



# FDH3011 Interaction Design Research 7.5 credits

## Forskning i interaktionsdesign

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 FDH3011 valid from Spring 2019

## Grading scale

P, F

## Education cycle

Third cycle

## Specific prerequisites

## 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 doctoral student should be able to:

• Distinguish different forms of design knowledge and empirical methods to retrieve design knowledge

• Discuss how such design knowledge can be validated- empirically, theoretically

• Analyse and criticise design knowledge

To pass, it is required that one of the following requirements is satisfied:

• That the doctoral student has written an article about his or her research, sent to a journal or conference, with relevant references to the literature in the course that explain the research method

• That the doctoral student has written a shorter thesis (often beginning to the method chapter of the thesis) with a solid argumentation for how the design knowledge has been validated

After a passing the course, the student should know research methodology for design research in order to make knowledge contributions that are contestable, defensible and substantive.

## Course contents

Researchers in interaction design work in the same way as researchers in other fields: we construct and communicate/articulate knowledge. With interaction design, we here mean design oriented practices in the research domain that is designated human computer interaction (HCI). In the field of HCI, the dominating research approach is to create innovative interaction models and then evaluate them empirically through more or less rigorous user studies. This attempt leads to two simultaneous aims regarding knowledge production: both to create unique, innovative design examples, but also to contribute to a more generalised understanding of interaction design.

The related field, design theory is a relatively young academic field with approximately 50 years of development on the neck. Design theory is about all types of design. The assumption is that there is a common core of practices, processes and conceptualisations that cross many different design disciplines e.g architecture and product design.

Step by step, many persons have come to see interaction design (in HCI) as a design discipline. This will become our starting point in this course. Based on this, we will pick concepts from the design theory that can be relevant also in our field. We will start from what has been written there to then read more about how this has been interpreted and used in interaction design.

The aim is to be able to argue for new design knowledge from the three criteria that apply to new research: that it is contestable, defensible, and substantive.

## Disposition

Students and senior researchers will meet at approximately 8 seminars, 2 hours each time.

On every occasion, one of the doctoral students will introduce the texts of the day while another will present some issues that are relevant based on the texts we read.

## Course literature

We read two books and a selection of articles in the course. The books are:

Redström, J. (2017). *Making Design Theory*. MIT Press.

Koskinen, I., Zimmerman, J., Bind, T., Redstrom, J. & Wensveen, S. (2011). *Design research through practice: From the lab, field, and showroom*. Elsevier.

Further a selection of the following articles:

Ljungren, J. Annotated portfolios and other forms of intermediate-level knowledge. *interactions* 20, 1 (Jan. 2013), 30–34.

Ljungren, J., and Stolterman, E. *Thoughtful interaction design: A design perspective on information technology*. The MIT press, 2004.

Gaver, W. What should we expect from research through design? In *Proc. CHI the '12*, ACM (2012), 937-946.

Gaver, W., Bowers, J., Kerridge, T., Boucher, A., and Jarvis, N. Anatomy of a failure: how we knew when our design went wrong, and what we learned from it. In *Percent. CHI the '09*, ACM (2009), 2213-2222.

Toeters, M., ten Boven, M., Bottenberg, E., Tomico, O., and Brinks, G. Research through design: a way to drive innovative solutions in the field of intelligent textiles. *Advances in Science and Technology* 80 (2013), 112-117.

Zimmerman, J., Forlizzi, J., and Evenson, S. Research through design as a method left interaction design research in HCI. In *Percent. CHI the '07*, ACM (2007), 493-502.

Zimmerman, J., Stolterman, E., and Forlizzi, J. An analysis and critique of research through design: towards a formalization of a research approach. In *Percent. DIS the '10*, ACM (2010), 310-319.

Dalsgaard, P., and Halskov, K. Reflective design documentation. In *Proc. DIS the '12*, ACM (2012), 428-437.

Dalsgaard, P., Halskov, K., and Harrison, S. Supporting reflection in and on design processes. In *Proc. DIS the '12*, ACM (2012), 803-804.

Fallman, D. The interaction design research triangle of design practice, design study, and design exploration. *Design Issues* 24, 3 (2008), 4-18.

Fallman, D., and Stolterman, E. Establishing criteria of rigour and relevance in interaction design research. *Digital Creativity* 21, 4 (2010), 265-272.

Frayling, C. *Research in art and design*. Royal College of Species London, 1993.

Brown, T. *Change by design*. HarperCollins, 2009.

- Buchanan, R. Wicked problems in design thinking. *Design issues* 8, 2 (1992), 5-21.
- Bowers, J. The logic of annotated portfolios: communicating the value of research through design. In *Proc. DIS the 12*, ACM (2012), 68-77.
- Bardzell, S., Bardzell, J., Forlizzi, J., Zimmerman, J., and Antanitis, J. Critical design and critical theory: the challenge of designing left provocation. In *Proc. DIS the 12*, DIS the 12, ACM (New York, new, the USA, 2012), 288-297.
- Basballe, D. A., and Halskov, K. Dynamics of research through design. In *Percent. DIS the 12*, ACM (2012), 58-67.
- Häkkinen, K. and Löwgren, J.. 2012. Strong concepts: Intermediate-level knowledge in interaction design research. *ACM Trans. Comput. - Hum. Interact.* 19, 3, Article 23 (October 2012), 18 pages.
- Cross, N. (1999) *Design Research: A Disciplined Conversation*. *Design Issues: Volume 15, Number 2*.
- Cross, N. (2007) *Designerly ways of knowing*. Birkhäuser, Berlin, Germany.
- Buxton, B. (2007) *Sketching User Experiences: Getting the Design Right and the Right Design*. Elsevier, San Fransisco, the USA.
- Koskinen, I. Binds, T., Redström, J., Wensveen, S. and Zimmerman, J. (2011) *Design Research Through Practice: Lab, Field and Showroom*. Morgan Kaufmann.
- Krippendorff, K. (2006) *The Semantic Turn: A New Foundation for Design*, Taylor & Francis Group, FL, USA.
- Krippendorff, K., and Butter, R. (1984) Exploring the symbolic qualities of form, *Innovation*, 3 (2), 4-9.
- Kuutti, K. (2009) HCI and design- uncomfortable bedfellows? In Binds, T., Löwgren, J. & Malmberg, L., (Re) searching the Digital Bauhaus. Run, London
- Löwgren, J. (2007) *Interaction design, research practices and design research on the digital material (translated from) Under Ytan: Om designforskning*, ed Sara Ilstedt Hjelm, Raster publishing house, Stockholm, Sweden.
- Löwgren, J. (2009) Towards an articulation of interaction aesthetics. *The new Review of hypermedia and Multimedia*. 15(2): 129-146.
- Mazur, R. and Redström J. (2007) *Difficult Form: Critical Practices of Design and Research*. In *Proceedings of IASDR07*, Hongkong.
- Nelson, H. G. and Stolterman, E. (2003) *The Design Way: intentional change in an unpredictable world: foundations and fundamentals of design competence*, Educational Technology Publications, New Jersey, the USA.
- Sengers, P., K. Boehner et al. (2005). Reflective design. *Proceedings of the 4th decennial conference on Critical computing: between sense and sensibility*. Aarhus, Denmark, ACM: 49-58.

Stolterman, E. (2008) The nature of design practice and implications for design research. Int. J. Design 2, 1, 55-65.

## Examination

- EXA1 - Examination, 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.

## 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.