

b3.5 Thesis for Master of Science degree 300 credits (*civilingenjörsexamen*), Master of Science, Science and Master of Arts Master of Technology Master's degree and master's degree without a prefix (for students admitted Fall 2007 or later and also others who are registered on the degree of these degrees fr.om 2011-03-01)

(For previous regulations, see Study Handbook 2010.)

Outlined below are the general rules for the thesis. Additional information about the completion of the thesis can be found at the various institutions.

b3.5.1 General

For the Degree of Master of Science degree 300 credits, Master of Science, Science and Master of Arts Master of Technology Master's degree and master's degree without the prefix required that the student has completed an approved thesis. Parts of the thesis are stated in the syllabus.

b3.5.2 Goals

Thesis objectives are stated in the syllabus (i.e. *kursplanen* for Engineering Biology program).

b3.5.3 Scope

Requirements for the scope of the thesis for each type of degree are given in the program's curriculum.

b3.5.4 Environment in which the thesis work carried out

The work can be performed

- internally at a department at LiU or
- externally, at a company, government or other organization in Sweden or abroad, that the examiner consider meets the requirements, or
- within exchange contracts related to studies abroad where all academic credited by the responsible program committee.

What main areas that are allowed within each educational program are given in the program's curriculum. Any individual solutions must be decided by the responsible program committee.

Which departments that a thesis within specific subject area can be examined at, is decided by the program committee which has the responsibility of the main study areas (see current list).

b3.5.5 Project related to studies abroad

When studying abroad within a contract (e.g. an Erasmus contract with a university abroad) the host university's current regulations are valid for master's theses. The student shall consult the Program Board to ensure that the proposed thesis work can be performed within the main areas of

syllabus of the program. Approved main areas for thesis are stated in the syllabus for each program.

Certificate of approved thesis and a copy of the thesis report (pdf) must be submitted to the responsible program committee.

b3.5.6 Selection of thesis

The thesis is chosen in consultation with the examiner, who is also responsible for the content, scope and level meets the requirements specified in the syllabus.

If necessary, issues related to copyright, patent and compensation linked to results of the work, should be specified in advance. The master thesis can enter into agreements on confidentiality and access to confidential information necessary for the implementation of the thesis. However, supervisor and examiner determines themselves if they agree to sign confidentiality undertakings – thus, confidential information should not normally be of such character that it is necessary to supervise or examine. Unless exceptional circumstances are at hand, the entire thesis report published in conjunction with approval. If any part of the report should not be published, this must be approved in advance by the examiner and the appropriate department head.

b3.5.7 Commencement of thesis

Requirements for the commencement of the thesis work are given in the current syllabus.

Notification of the master thesis work must be done at the commencement of the work using the LiU forms. Registration of the master thesis work must be done before work starts, but after that semester registration.

The student should also notify the commencement of the thesis at the department responsible for the examination.

b3.5.8 Degree along with other students

In cases where two students carrying out thesis work together each student's contribution to the work must be reported. The scope of work shall collectively represent two individual pieces of master thesis work. The examiner shall ensure that each student has contributed in a satisfactory way to work, and meets the requirements to pass the thesis.

Thesis work conducted jointly by more than two students is not allowed.

b3.5.9 Examiner

The examiner must be employed at Linköping University as a professor, lecturer, assistant professor or equivalent, have the competence to award degree in relevant subject area and be designated by the department or department head. The examiner must

- before the start of the thesis, verify that the student meets the conditions for commencement of the task within the current main field. Support for this can be obtained from study advisor (*studievägledare*), who can check the score requirements, etc.
- determine that the focus and main tasks of the thesis based on an assessment of the thesis leads to the curriculum learning objectives will be met
- approve / disapprove the planning report
- approve / disapprove half-time
- ensure the supervisors' performance of their duties
- prior to the presentation, check that the student is registered on the thesis
- approve the work for presentation
- prior to the presentation, check that the proposed opponent qualify for the commencement of the thesis, and has conducted three auscultations
- approve / disapprove completed presentation and opposition
- approve a final reflection paper
- ensure that the approved thesis meets the curriculum learning outcomes and other requirements, and rate the thesis (only ratings G = Pass, U = Fail)

b3.5.10 Supervisor

Student has to have access to an internal supervisor at the institution where the thesis is registered. The internal supervisor must hold a degree at least equivalent to the level of the current thesis. The internal supervisor and the examiner may, in exceptional cases be the same person. The exemption decision taken by the appropriate program committee before the examination begins.

The supervisor shall thesis assist the student in such a way that he/she is able to carry out an independent project. This guidance should include

- guidance on general issues of methodology, subject matter and thesis report writing
- problem definition and boundaries of work
- timing of work and selection of appropriate solution methods

When the thesis work is done outside the Institute of Technology, also a supervisor from the commissioner (i.e. company, external institute or other body) shall be appointed.

b3.5.11 Planning Report

The student should in the first weeks of the thesis make a planning report containing

- a preliminary title of the thesis
- a preliminary problem formulation in relation to the literature
- a preliminary description of the approach / methodology that will be applied in the work
- the planned literature study
- a time table for completion of the thesis, including the planned date of mid-term control and the final presentation of the thesis

b3.5.12 Mid-term control

About halfway into the thesis, the student has to issue a mid-term report to the examiner how work is progressing relatively the Planning Report. Also the supervisors should then be involved. The forms of mid-term control can range from a verbal briefing to an open seminar. The mid-term control can lead to three outcomes:

1. The work has been substantially completed in accordance with the planning report and can proceed as planned. Mid-term control is approved.
2. The work was done with some deviations from the planning report, the work is judged to be completed with minor adjustments in formulation, approach and / or schedule. Mid-term control is approved.
3. The work has substantially deviated from the planning report and the work is likely to be disapproved. Mid-term control is not approved. A new planning report must be generated and a new mid-term control made.

b3.5.13 Final thesis presentation

Thesis should be presented orally and in writing, in Swedish or English. Programs Board may permit other languages.

The oral presentation will be made at a presentation that will be public unless there are exceptional reasons. The written report shall be in the form of a professional thesis report. Presentation and final thesis report should follow the instructions in section b3.5.14 and Section b3.5.15.

b3.5.14 Presentation

The oral presentation occurs when the examiner considers the work ready for presentation. Presentation will take place at Linköping University and at a time when other students can attend. Thus, the presentation can be done at a time that the student agreed with the examiner, which usually is from *omtentamensperioden* in August to midsummer next year, and after the student has taken part in three auscultation.

The oral presentation will provide a background to the problem under study, describe the methods, and present the findings and conclusions. The presentation is made to the audience as a whole and not only to specialists. After the oral presentation, the student responds to the opponent's criticism and there is also the opportunity for other participants to ask questions. Presentation and opposition must be approved by the examiner. When adjustments of the final thesis report is carried out, the reflection document is approved and the student has done opposition on another thesis reported the thesis is passed and a grade can be credited.

b3.5.15 Thesis Report

The written thesis report shall be detailed and professionally written, and demonstrate a scientific approach.

Content should be easily accessible and the written request is important. There should be a background and a problem description, the choice of solution methods must be clearly justified and a clear link should exist between the findings and conclusions. Scientifically recognized methods shall be used during processing of the results. This discussion should be detailed and show the student's ability to think critically. The report should contain a good literature survey and a brief summary. In cases where the report's main language is Swedish, it shall also include a summary in English. Manuscript for publication, together with a reflection paper on the work carried out is submitted to the examiner within 10 working days after the oral presentation. Exceptions may be granted by the examiner.

The entire thesis report is after the presentation and adjustments made public unless it is contrary to privacy laws. What constitutes confidential information should be as early as possible regulated and justified in the agreements between third party and the institution concerned. Such an agreement requires approval from the relevant department head, who is also the first instance to consider the request for disclosure. A decision to confidentiality is determined ultimately by the administrative court.

b3.5.16 **Opposition**

Oral opposition is carried out either before or after the presentation of their thesis. The opponent must meet the same score and level requirements as the student and must have completed three auscultations. The opposition is scored, see the syllabus.

The opponent must:

- discuss and comment on the choice of solution methods, results and possible. data processing, conclusions, possible alternative solutions, conclusions, and literature survey
- comment on the report's thesis principle approach and related formal stylistic aspects, and the oral performance
- illustrate the presented thesis merits and shortcomings

The opposition should in time be of approximately the same extent as the presentation and will include a discussion in which the respondent (the person who presents his work), respond to and comment on the opponent's criticism.

Unless otherwise agreed, the opponent shall at least one week before the presentation in writing, explain for the examiner important issues to be addressed, and for the organization of the opposition. Opponent and examiner shall go through the opposition's approach.

Normally, the number of opponents is the same as the number of respondents. Examiner may exceptionally decide otherwise, if grounds exist.

b3.5.17 Auscultation

The student will auscultated, i.e. attend the presentation of other theses, see the syllabus. Auscultation should be at the presentation of the thesis with the same, or higher level, as their own thesis.

An auscultation can advantageously be replaced by a licentiate seminar or a doctoral dissertation. The student is then responsible for ensuring that certificates of attendance are written and submitted to the administrator at the institution for admission in LADOK. Auscultation is included as scored moments in the thesis.

Auscultation should be completed before own thesis presentation and opposition. When auscultation can be made is defined in the syllabus.

b3.5.18 Reflection Document

A discussion paper on the work carried out must be submitted to the examiner within 10 working days after the oral presentation.

b3.5.19 Rating

The thesis is graded with the grades Pass or Fail. For the student to get Pass, all requirements as above must be completed successfully.

The student is expected to carry out a task within a given time frame. A thesis of 30 credits which have not been reported and approved within 12 months after it had begun is rejected unless there are special circumstances or that a longer period of time is agreed upon already in the planning report. Theses for 45 and 60 credits are equivalent to time period of 15 and 18 months. The right to continued supervision of the thesis is terminated if the thesis is rejected, unless it is probable that the thesis can be completed with minor additions.

b3.5.20 Quality Management

Each program committee has overall responsibility for the quality of education. This responsibility includes the thesis. Quality control is done as determined by the Faculty Board.

b3.5.21 Waivers

If special circumstances exist, each program committee shall waive the above regulations. E.g. the verbal opposition can with the approval of the program committee replace a detailed written opposition

- for international students when there are special circumstances
- for other students when all other elements of the degree are fulfilled, the thesis where presented and there are exceptional reasons

Written opposition may be implemented in any of the following ways:

- The student makes a written opposition to a work of another student, the examiner then examines the opposition
- The student's examiner instructs the person to make a written opposition to a degree that has already been examined by the examiner.

At the written opposition, there is no need for an initial description of the opposition.

Program committee must give approval before a written opposition may be carried out.