

International Office, LTH

General syllabus for third-cycle studies in Industrial Design TEIDEF01

The syllabus was approved by the Board of the Faculty of Engineering/LTH 24 September 2007 and most recently amended 8 September 2020 (reg. no U 2020/679).

1. Subject description

As a professional field, Industrial Design has the aim to produce desirable, meaningful and relevant experiences of interaction with products, systems and services that generate value for users, industry and society.

As a research field, Industrial Design focuses on artefacts, processes and contexts and their relationship to and significance for design.

- Artefacts: e.g. products, systems and relations to them, such as notions, experiences, structures, forms, aesthetics, meaning
- Processes: e.g. methods, tools, skills, production, creativity, multidisciplinary
- Contexts: e.g. use, users, culture, environment, society, brand, organisation

Consequently, the research subject of Industrial Design deals with both basic and applied knowledge generation in industrial design as a phenomenon, aiming to increase understanding of the field from the perspectives of epistemology and practice. The field covers aspects of both human relations and technology, such as function, aesthetics, meaning, emotions, and social, cultural, managerial and environmental issues.

The research methods and approaches of the subject span a wide field, enabling the combination of scientific and creative goals in order to obtain new, useful and validated knowledge.

2. Objective of third-cycle studies at LTH

The Board of LTH established the following objective for third-cycle studies on 15 February 2007.

The overall objective of third-cycle studies at LTH is to contribute to social development and prosperity by meeting the needs of business and industry, academia and wider society for staff with third-cycle qualifications. LTH shall primarily provide education leading to a PhD or licentiate in the fields of LTH's professional degrees. The programmes are first and foremost intended for the further training of engineers and architects. The programmes are designed to encourage personal development and the individual's unique qualities.

Third-cycle graduates from LTH shall demonstrate:

- proficiency in research theories and methods and in a critical, scientific approach
- both breadth and depth of knowledge within the subject of his or her third-cycle studies

The programmes aim to develop:

- creativity and independence with the ability to formulate advanced research issues, solve problems and plan, carry out and evaluate projects within a set time frame
- openness to change
- personal networks, both national and international
- social skills and communication skills
- teaching ability
- innovation skills, leadership and entrepreneurship

In order to enable students to achieve these skills and abilities, LTH provides:

- high-quality supervision and good conditions for study in a creative environment
- a good balance between basic and applied research, with openness to wider society
- a range of advanced third-cycle courses at both departmental and faculty level
- a good balance between courses and thesis work
- opportunities to present research findings at national and international conferences and in internationally recognised journals, or by another equivalent method which leads to wide exposure and circulation
- opportunities to spend time in international research environments for short or extended periods

3. Learning outcomes for third-cycle studies

The learning outcomes for third-cycle studies are given in the Higher Education Ordinance.

3.1 Licentiate

Knowledge and understanding

For a Licentiate the third-cycle student shall:

- demonstrate knowledge and understanding in the field of research including current specialist knowledge in a limited area of this field as well as specialised knowledge of research methodology in general and the methods of the specific field of research in particular

Competence and skills

For a Licentiate the third-cycle student shall:

- demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake a limited piece of research and other qualified tasks within predetermined time frames

in order to contribute to the formation of knowledge as well as to evaluate this work

- demonstrate the ability in both national and international contexts to present and discuss research and research findings in speech and writing and in dialogue with the academic community and society in general
- demonstrate the skills required to participate autonomously in research and development work and to work autonomously in some other qualified capacity.

Judgement and approach

For a Licentiate the third-cycle student shall:

- demonstrate the ability to make assessments of ethical aspects of his or her own research
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning

3.2 Doctor of Philosophy

Knowledge and understanding

For the degree of Doctor of Philosophy the third-cycle student shall:

- demonstrate broad knowledge and systematic understanding of the research field as well as advanced and up-to-date specialised knowledge in a limited area of this field
- demonstrate familiarity with research methodology in general and the methods of the specific field of research in particular

Competence and skills

For the degree of Doctor of Philosophy the third-cycle student shall:

- demonstrate the capacity for scholarly analysis and synthesis as well to review and assess new and complex phenomena, issues and situations autonomously and critically

- demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work
- demonstrate through a thesis the ability to make a significant contribution to the formation of knowledge through his or her own research
- demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and society in general
- demonstrate the ability to identify the need for further knowledge
- demonstrate the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity

Judgement and approach

For the degree of Doctor of Philosophy the third-cycle student shall:

- demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics
- demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used

Midway Review

A midway review, with the aim of reviewing the doctoral student's education in relation to the learning outcomes for the degree in the Higher Education Ordinance, is to be implemented at least once during the doctoral student's programme for all doctoral students whose education is to conclude with a doctoral degree.

4. General and specific admission requirements

4.1 General admission requirements

A person meets the general admission requirements for third-cycle courses and study programmes if he or she:

- has been awarded a second-cycle qualification, or
- has satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second cycle, or
- has acquired substantially equivalent knowledge in some other way in Sweden or abroad.

The higher education institution may permit an exemption from the general entry requirements for an individual applicant, if there are special grounds. Ordinance (2010:1064).

4.2 Specific admission requirements

A person meets the specific admission requirements if he or she has:

- at least 30 credits in subjects of relevance to the field, including at least 15 second-cycle credits, or
- a second-cycle degree project of at least 20 credits of relevance to the field, or
- an artistic university degree, MSc in Engineering, or a Master's degree of relevance to the subject area

Finally, the student must be judged to have the potential to complete the programme.

Exemptions from the admission requirements may be granted by the Board of LTH.

5. Selection

Selection for third-cycle studies is based on the student's potential to profit from such studies.

The assessment of potential in accordance with the first paragraph is made primarily on the basis of academic results from the first and second cycle. Special attention is paid to the following:

- Knowledge and skills relevant to the thesis project and the subject of study. These may be demonstrated through documents appended to the application and at a possible interview.
- An assessment of ability to work independently and to formulate and tackle research problems. The assessment could be made on the basis of the student's degree project and a discussion of this at a possible interview.
- Written and oral communication skills
- Other experience relevant to the third-cycle studies, e.g. professional experience.

6. Degree requirements

Third-cycle studies lead to a PhD or, if the student wishes or if it has been specified in the decision on admission, to a licentiate. The student also has the right to complete a licentiate as a stage in his or her third-cycle studies, but is not obliged to do so.

The requirements for a licentiate are:

- passed courses of at least 30 credits, and
- a passed thesis of a scope corresponding to studies of at least 60 credits

The thesis and courses shall comprise at least 120 credits in total.

This means that the course component can consist of between 30 and 60 credits and the thesis component of between 60 and 90 credits. Due to the individual differences in the needs and backgrounds of research students, the division of credits for courses and thesis will be individually and provisionally determined at the admission meeting and documented and followed up in the individual study plan.

The requirements for a PhD are:

- passed courses of at least 60 credits, and

- a passed thesis of a scope corresponding to studies of at least 150 credits

The thesis and courses shall comprise at least 240 credits in total.

This means that the course component can consist of between 60 and 90 credits and the thesis component of between 150 and 180 credits. Due to the individual differences in the needs and backgrounds of research students, the division of credits for courses and thesis will be individually and provisionally determined at the admission meeting and documented and followed up in the individual study plan.

6.1 Degrees awarded

The programme can lead to the following degrees:

- *Teknologie licentiatexamen*/Licentiate in Engineering
- *Teknologie doktorsexamen*/Doctor of Philosophy in Engineering

or:

- *Filosofie licentiatexamen*/Licentiate of Philosophy
- *Filosofie doktorsexamen*/Doctor of Philosophy

7. Course component

The programme is to include courses. For each course, an examiner shall be appointed at the department that delivers the course. The examiner shall draw up a written syllabus which states the course title in Swedish and English, the learning outcomes of the course, the course content and the number of credits.

The individual study plan is to include details of which courses the individual student shall or may include in his or her studies and how many credits for each course may be included in the degree. Courses taken at other faculties or higher education institutions may also be included in the study plan.

It is compulsory to participate in and pass the course Introductory Workshop for Newly Admitted Doctoral Students at LTH (*Introduktionskurs för nyantagna doktorander vid LTH*) GEM056F or the equivalent.

It is also compulsory to attend and earn a Pass grade on the course Research Ethics, GEM090F.

The course component is divided into three blocks:

- I. Research methods and theory of science
- II. Specialisation in Industrial Design and the field of the thesis project
- III. Broadening. This block may include courses in engineering, science, social sciences, behavioural science, humanities, art or economics enabling the student to achieve the general learning outcomes of third cycle studies.

No more than 30 credits for studies in the second cycle (in addition to the 240 credits required for admission) may be transferred to the course component of the third-cycle programme.

The course component is to be designed in consultation with the individual student to take into account the student's prior knowledge, research specialisation and areas of interest.

7.1 Licentiate

Block I must comprise at least 7.5 credits. As the subject is interdisciplinary in character, students are advised to select courses that provide insights into different disciplinary approaches, such as courses in theory of science and research methods from two different faculties.

Block II must comprise at least 15 credits. The courses Introduction to third cycle studies in Industrial Design (4 credits) and Industrial Design Research Seminars (2 credits) are compulsory.

Block III: The course Introductory workshop for newly admitted PhD students at LTH (2 credits) is compulsory. If teaching will be included in the doctoral student's duties, the course Introduction to Teaching and Learning in Higher Education (3 credits) is compulsory.

7.2 Doctor of Philosophy

Block I must comprise at least 15 credits. As the subject is interdisciplinary in character, students are advised to select courses that provide insights into different disciplinary approaches, such as courses in theory of science and research methods from two different faculties.

Block II must comprise at least 30 credits. The courses Introduction to third cycle studies in Industrial Design (4 credits) and Industrial Design Research Seminars (2 credits) are compulsory.

Block III: The course Introductory workshop for newly admitted PhD students at LTH (2 credits) is compulsory. If teaching will be included in the doctoral student's duties, the course Introduction to Teaching and Learning in Higher Education (3 credits) is compulsory.

8. Thesis

The programme shall include a research project documented in a licentiate and/or doctoral thesis. The thesis topic is to address a current research challenge and to be defined in consultation with the supervisor.

The student is to provide reports of the research project regularly. At least once per year or, if possible, once per semester, the student is to hold a work-in-progress seminar. This can be carried out in the context of the course Industrial Design Research Seminars (2 credits) which runs throughout the academic year.

The research project is to be of a quality that satisfies the requirements for publication in peer-reviewed journals or conferences or other

established forms of academic publishing. The results of the project are normally to be continually reported at academic conferences or in peer-reviewed research articles. Research students who decide not to produce a licentiate thesis must take part in a midway seminar with an external reviewer when 120 credits of the programme have been completed.

8.1 Licentiate thesis

The licentiate thesis is normally structured as a compilation of research articles, but writing a monograph is also possible. The thesis is to be presented at a public seminar chaired by an external moderator.

8.2 PhD thesis

The PhD thesis is normally structured as a compilation of research articles, but writing a monograph is also possible. The thesis is to be publicly defended and reviewed by an external reviewer and a grading committee. Prior to the public defence of the thesis, the research student must have participated actively in at least two international conferences.

9. Transitional provisions

The present general syllabus enters into force immediately. However, students admitted prior to 1 January 2012 have the right to complete the programme in accordance with the previous syllabus if this is deemed to benefit the student's academic development.

For doctoral students with an admission date of 1 January 2019 or later, it is compulsory to participate in and pass the course Introductory Workshop for Newly Admitted Doctoral Students at LTH (*Introduktionskurs för nyantagna doktorander vid LTH*) GEM056F or the equivalent in order to fulfil the requirements for the degree.

For doctoral students admitted on or after 1 January 2021, it is compulsory to attend and earn a Pass grade on the course Research Ethics, GEM090F.

The midway review is compulsory for doctoral students admitted on or after 1 January 2019.