User Experience and Interaction Design (TDDE36)
12 ECTS credits:

Study Guide

Spring Semester 2026

Examiner and course leader

Mattias Arvola
mattias.arvola@liu.se

Course Administrator

Hanan Mohsen
hanan.mosen@liu.se

Director of Studies

Anders Fröberg
anders.froberg@liu.se

Study plan

https://liu.se/studieinfo/kurs/tdde36/vt-2026

Editions

Version 1: First published version.

Contents

The course covers how to study and evaluate user experience (UX), and how to implement human-centred design of interactive products and services (i.e., interaction design). The overall goal of the course is to develop knowledge in basic UX research and evaluation methods (qualitative and quantitative), as well as in interaction design methods.

Intended learning outcomes

After completing the course, the student should be able to:

- Use and account for basic qualitative user research methods.
- Use and account for basic quantitative user experience testing methods.
- Ideate and sketch interaction design concept proposals, assess them, and make a convincing argument for one proposal based on user research results.
- Sketch, develop and present interaction design prototypes.
- Conduct and account for a user experience evaluation of interaction design prototypes.
- Assess user research and evaluations with respect to scientific criteria.
- Review interaction design projects with respect to societal and ethical aspects, as for example research ethics, gender, and sustainability.

Contents

Skills: Carry out an interaction design process with customer and user perspectives. Design well-functioning interactive products and services. Investigate and evaluate the user experience.

Topics: Basic concepts in human-computer interaction. Design principles and user interface guidelines. Prototypes of interactive products and services. User research methods. Methods of design. Different types of user interfaces. Methods for evaluating user experience and usability.

Technologies: Prototyping tools for the development of interactive products and services. Technology for interaction.

Teaching and learning methods

The course is based on a design project that goes from an open design challenge to a tested computer prototype. The work is structured in nine assignments that are done in succession. Six of them are done in a group of approx. five students, and three of them are done individually.

Lectures introduce or broaden the perspectives given through the course literature. Smaller exercises are also carried out at some lectures. Lectures are not formally compulsory, but it becomes more difficult to carry out the different parts of the project in a correct way if you are not present. The lectures thus

contain information about and examples of how to do things in the assignments. The lectures are given in English, but it is possible to ask questions in Swedish.

Presentations have compulsory attendance and are held as critique sessions with 2–3 project groups at a time. The critique sessions are conducted around a show-and-tell about produced materials, and the purpose of them is to jointly (students and teachers) help the group presenting to do the best design work possible. It is important to give constructive critique of the others' work. If you feel like you're not getting the feedback you need, ask again. Several groups have presentations at the same time so that learning can take place between groups. Each group has 10 minutes for presentation and 5 minutes for criticism. The final presentation is done as a poster and demo session where each student group has a large TV screen to present on, while you can walk around and watch and listen to the others' presentations.

Study classes and workshops focus on exercises prepared by teachers. They are not formally compulsory, but participating in them greatly facilitates group work and individual assignments.

Supervisions focus on what has been done, in relation to what is expected of the examiner and what the next step should be. Prepare questions that you may have for the supervisor. Supervision sessions are not formally compulsory, but we expect all students to participate, and if someone is missing, we will consider it an indication that something is wrong in the project team.

Group work is done in groups of about five students. There is time in the schedule marked as group work (without a teacher and without a lecture hall) that the groups can use as they wish. If someone is unable to participate fully in part of the group work, you firstly handle it internally, and if that does not work, contact the examiner.

Individual work is required to read up on how to do things in group work. There are also three individual assignments, which form the basis for the individual grade.

Compulsory attendance and supplementary assignments

Occasions specified as presentation in the schedule have mandatory attendance, as part of PRA3 (mandatory sessions are also noted in the description of the assignments). However, there are valid reasons to miss a mandatory session. If you miss such a session, you must inform your supervisor *in advance* why you cannot participate and you must complete a supplementary assignment:

- The supplementary assignment for the final presentation is to individually, within two weeks from the date of the final report, give an oral presentation of the group's work to the examiner.

- The supplementary assignment for all other presentations is to write a description of what you yourself have done in the group work that led up to the presentation, as well as a reflection on lessons learned from the group work (about 400–800 words). The lessons learned must be linked to the course's intended learning outcomes. It must be submitted by e-mail to the examiner within two weeks of the mandatory session.

Time budget

You can potentially spend an infinite number of hours on each assignment, but you shouldn't. Make a time budget based on 16 hours per week (i.e., 40% of full-time study) and stick to it. Set aside time for scheduled sessions, reading, individual work and group work. The assessment of submitted documentation and assignments is adapted to what is possible to do given your time budget of two days per week in this course.

Deadlines

Deadlines for the practical group work and the individual assignments are stated in the schedule on TimeEdit, in the document describing the examination (see the course room at Lisam), and below under the heading Examination.

There are two deadlines for *re-examination:*

- Re-examination 1: 2026-08-29, midnight
- Re-examination 2: 2027-01-08, midnight.

Students who miss the deadline for re-examinations must complete the assignments for the following year's course. Students cannot try to get higher grades through re-examinations. No assignments are graded between deadlines. Information for re-examination is published on Lisam (under Course Documents) or emailed out no later than one month before the last day for re-examination.

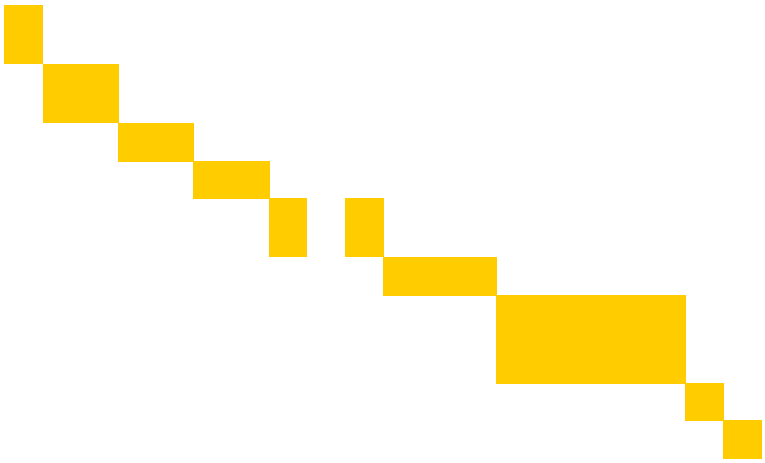
Examination

PRA3	Practical group work	6 credits	U, G
UPG8	Individual assignments	6 credits	U, 3, 4, 5

The examination consists of a total of nine assignments that build on each other and are done in a series (see the Gantt chart below).

GANTT chart

	Assignment	Deadline	Exam.
1	Introduction and planning	2026-01-26	Group
2	Interviews and thematic analysis	2026-02-09	Individual
3	Needs analysis	2026-02-23	Group
4	Concept design	2026-03-09	Group
5	Interface sketching	2026-03-28	Individual
6	Paper prototype	2026-04-20	Group
7	Interactive computer prototype	2026-05-21	Group
8	Reflection	2026-05-26	Group
9	Research methods	2026-06-05	Individual



Six of the assignments are part of the practical group work and three of the assignments are part of the individual assignments. Attendance is mandatory on several occasions in the group assignments (see above). The final grade of the course is calculated by adding the points from the three individual assignments, provided that no assignments have been failed. All three assignments are mandatory to do and you must have 50 points on each of them to get a grade of 3. The maximum number of points is 100 on each individual assignment. The average determines the grade:

- **3:** 50 points on each of the three assignments.
- **4:** Same as 3, and 80 points in average.
- **5:** Same as 3, and 90 points in average.

What is to be done is described in more detail in a PDF for each assignment found on Lisam. Information on how the steps in the assignments should be carried out is given during lectures and in the course literature. Some practical work is also done in workshops. The reading of the course literature must be done continuously and begin on the first day of the course. Grading criteria can be found in a separate document at Lisam.

Supplementary assignments can be given to students who are close to a passing grade (3) and they must be completed within two weeks of the notification of supplementary grades.

The following rules apply to the examination in this course:

- The assignments are in groups or individually, according to the instructions given for the course. However, the examination is always individual.
- It is not allowed to submit solutions copied from other students, or from other sources, even if changes have been made. In the event of suspicion of unauthorized copying or other forms of cheating, the teacher is obliged to make a report to the university's disciplinary board.
- Generative AI techniques can be used for inspiration (i.e., in mood boards, as a sounding board), instead of dummy content (i.e., stock art, lorem ipsum text), for evaluating or proofreading your own work, if you indicate what systems you used and how you used them in the process in a footnote or an endnote, including which prompts you used. You can't copy generated text or images into your own answers and present them as your own.
- You should be able to explain the details of the assignment. It is also possible that you will need to explain why you or you have chosen a specific solution. This applies to everyone in a group.
- If you think you won't be able to meet a deadline, contact your teacher. You can get support and possibly a deadline at a later date. It's always better to discuss problems than to cheat.
- If you do not follow the examination rules, and try to cheat or mislead during examinations, for example by plagiarizing or using unauthorized help, it may lead to a report to the university's disciplinary board. The consequences of cheating can be a warning or suspension from studies.

Policy for presentation: A specific end date, deadline, generally applies to the submission of assignments in the course. This deadline can be during the course or at the end. If the presentation is not done on time, you may need to do a new set of assignments the next time the course is given.

Feedback

Formative feedback on the design process and design product is given orally during supervisions and presentations. Feedback on written reports is given in writing. The feedback on the individual assignments is limited and of a summative rather than formative nature. Two types of comments are given: (1) Consider the following for future work; and (2) Correct and resubmit with specified changes.

Course literature

The student bookstore has been informed about the course literature. Get the textbooks early and start reading because the first deadline is already at the beginning of February.

One of the following two books is compulsory course literature on design methodology:

1. Arvola, M. (2020) – in Swedish
2. Boyl, B. L. M. (2019) – In English

One of the following two books is compulsory course literature on research methodology:

1. Säfsten, K. & Gustavsson, M. (2023) – in Swedish
2. Säfsten, K. & Gustavsson, M. (2024) – in English

Arvola, Mattias, (2020) *Interaction design and UX : on creating a good user experience.* Lund : Studentlitteratur, [2020]. ISBN: 9789144122991

Boyl, Brian L. M., (2019) *Interaction for designers : how to make things people love.* New York, NY : Routledge, 2019. ISBN: 9780415787246, 0415787246, 9780415787253, 0415787254. Exist also as e-book through the library.

Säfsten, Kristina, Gustavsson, Maria, (2023) *Research Methodology 2.0 : for Engineers and Other Problem Solvers.* Second edition Lund : Studentlitteratur, [2023] ISBN: 9789144175478

Säfsten, Kristina, Gustavsson, Maria, (2024) *Research methodology : for engineers and other problem-solvers.* (övers. Ehnsiö, Rikard) Second edition Lund : Studentlitteratur, [2024] ISBN: 9789144185651.

Boyl's book is good, but it doesn't cover all the content of the course. If you use that book, you also have two articles by Lou (2018) and Wikberg-Nilsson & Jahnke (2018) (see below), and the Wikipedia page for the Business Model Canvas (2025). You'll also need to rely on the lectures for details on prototyping and usability testing. Goodwin (2009) can be used for information about context scenarios and requirement formulation. That book is available as an e-book through the library. In addition, Moran's text on paper prototypes, Budiu's text on interactive computer prototypes is recommended.

Budiu, R. (2017). Quantitative vs. Qualitative Usability Testing. Nielsen Norman Group. https://www.nngroup.com/articles/quant-vs-qual/

Business Model Canvas. (2025, September, 5). In Wikipedia. https://en.wikipedia.org/w/index.php?title=Business_model_canvas&oldid=1313107832

Goodwin, K. (2009). *Designing for the Digital Age: How to Create Human-Centered Products and Services*. John Wiley.

Lou, Y. (2018). Designing Interactions to Counter Threats to Human Survival. *She Ji: The Journal of Design, Economics, and Innovation, 4*(4), 342-354. https://doi.org/10.1016/j.sheji.2018.10.001

Moran, K. (2019). Usability (User) Testing 101. Nielsen Norman Group. https://www.nngroup.com/articles/usability-testing-101/

Wikberg Nilsson, Å. & Jahnke, M. (2018). Tactics for Norm-Creative Innovation. *She Ji: The Journal of Design, Economics, and Innovation, 4*(4), 375-391. https://doi.org/10.1016/j.sheji.2018.11.002

The following article is recommended, but not mandatory, reading for the lecture on sustainable design:

Wever, R.,van Kuijk, J., & Boks, C. (2008). User-centred design for sustainable behaviour. International journal of sustainable engineering, 1(1), 9-20. https://www.tandfonline.com/doi/full/10.1080/19397030802166205

Teachers

- *Mattias Arvola* is an Associate Professor and Associate Professor in Cognitive Science at Linköping University. He specializes in methods and theory for interaction design and user experience design. Course leader, examiner, teacher, and supervisor. mattias.arvola@liu.se
- *Ludwig Halvorsen* is a UX designer and has a master's degree in Cognitive Science. He is a lecturer in user experience and interaction design at Linköping University. Teacher. ludwig.halvorsen@liu.se
- *Wanjun Chu* is a PhD in Design and Senior Lecturer at Linköping University, as well as a researcher and designer at Scania. Guest lecturer. wanjun.chu@liu.se
- *Arezou Mortazavi* is a Master of Design and a PhD student in Cognitive Welding Science at Linköping University. Teacher. arezou.mortazavi@liu.se

Course evaluation from last year

The response rate in the course evaluation was 63%, which means that 43 out of 68 students answered the survey.

The respondents felt that the course content gave them the opportunity to achieve the intended learning outcomes (mdn = 4, IQR = 3 – 5). The teaching and working methods as well as the examination elements were perceived as relevant to the intended learning outcomes (mdn = 4, IQR = 3 – 4 and mdn = 4, IQR = 3 – 5 respectively). The teaching methods were perceived to support learning with mdn = 3 (IQR = 2 – 3). That is to be compared with last year's mdn = 4 and the previous year's mdn = 2. The difference is that the teaching took place in Swedish in the year that it had mdn = 4. The course content was perceived to be in line with the syllabus (mdn = 4, IQR = 4 – 5). The overall assessment of the course was OK (mdn = 3, IQR = 3 – 4), but there is room for improvement. The course was also considered relevant to the study programme (mdn = 4, IQR = 4 – 5).

Half of the responding students (49%) felt that the workload corresponds to the size of the course in terms of number of credits, while 30% felt that the

workload was too high. This is to be compared to the previous year when 52% felt that the workload was too high. The changes where the individual assignments are linked closer to group work have thus had the desired effect.

Two people have drawn attention to problems in connection with discrimination, harassment, victimisation or exclusion. From the free-text comments, it appears that the examiner answered unpleasantly to emails and that something that the examiner meant as a joke could be understood as serious. The examiner apologized to everyone for this at a lecture. However, neither of these two is about discrimination, harassment, victimisation or exclusion. Two of the respondents felt that the course did not take gender equality and equal opportunities into account in participation and implementation, while 30 people felt that the course had taken it into account. Gender equality and equal opportunities are defined in terms of gender equality (more on that in the next section of this document).

Based on the course evaluations, the following changes are made to the course:

1. The instructions for assignments are clarified by adding reading instructions, as previously they were only in the schedule at each lecture. How you are expected to do all things is in the course book and is covered in lectures. Deadlines are added to the assignment descriptions.
2. The scoring and grading criteria for individual assignments will be clarified and adjusted. The students' performance was good with only a few who did not pass the course within the set time. Compared to previous years, there were more 5s. Previously, it was too difficult to get a 5. Now it was instead easy. Therefore, the grade boundaries are adjusted to better distinguish the performances.
3. The previous assignment instructions are divided into separate assignments in separate PDFs.
4. Examples of design reports and final presentations are published on Lisam.
5. This year we have the same supervisor for all groups. It is important to highlight that design can be done in many different ways and different groups will receive different advice based on how their design project looks. The design work of different groups also differs, and what is appropriate for one group may not be appropriate for another group.
6. The work from previous years to revise the lectures will continue this year.
7. Schedules that workshop leaders use in workshops are published on Lisam, but they can be difficult to fully understand if you have not participated in the workshop. Doing the same thing yourself as the rest of the class did in the workshop is thus not adequate compensation for missed participation.

How gender equality is integrated into the course

Gender equality is defined as women and men having the same rights, opportunities and obligations, regardless of gender.

Gender equality in implementation (i.e. learning activities):

- Project groups are formed so that a man or a woman should never be the only person of their gender in the group. However, non-binary or genderqueer identities are not taken into account in the creation of groups.
- Seminar leaders must ensure that there are equal opportunities for speaking space, time, and attention.
- The groups are encouraged not to fall back into gender stereotypical patterns where, for example, women document, project manage and remind men who program and construct.
- The examiner and course leader is a man, with a woman and a man as teachers. One guest lecturer is a man.
- A workshop is held where intersectional aspects and design for all are considered.
- A workshop is held where norms and stereotypes are reflected on.

Gender equality in content (e.g. lectures and course literature):

- The course literature addresses norm-creative strategies and gender issues in design.

Gender equality in design (i.e. syllabus):

- A learning outcome in the syllabus is to review interaction design projects with regard to societal and ethical aspects, such as research ethics, gender and sustainability. The objective is examined in PRA3 Practical Group Work.

How sustainable development is integrated into the course

Sustainable development in implementation (i.e. learning activities):

- Considerations between social, economic and ecological sustainability are central issues in all design work. Design that is not sustainable is by definition bad design.
- A workshop is held where environmental, social and ecological sustainability is reflected on.
- The project work is based on the global sustainability goals.

Sustainable development in content (i.e. lectures and course literature):

- A lecture on design for sustainability will be given.
- The course literature highlights design for sustainability.
- The website of the UN's Sustainable Development Goals (SDGs) is used in the project work.

Sustainable Development in Design (i.e. syllabus):

- A learning outcome in the syllabus is to review interaction design projects with regard to societal and ethical aspects, such as research ethics, gender and sustainability. The goal is examined in PRA3 Practical Design Work and UPG8 Individual Assignments.