circa 5 questions that relate to interaction design concepts and the human-centered design perspective (lectures) and to participants' experience of having applied different HCI methods in a design project (assignments). An example of exam questions will be available in First Class. Doing the assignments and participating in the reading seminars, provide an excellent preparation for the exam.

### **Criteria for assessment**

Grade A 90% or more	Outstanding. Course participant's answers reflect knowledge and autonomous development of reasoning processing well beyond that given in class or in standard works. There is clear evidence of depth and breadth in reading.
Grade B 80-89%	Excellent. Course participant answers reflect knowledge and originality. There is clear evidence of depth and breadth in reading.
Grade C 70-79%	Very good. Course participant's answers are clear, well structured and very well developed; demonstrates sound knowledge and reasoning; depth and breadth of reading.
Grade D 60 – 69%	Good. Course participant's answers demonstrate sound knowledge and reasoning; depth and breadth of reading.
Grade E 50 – 59%	Average. The answers are reasonably competent, though there may be some weaknesses. Knowledge is adequate and while it demonstrates reading beyond the class or in standard works, it might be patchy or not broad.
Grade Fx 40 – 49%	Compensatable fail. There is knowledge of core material but the knowledge and the processing of knowledge is weak or limited. There is only little evidence of wider reading. Grade F 39% and below.
Grade F 39% and below	Fail. There is no evidence of further reading or considered thought about the subject matter.

### **Project report**

Each group will write an report including an analysis of the methods applied in the design project. The report should include:

- A short introduction describing the goals you have pursuit during the implementation of bodystorming, personas and scenarios, sketching, prototyping and evaluation methods in the design project,
- An analysis of the methods in terms of pros and cons of each method
- A discussion suggesting how the HCI design methods you have implemented in this course could be improved in order to develop usable systems/services.
- Five scientific sources at least, properly referenced. Note! Wikipedia does not count as an example of scientific source.
- The report should not exceed 10 pages.
- Any sign of plagiarism will be indicated to the pertinent academic authorities.

In particular, the report should include/discuss the following:

### **Observation, bodystorming and brainstorming methods**

- Analyze pros and cons that bodystorming and brainstorming methods have presented in the particular case you have applied them
- How could the bodystorming method be improved?

## Personas method

- Which advantages and disadvantages present persona and scenarios for the design of system/service for engaging people to take public transportation? Exemplify.
- How could the personas method be improved?

## Sketching and early prototyping method

- Analyze what results of the informal evaluation made of the paper-based sketch (GUI) mean for the design of your prototype.
- Explain advantages and disadvantages of sketching methods in the design of the particular system your group has designed
- Explain the role that the informal evaluation of the GUI has played in the design of the prototype.

## Interactive prototyping and evaluation methods

- Explain advantages and disadvantages of interactive prototyping methods in relation to sketching and early prototyping.
- Analyze the results of the user-evaluation performed indicating the features/functions or parts of the prototype that have been evaluated and suggest design changes for the future development of the group prototype.
- Explain the role that the evaluation of the prototype has played in the assignment.

## Criteria for assessment

Grade A	Course participants will show evidence of the ability to apply design methods correctly; the demonstration of how it was done is excellent, coherent, detailed and very well explained, showing great command and understanding of the methods involved.
Grade B	Course participants show evidence of the ability to apply design methods correctly. The demonstration of how it was done is good, coherent and reasonably detailed. There is evidence of considerable understanding of the methods involved
Grade C	Course participants show evidence of the ability to apply design methods correctly. The demonstration of how it was done is coherent.
Grade D	Course participants show evidence of the ability to apply design methods correctly but the demonstration of how it was done is mediocre.
Grade E	Course participants show evidence of the ability to apply design methods correctly but the demonstration of how it was done present minor errors.
Grade Fx	Methods have been applied incorrectly course participants will show evidence of ability to apply design methods correctly but the demonstration of how the calculation was done is poor, incoherent or not sufficiently detailed.
Grade F	Failure. No method given or completely incorrect method.

## Reports are due January 9!

Send to “MethID Hand Ins/Individual reports” in FC. The report should be in .pdf and follow the recommendations given by the CHI Student Design Competition

## **Course book**

Jonas Löwgren and Erik Stolterman (2003). Thoughtful interaction design. A design perspective on information technology. The MIT Press

## **Selected articles.**

### **Ethnographic observation, Brain and Body-storming (Sem1)**

- Löwgren, J and Stolterman, E.(2003). Thoughtful interaction design. Chapter 2: The process. pp.15-42.
- Löwgren, J and Stolterman, E.(2003). Thoughtful interaction design. Chapter 6: Conditions for interaction design. pp.142-164.
- Antti Oulasvirta, Esko Kurvinen and Tomi Kankainen (2003). Understanding contexts by being there: case studies in bodystorming. In Pers Ubiquitous Computing (2003) 7: 125–134 <http://dl.acm.org/citation.cfm?id=950501>

### **Personas and Scenarios (Sem2)**

- Jonas Löwgren and Erik Stolterman (2003). Thoughtful interaction design. Chapter 3+4 in the course book
- Cooper, A. and Reimann, R. (2003). Modeling users:Personas and goals. In About Face 2 : the essentials of interaction design. Wiley Publishing inc. Chapter 5. (FC)
- Carroll, J. (2000). Making use. Scenario-based design of human-computer interactions.MIT. Cambridge. Chapter 3. (FC)
- Blomquist, Å., & Arvola, M. (2002). Personas in action: Ethnography in an interaction Design Team. In Proceedings of NordiCHI 2002: Tradition and trancendence, pp. 197-200. October 19–23, 2002, Aarhus, Denmark. New York, NY: ACM Press.  
<http://www.ida.liu.se/~matar/NordiCHI02blomquist-web.pdf>

### **Sketching and prototyping (Sem3)**

- Jonas Löwgren and Erik Stolterman (2003). Chapter 5 in the course book
- Retting, M. (1994 ).Prototyping for tiny fingers. Communications of the ACM archive Volume 37 , Issue 4 - April 1994.  
<http://portal.acm.org/citation.cfm?id=175288>
- Houde, S. & Hill, C. What do Prototypes Prototype? In Helander, M., Landauer, T. K., & Prabhu, P. (Eds.) Handbook of Human—Computer Interaction. 2<sup>nd</sup> Ed, Elsevier Science, Amsterdam Netherlands, 1997.  
<http://www.viktoria.se/fal/kurser/winograd-2004/Prototypes.pdf>
- Holmquist, L-E. (2005). Prototyping: generating ideas or cargo cult designs?, Interactions vol. 12 issue 2, March-April 2005.  
<http://www.viktoria.se/fal/publications/2005/cargocult.pdf>

### **Evaluation methods (Sem4)**

- Usability Evaluation Considered Harmful (Some of the Time), Saul Greenberg and Bill Buxton, CHI 2008 Proceedings, April 5-10, 2008, Florence, Italy  
<http://www.billbuxton.com/usabilityHarmful.pdf>
- User Experience Evaluation Methods: Current State and Development Needs, Arnold P.O.S. Vermeeren, Effie Lai-Chong Law, Virpi Roto, Marianna Obrist, Jettie Hoonhout, Kaisa Väänänen-Vainio-Mattila, <http://dl.acm.org/citation.cfm?id=1868973>
- Niels Henze, Enrico Rukzio, and Susanne Boll. 2011. 100,000,000 taps: analysis and improvement of touch performance in the large. In Proceedings of the 13th International Conference on Human Computer Interaction with Mobile Devices and Services (MobileHCI '11). ACM, New York, NY, USA, 133-142. DOI=10.1145/2037373.2037395  
<http://doi.acm.org/10.1145/2037373.2037395>