

PROCEDURES FOR STUDENT THESIS WRITING – MASTER OF SCIENCE IN ENGINEERING, BACHELOR OF SCIENCE IN ENGINEERING

(ACADEMICALLY ATTACHED TO THE DEPARTMENT OF COMPUTER SCIENCE, ELECTRICAL AND SPACE ENGINEERING)

GENERAL

To be awarded a degree, you are required to have completed a thesis that has primarily been carried out individually or, in some cases, by no more than two students. In cases where the thesis is completed by two students, this should be reflected by the scope and depth of the report. It should also be clear who did what.

PURPOSE/GOAL

The overall goal of the thesis is for you to practice, develop and display proficiency in applying theory and method to solve problems relevant to your chosen profile or focus. Detailed intended learning outcomes for the thesis can be found in the course syllabus that applies to the thesis you intend to do, see current course syllabus.

ADMISSION REQUIREMENTS

The admission requirements are specified in the course syllabus that applies to your thesis. General admission requirements are a minimum number of passed courses according to the programme syllabus and a certain number of these need to be at a second-cycle level. There are also requirements concerning the maximum number of first-cycle and core courses that may be unfinished. The examiner who is appointed to your thesis will determine if you have the qualifications required for the proposed thesis.

SCOPE

Theses on a Master level, such as Master of Science in Engineering correspond to 30 credits, or 20 weeks of full time work. Theses on a Bachelor level, such as Bachelor of Science in Engineering correspond to 15 credits, or 10 weeks of full time work.

EXAMINATION

For your thesis to pass it is required that:

1. the written report is approved by the internal supervisor/examiner and published in the LTU database
2. the work has been presented and orally defended
3. an approved written and oral public discussion and examination has been carried out for another thesis
4. you have participated at the presentation of at least two other theses.

These elements are confirmed to have been approved on the "Approval of thesis" form, continuously as they are completed and approved.

START

THESIS SUGGESTION

You should personally begin looking for ideas for a thesis. Projects may be applied for externally, directly via companies or organisations, for example through their websites where theses tend to be advertised. The LARV days may also be an opportunity for contacting companies that have suitable projects for a thesis. "Thesis Luleå" can help by matching you up with a company. Suggestions for theses are also gathered on various websites, for example <http://www.ltu.se/edu/karriar/Exjobb?l=en>. Additionally, suggestions may be made by teachers at the Department, either as a result of companies contacting LTU, or due to suitable theses existing in current research projects.

A thesis can also be carried out at another university or research institute, in Sweden or abroad.

APPOINTMENT OF EXAMINER, SUPERVISOR AND APPROVAL TO BEGIN WORK

Give a brief (approximately 2-3 A4) description of your suggested thesis, including background, purpose and implementation plan. Then fill in and submit the "Suggestion for thesis" form!

The course representative, who is also the faculty programme director (see the appropriate course syllabus) will then review your qualification and your suggestion. The internal supervisor/examiner is your primary supervisor and their approval is required to start work as well as to ultimately have your thesis pass.

When the thesis is done at a company, they should provide an external supervisor who should be at your disposal, providing continuous guidance and discussion throughout the work. The external supervisor should have sufficient expertise in the field where you are applying your engineering knowledge. LTU reserves the right to approve this supervisor. You relay the contact information of the external supervisors to the examiner, who in turn relays the thesis information to the external supervisor.

When you are assigned an internal supervisor/examiner, they will assess whether or not your subject qualifications are sufficient and whether the project you have chosen is suitable. The short description that you have previously submitted, as well as your curriculum vitae, will form the basis for this decision. The project's suitability is assessed based on whether:

- The thesis has clearly defined boundaries and is suitable in scope
- The purpose is clearly defined and has a scientific basis.
- The thesis is clearly focused on the subject area that is being studied

If the thesis is done externally at a company, it is important that all parties (person doing the thesis, internal supervisor/examiner and company) all have the same idea about what needs to be done. A meeting with all parties in attendance may therefore be required before you have been approved to start the thesis work.

AGREEMENT ON PRACTICAL ISSUES, RIGHTS AND PATENTS

Before work commences, you should have reached an agreement with the company or the department concerning any work and travel compensation, access to offices/workspaces, computers, housing, etc. In cases where the thesis might be subject to confidentiality, and/or the thesis might lead to products or patents, these aspects must be agreed upon beforehand through contracts concerning confidentiality and rights. For help with contracts concerning commercialisation, contact the commercialisation group at CENTEK, LTU.

ADMISSION AND COURSE REGISTRATION

Work on the thesis formally starts once you have been admitted to and registered at the course for thesis work. When your suggestion, submitted on the "Suggestion for thesis" form has been approved, the Training Administration will ensure that you are admitted and registered at the course. You will receive further information once this is done.

DURING THE THESIS WORK

PROJECT PLAN/PILOT STUDY/PLANNING REPORT

You should write a well thought out project plan within 1-2 weeks of starting the course, corresponding to 3-5 A4 pages. The project plan is a steering document that states the direction, scope and sub-objectives of the work that you are to conduct. The plan should contain overall descriptions of sub-elements and a time schedule where the sub-elements' temporal and logical relation to each other is made clear. Comments concerning expected problems and alternative approaches should also be included. Possible expansion and necessary limitation should also be commented on. The plan may obviously change during the course of the work if the conditions change.

The plan is established to create a logical structure for the project and highlight challenges, time constraints and limitations from an early stage. After discussing with your internal supervisor/examiner and any external supervisor, you may need to adjust your project plan, after which it is approved by the internal supervisor/examiner.

PROJECT/SUPERVISORY MEETINGS

You should have regular meetings with your internal supervisor/examiner and any external supervisor to check up on your progress and ensure that the work continues as planned. It is you as the thesis writer that initiates project meetings and contacts the external supervisor and examiner. These meetings should be scheduled in good time. It is your own and your examiner's joint responsibility to ensure that all parties agree on what is to be done.

The Department provides active guidance for two semesters, beginning from the start of the course.

WRITING THE REPORT

The report is part of an examination of the thesis and reflects both your knowledge in the particular field and your ability to present an independent work in writing, which is of interest to future employers. Discuss the design of the report early on with your internal supervisor. External supervisors may also have preferences or demands concerning the design, but it is not guaranteed that this is enough for a scientific report at LTU.

The report should be written in Swedish or English. The author is responsible for ensuring that the language used in the report is correct.

For details concerning the design of the report and how to write the report, see your examiner.

EXAMINING THE REPORT

The report is generally examined in several steps and the report is primarily read by the examiner, who provides comments about how it may be improved. Remember that examiners have many other duties, so you need to schedule the reading of the report in good time.

FINAL PHASE

APPLICATION FOR ORAL EXAMINATION

Oral presentations may be carried out on a limited number of occasions each year. You can find information concerning these dates and how to apply here <http://www.ltu.se/edu/studentwebben/Examination-Tentamen-VFU-Praktik/Examensarbeten-uppsatser/Skriva-examensarbete/System-och-rymdteknik?l=en> It is important to have a dialogue with your examiner so that you agree that you have reached a point where you are ready for your presentation.

ORAL PRESENTATION

The oral presentation is part of the examination of your thesis. You are expected to show that you are able to prepare and conduct a presentation. The presentation should be logical and organised so that persons who haven't read the thesis are still able to follow it. At the presentation, you should also show that you have an ability to highlight the important aspects of your work, as time is limited. Part of the assessment concerns whether or not you can handle delivering a presentation of a certain length.

PUBLIC DISCUSSION AND EXAMINATION

An oral and written public discussion and examination of another thesis is part of the examination of your thesis. At the discussion you should show your ability to read, examine and analyse an academically written report. An account of your discussion should be summarised to describe the strengths and weaknesses of the report. The account should be submitted to the author of the report to allow them to improve their report, as well as to the internal supervisor/examiner of the thesis that you have examined, as the basis for an assessment of your discussion.

ADJUSTMENT, APPROVAL AND PUBLISHING OF THE REPORT

After the oral presentation there are often adjustments that need to be made. You therefore meet your examiner for one final meeting to discuss what additional adjustments need to be made concerning, for example, comments made during the oral presentation.

When the report is finalised and approved by an internal supervisor/examiner and a coordinator, it must be registered in DiVA. This is done by LTU library's website under Publish – Register student thesis.

You also need to generate a front page for your report. The front page is created at the same web page you use to register your report.

APPROVAL OF THE THESIS

When all elements of the thesis are executed, the report is published and the internal supervisor/examiner of the thesis has approved all elements, the completed form "Approval of thesis" is submitted to the student administrator at the department, who registers the grade.

EDUCATION AND OUTREACH PUBLICATION AND PRIZES

After your thesis is approved, you can investigate whether there is interest in publishing parts of your work and results in a trade publication. In such cases you may be given the chance to write a short, more easily accessible article about your work and in that way reach a wider audience.

You may also investigate whether there are any prizes that you may apply for based on your work, both nationally and internationally.

OTHER

PLAGIARISM

Plagiarism is a serious form of cheating. All theses are examined for plagiarism by the internal supervisor/examiner before being approved. If plagiarism is uncovered, disciplinary action is taken that may include suspension and require a new thesis to be undertaken at a later date. Plagiarism is defined as theft of literary or artistic material. It includes copying and using others' texts and images in your own report without citing sources or quotes. Plagiarism also includes submitting a thesis that is very similar to an earlier thesis, or re-using previously published material that you have co-authored without citing sources.

CONFIDENTIALITY

As a general rule, the principle of public access to official documents applies to all operations at the university, which means that the public should have access to documents created at the university. For this reason, you should primarily choose theses that can be published in their entirety when finished. However, the Secrecy Act provides some possibilities for companies who provide theses to have them be classified as confidential, in whole or in part.

The internal supervisor/examiner contributes to the Department creating a written contract that should be signed by the Department, the company and the student. The report should be published, even if it is classified as confidential. The difference is that the report is not made accessible to the public until the confidentiality period has expired. The Department should have at least one complete report available for archiving.

The thesis should be presented publicly during one of the special presentation days that are arranged at the Department. At these presentations, consideration must be given to confidentiality requirements.

PRINTING OF THESES

The Department pays for the print of 1 copy to the author and 1 copy to the external supervisor. Other copies are paid for by the student. Order forms and other information can be found here:

<http://www.ltu.se/edu/studentwebben/Examination-Tentamen-VFU-Praktik/Examensarbeten-uppsatser/Skriva-examensarbete/System-och-rymdteknik?l=en>