Design

/Design/
SCB-code: 21199

General description of the research area

The purpose of design is to make alternative futures possible through systematic, experimental, human-centered, aesthetic and critical exploration. Expressive work requiring conscious aesthetic choices forms a central part of the design of material and immaterial artifacts, such as products, services and systems. Design practice comprises the perspectives of technology and materials, form and experience, engineering and craftsmanship, and utility and ethics. Moreover, design practice is contingent on the intertwining of multiple competencies, stakeholders, values, and goals. Design research addresses this material and social practice.

Design research includes a range of activities, from scientific inquiry to experimentation, often in the form of innovative combinations of activities guided by the need to better understand what design is and how it could develop in the future. It is an interdisciplinary research field employing perspectives and methods from engineering and natural sciences, humanities and social sciences, as well as the fine arts. Research considers historical, established, contemporary and future design practices; it requires scholarly and expressive precision, clarity and contextual awareness. Some examples of current research topics in design include:

- visual information environments for human-automation collaboration;
- physical form in product development;
- design for migrating and modality-shifting interaction;
- the relations between prototypical service representations and service situations;
- theories and approaches for stakeholder participation and collaborative design;
- strategical design decisions in integrated product development;
- structures and principles for dynamic design capability;
- models and principles for situated value creation.

PhD studies in design, leading to an academic research degree, aim to develop design knowledge, i.e., working with concepts, theories and methods for shaping artifacts and forming products, services and systems in relation to human contexts. Contextual understanding is foundational and also represents a stance that the PhD students develop through their studies. In this interdisciplinary research field scientific methods and approaches from engineering and natural sciences, humanities and social sciences, as well as the fine arts are employed.

The PhD studies lead to advanced proficiency in developing practical, theoretical and methodological contributions to the field of design. The program is tied together in interdisciplinary research perspectives on design including materiality, practices and value creation. The boundaries of design practice are continuously questioned, and academic design research plays a crucial role in this process.

Goals and objectives

The general goals and objectives of PhD studies are specified in the introduction to the faculty's *Study Handbook for PhD Studies*, as well as in the Higher Education Ordinance (reprinted in the *Study*

Handbook's appendix A).

PhD studies in this research area aims to allow the student to acquire in-depth knowledge of the research area, skills in research methodology and publication as well as research experience, so that the student could thereby contribute to the existing knowledge of the research area and become well prepared for continued independent scientific work or other qualified professional work in the research area.

Degree

PhD studies in Design leads to a Degree of Doctor or a Degree of Licentiate. The latter degree can also serve as a stage in the PhD studies. The Degree of Licentiate comprises at least 120 ECTS, of which courses correspond to at least 40 ECTS and the licentiate thesis corresponds to at least 60 ECTS. The Degree of Doctor comprises 240 ECTS, of which courses correspond to at least 60 ECTS and the doctoral thesis corresponds to at least 150 ECTS.

Eligibility requirements and selection

The basic eligibility requirements as well as the general principles for selection are specified in the faculty's *Study Handbook for PhD Studies*.

Specific eligibility requirements

Admission to PhD Studies in the research area of Design requires completion of courses of at least 60 ECTS at the master level in a relevant research area. These 60 ECTS should include an independent project (degree project) of at least 30 ECTS (or the equivalent).

Implementation of the PhD studies

PhD studies in Design will equip the PhD student with the knowledge and skills to fulfill all the degree outcomes. Due to the research area's interdisciplinary nature, the studies will be individually tailored to the student's background and research focus, which will be specified in the respective PhD student's individual study plan.

The PhD studies consist of research and thesis work, courses, participation in seminars, attendance at national and international conferences, writing of scholarly works and collaboration with external organisations.

The PhD studies include both mandatory and elective courses and components. The elective courses aim to deepen the student's knowledge of theory and methodology in the research area, as well as broaden the student's foundation in the research area. The student will select courses in consultation with the supervisor. The courses should be suitable for and tailored to the student's research specialisation and should make up an integrated whole together with the mandatory courses. Courses can be chosen from the university's offerings, but even from research institutes and other universities, graduate schools and PhD programs.

The PhD studies will endow the PhD student with broad knowledge and understanding of the research area Design through participation in the courses and seminars that are common for the research area, and by helping to teach in the field of design.

The PhD student will acquire a deep knowledge and understanding of Design, and in particular within his/her research specialisation, by actively participating in in-depth courses and seminars that are selected based on research specialisation and that will be specified in the individual study plan; by carrying out independent work in one or several research projects; by engaging in discussions at seminars and conferences; and by presenting research ideas and results at the university.

The PhD student will develop familiarity with scientific methodology through his/her own research (including steps such as initiation), research design, implementation, analysis, result, reporting) and by completing mandatory courses in research methodology and adjacent, related fields. Those who have been admitted to PhD studies in the research area Design are required to take a common course in research methodology in design as well as another methodology course tailored to the student's research specialisation, totaling at least 12 ECTS.

PhD students in Design acquire skills and competencies:

- By independently planning and carrying out theoretical, empirical and/or experimental research
- By participating in national/international conferences within the research area
- By presenting their own research at international conferences, where the student can practise his/her ability to present in front of colleagues from different fields of research and to critically review both his/her own and the other participants' research work
- By participating in seminar activities within the department and at Linköping University
- By reporting on attained results and presenting plans for continued thesis work at least once every academic year at the PhD program's or the department's seminar series

The PhD student in Design will develop judgement and approach by completing courses in research ethics and by participating in seminars/seminar series at the department and the university.

All PhD students should complete mandatory courses as decided by the faculty in methodology of science and research ethics, or be deemed to have equivalent competencies, in order to receive a degree.

PhD students in Design will demonstrate their intellectual autonomy by writing a monograph thesis or a compilation thesis. In the thesis work, the student should show his/her ability to significantly contribute to the development of knowledge in his/her specialised field through own research, as well as the ability to identify the need for further knowledge. The student should demonstrate intellectual autonomy, disciplinary rectitude, the ability to make assessments of research ethics, as well as a specialised insight into the possibilities and limitations of research, its role in society and mankind's responsibility for how scientific knowledge is applied.

Thesis work

Thesis for a Degree of Licentiate or Degree of Doctor can be presented either as a unified, continuous piece of scientific work (monograph thesis) or as a number of scientific essays together with an introduction to the field (compilation thesis). In a compilation thesis, it should be clearly indicated what the student him-/herself has done and what any other co-authors have contributed.

A compilation thesis for a Degree of Licentiate normally consists of 2-3 research articles that are of a level suitable for international publication. A compilation thesis for a Degree of Doctor normally consists of at least 2 articles that have been accepted for publication following peer review of the entire contribution in international scientific journals, or international scientific conferences, as well as 2-3 more articles that are of a level suitable for international publication.

Course work

The common courses and components for PhD studies in Design should be planned for in the PhD student's individual study plan. The relevant courses and components are:

- The seminar series "LiU design research seminars" (including the seminars in the series "Konstnärligt Utvecklingsarbete"), comprising 6 ECTS
- PhD course in "Designforskningsmetod", comprising 6 ECTS
- In-depth course(s) in research methodology connected to the student's own research, comprising at least 6 ECTS
- Faculty-wide courses in methodology of science and research ethics
- To assist the student in the process of writing, a course in academic writing or scientific publishing is recommended
- For PhD students who are helping to teach undergraduate courses, a basic course in university pedagogy (6 ECTS) is mandatory

During the first nine months of PhD studies, the PhD student should draft a thesis plan, which, among other things, should describe the thesis' positioning in the research field of design and show how the research is conducted through at least one of the perspectives about, for or through design. This thesis plan will be presented at an open seminar where those active in the relevant field of research will be invited to attend.

The detailed planning of courses and other components will be conducted in consultation with the supervisor and documented in the individual study plan (see *Study Handbook for PhD Studies*, section 5.3).

Accreditation

Credits from earlier courses may in certain cases count toward the degree, but no more than half of the course credits required for the degree being pursued in PhD studies may be accredited. To receive accreditation, it should be clear that the course work was carried out under supervision. Courses that serve to fulfill the eligibility requirements for admission to the research area may not be accredited.