HÖGSKOLAN
I SKÖVDE

General Syllabus for Third-Cycle Studies in Informatics[1]

Finalised by the Curriculum Committee for Third-Cycle Studies on December 18th 2023, taking effect on the same date.

Registration number 2023/912

[1] This is a translation of the Swedish version (Allmän studieplan för utbildning på forskarnivå i informationsteknologi, registration number HS 2023/911). In the event of any discrepancy, the Swedish version of this document shall prevail.

Table of Content

1 Subject Description

The third-cycle subject Informatics belongs to an area of third-cycle studies where the University of Skövde (the University) has degree awarding powers. The area is also named Informatics. Informatics is also a first- and second-cycle subject.

Informatics (the subject and the area) is defined as follows:

> **Informatics** is the subject dealing with how information is represented, processed and communicated in artificial and natural systems, as well as with how informatics systems are used and developed to achieve usable system solutions for individuals, organisations or societies.

2 Outcomes of the Third-Cycle Studies

2.1 General outcomes

General outcomes of third-cycle studies, are stated in the Higher Education Ordinance:

Outcomes of Degree of Doctor,

Knowledge and understanding
For the Degree of Doctor 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, and
- 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 the third-cycle student shall

- demonstrate the capacity for scholarly analysis and synthesis as well as 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 dissertation 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 and

- 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 the third-cycle student shall

- demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics, and

- 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.

Outcomes of Degree of Licentiate

Knowledge and understanding
For a Degree of 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 Degree of 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, and

- 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 Degree of 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, and

- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

3 Entry Requirements and selection

Admission selection to studies towards doctoral degree or a licentiate degree is regulated in the Higher Education Ordinance and in "Admission Regulations at the University of Skövde – Regulations for admission to third-cycle studies" [Antagningsordning vid Högskolan i Skövde – föreskrifter för antagning till utbildning på forskarnivå].

Higher Education Ordinance, chapter 7

Section 35
For admission to third-cycle courses and study programmes, the applicant must

1. meets the general and specific entry requirements that the higher education institution has prescribed, and

2. be considered in other respects to have the ability required to assimilate the course or study programme. Ordinance (2010:1064).

3.1 General Entry Requirements

Higher Education Ordinance, chapter 7

Section 39
A person meets the general entry requirements for third-cycle courses and study programmes if they have:

1. been awarded a second-cycle qualification
2. satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the second-cycle, or
3. 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).

3.1.1 Local Regulations at the University of Skövde

When general entry requirements are examined, it shall be assessed whether the applicant has achieved such width and depth in their education that it can form the foundation for the third-cycle studies in Informatics.

Exemption from the general entry requirements can be granted to applicants who have not completed all parts of an education comprising at least 240 credits, but whose completed education includes second-cycle courses comprising at least 60 credits, including an independent project related to the third-cycle studies in Informatics.

When foreign qualifications are assessed, the Swedish Council for Higher Education's principles for the evaluation of foreign higher education qualifications should be used.

3.2 Specific Entry Requirements

Higher Education Ordinance, chapter 7

Section 40
The stated specific entry requirements must be essential for students to be able to assimilate the course or study programme. These requirements may comprise:

1. knowledge from one or more higher education courses and study programmes or corresponding courses and study programmes
2. specific professional or vocational experience, and
3. necessary language skills or other conditions determined by the course or study programme. Ordinance (2006:1053).

3.2.1 Local Regulations at the University of Skövde

To meet the specific entry requirements for admission to the third-cycle studies in the subject Informatics, the applicant must have completed course requirements of at least 60 credits, including an independent project of at least 15 credits at the second-cycle, within the subject Informatics, application areas of a similar kind or other fields assessed as directly relevant for thesis work in the subject Informatics.

Furthermore, a passing grade from English 6/English B or equivalent is required. Equivalent knowledge is normally showed via an internationally recognised language test for example IELTS or TOEFL. Selection

3.3 Selection

Higher Education Ordinance, chapter 7

Section 41
Selection between applicants who meet the requirements stated in Sections 35 and 36 must consider their ability to assimilate the course or study programme.

The higher education institution decides which assessment criteria will be used in determining the ability to assimilate the courses or study programme.

However, during selection, the fact that an applicant is assessed as able to transfer credits from prior courses and study programmes or for professional or vocational experience may not give the applicant priority over other applicants (Ordinance (2010:1064)).

3.3.1 Local Regulations at the University of Skövde

Selection for third-cycle studies takes place following an assessment of the applicants' ability to benefit from the education. This assessment is mainly based on study results from first- and second-cycle education.

The University of Skövde has decided that the following assessment criteria are to be applied when examining the applicants' ability to benefit from the third-cycle studies in informatics:

1. Knowledge and skills relevant to the subject Informatics and for thesis work in the subject Informatics. These can be demonstrated through enclosed documents and interview.
2. Assessed ability for independence and ability to formulate and approach scientific problems. The assessment can, for instance, be made based on the independent project (degree project) from second-cycle studies, and a discussion of the same at an interview.
3. Ability in written and oral communication.
4. Assessed ability to collaborate in research.
5. Other qualifications that are relevant to the education.

4 Structure and Content of the Third-Cycle Studies

4.1 General information about the structure of the studies

The University of Skövde awards two qualifications at third-cycle level: a doctoral degree and a licentiate degree. A doctoral degree can be obtained when a PhD student has completed an education that encompasses four years of full-time studies (240 credits) in a third-cycle subject. A licentiate degree can be obtained after two years of full-time studies (120 credits), and can either constitute a step on the way, or completion of the studies.

A PhD student who is employed as a PhD student can to a limited extent (maximum 20 percent) work with education and administration. These activities are not included in the actual study time. The net study time is calculated from the date of admission and the time devoted to the education. The degree of activity is registered annually in Ladok. Previous education whose credits were transferred at admission shall be deducted from the net study time.

Studies can be conducted part time, for example in parallel with other employment, but must be completed within eight years for a doctoral degree, and within four years for a licentiate degree. Thus, no admissions are made for a degree of activity that is below 50 per cent. The length of the studies may be increased only if there are special reasons for it, such as time off due to sickness, service in the total defence, commission in union or student organisations, or parental leave.

The doctoral studies comprise both a course part, and thesis work.

Throughout the education, the PhD student is expected to actively participate in relevant scientific activities at the University, such as seminars, guest lectures, conferences, etc., with particular focus on those related to the subject of the studies. In addition, the PhD student must present their own thesis at a given number of compulsory seminars (see section 4). Parts of the studies can be placed abroad or at another higher education institution in the country. The PhD student should be given the opportunity to participate in and contribute to international courses and conferences.

4.2 Supervision

At least two supervisors, who are to provide the PhD student with support and guidance in their studies, are appointed to each PhD student. One of the supervisors is appointed as main supervisor. Read more about supervision, competence requirements, descriptions of responsibility, and the practicalities of supervision in "Guidelines for Supervision and Study Follow-Up in Third-Cycle Studies" [Riktlinjer för handledning och studieuppföljning inom utbildning på forskarnivå].

4.3 Individual Study Plan

An individual study plan (ISP) must be drawn up for each PhD student, no later than three months after admission. The details of the structure of the studies are determined in collaboration between the main supervisor, the PhD student, and the Director of PhD Studies. The Dean (The chair of the Faculty Board) establishes each ISP. The ISP is followed up as per the "Guidelines for Supervision and Study Follow-Up in Third-Cycle Studies".

4.4 Content of the Third-Cycle Studies

The third-cycle studies comprise a course part and a thesis work. Exams that are included in the education are graded pass/fail. Course and licentiate thesis grades are determined by a specially appointed examiner. The grade of the Doctoral thesis is determined by a specially appointed examining committee.

4.4.1 Courses

The third-cycle studies in informatics include both mandatory courses and optional courses.

Mandatory courses for a licentiate degree in Informatics

- Scientific Theory in Informatics (7.5 credits)
- Scientific Workshop I (5 credits)
- Scientific Methodology and Research Design (7.5 credits)

Mandatory courses for a doctoral degree in informatics

In addition to the three mandatory courses required for a licentiate degree, the following course is also required

- Scientific Theory in Informatics (7.5 credits)
- Scientific Workshop I (5 credits)
- Scientific Methodology and Research Design (7.5 credits)
- Research Ethics (5 credits)

A course in University Pedagogy can be included in the third-cycle studies (maximum 5 credits).

4.5 Thesis work

The doctoral thesis and the licentiate thesis respectively are to be based on independent research work, and should be of importance to the research within the chosen subject area. A thesis can either be formed as a compilation of papers (articles or manuscripts) or as a monograph.

A compilation thesis must include several scientific articles or manuscripts, as well as a compilation part (summarising chapter). The majority of the articles must be peer-reviewed and accepted for publication in international scientific forums of high quality. See further in "Guidelines for Examinations in Third-Cycle Studies".

For a monograph thesis, equivalent requirements for quality and extent apply.

Both doctoral and licentiate theses are normally to be written in English, and should have a summary in both Swedish and English.

4.5.1 Mandatory Seminars

The PhD student shall present their thesis work at two or three mandatory seminars, depending on the qualifications in question:

1. **Planning seminar and research proposa**l – the intended research focus (planning of the thesis/essay composition) is reported at an open seminar
2. **Half-time seminar and thesis proposal** – after about half the time of the third-cycle studies has elapsed, a thesis proposal is reported at an open seminar
3. **Final seminar and thesis manuscript** – at least three months before the planned thesis defence or licentiate seminar, a preliminary version of the thesis shall be reviewed and presented at an open seminar

For a licentiate degree, the half-time seminar is not included. If a licentiate thesis is written as a step towards a doctoral thesis, the licentiate thesis replaces the thesis proposal

The seminars are described in greater detail in the "Guidelines for Examinations in Third-Cycle Studies" [Riktlinjer för examination inom utbildning på forskarnivå]).

5 Demands for Qualifications (Degrees)

Qualifications for third-cycle studies are nationally regulated in the Higher Education Ordinance and locally in the "Local System of Qualifications at the University of Skövde", as well as in this document.

The demands for licentiate degree and doctoral degree in the subject Informatics is stated in the below table:

Degree	**Courses** (credits)			**Thesis** (credits)	**Total** (credits)
	Mandatory	**Optional**			
		Informatics	Informatics or other subject areas		
Licentiate degree	20	15	at least 5	80	at least 120
Doctoral degree	25	25	10	180	240

As is evident from section 4, where courses and thesis work are described, two or three mandatory seminars are included in the thesis work.

5.1 Degree Title

Degree title is regulated in the Local System of Qualifications at the University of Skövde. Degree titles for passed studies according to this study plan are:

Degree of Licentiate

- Filosofie licentiatexamen i ämnet informationsteknologi (Degree of Licentiate of Philosophy in Informatics) or
- Teknologie licentiatexamen i ämnet informationsteknologi (Degree of Licentiate of Philosophy in Informatics)

Degree of Doctor

- Filosofie doktorsexamen i ämnet informationsteknologi (Degree of Doctor of Philosophy in Informatics) or
- Teknologie doktorsexamen i ämnet informationsteknologi (Degree of Doctor of Philosophy in Informatics)

Criteria for the different prefixes[2]

The following criteria are used to decide the prefix:

- The PhD student's second-cycle qualification and/or
- The focus of the licentiate thesis/doctoral thesis

The prefix is stated in the individual study plan. The choice of prefix must be motivated, based on the criteria stated above.

Change of prefix can be made in connection to follow-up and revision of the individual study plan. A motivation for the change must then be stated.

6 Taking Effect

The document takes effect from 2023-12-18 and replaces "General study plan for third-cycle studies in Informatics" (Reg. No. HS 2023/333).

[2] As is stated above, in Swedish the degree can have the prefix "teknologie" (technology) or "filosofie" (philosophy). This is not applicable in the English translation, where only "philosophy" is used.