

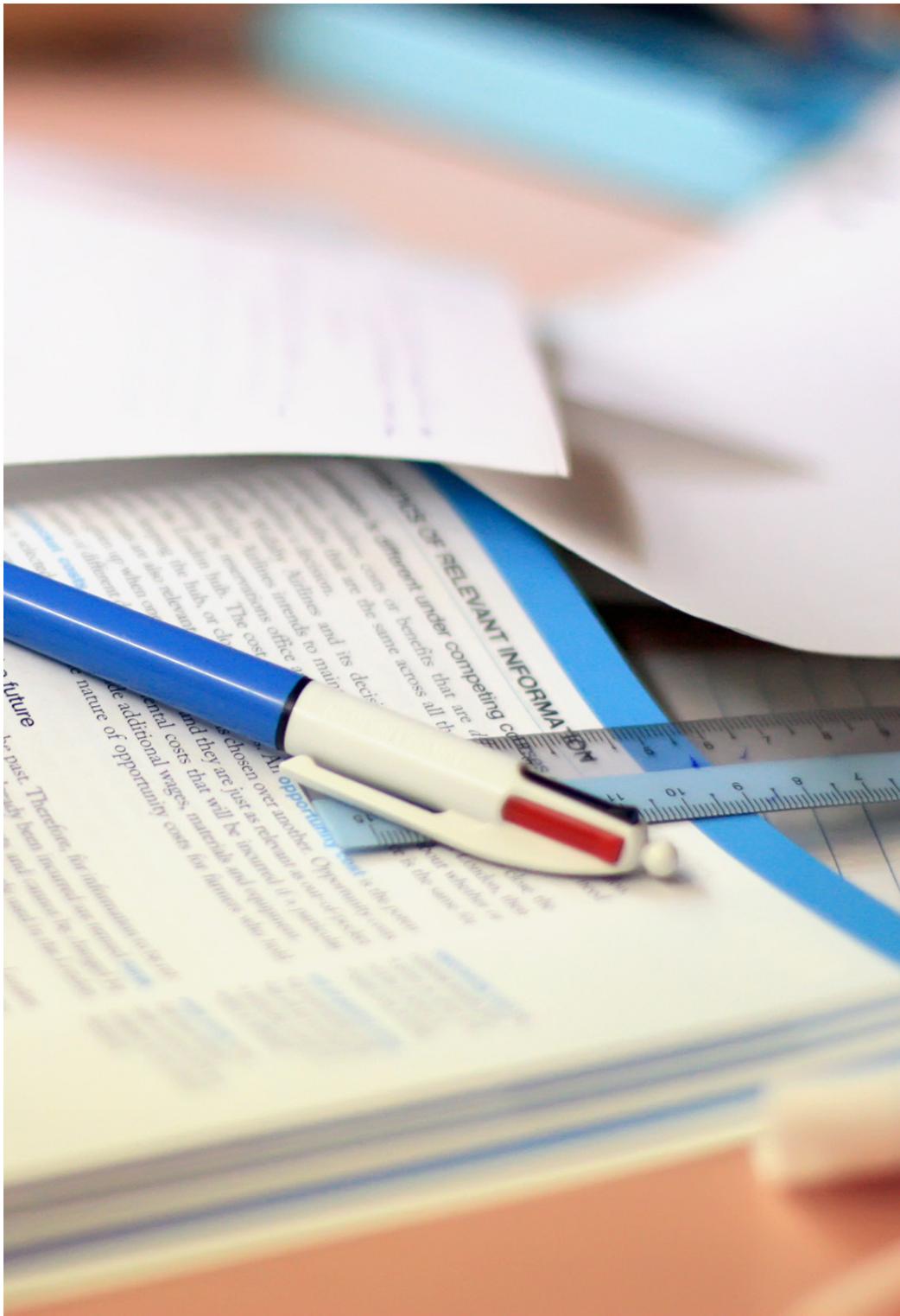
Handbook for Degree Project Writers

MASTER'S PROGRAMMES IN ENGINEERING 2012
THE FACULTY OF ENGINEERING (LTH) | LUND UNIVERSITY



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Introduction

WHAT IS A DEGREE PROJECT?

A degree project (known as “ex-jobb”) serves to deepen your knowledge within a subject of your choice. On each programme, there is a list of degree project subjects. Most students choose a subject connected to their specialisation. You can do your degree project in another subject if the programme director approves it. According to the Faculty of Engineering’s syllabus for degree projects, you are to use knowledge acquired on the programme to identify, analyse and solve an engineering or scientific problem.

You do the degree project individually or together with another student. In order to pass, you must write a report in either Swedish or English, make an oral presentation at a public seminar, publicly discuss another student’s degree project and write a popular science or scholarly summary of your work.

The degree project marks the end of your Master’s degree programme in Engineering, but also the start of your professional life. Company-based degree project often result in an offer of employment and can in any case be useful experience to show potential future employers.

Remember: Are there two of you doing a degree project together? Then it is important to discuss your level of ambition and possible division of tasks before you start work.

Remember: Does the task feel fun? The most important factor for a good degree project is your own motivation. It is a good idea to spend a little extra time on finding an assignment that really interests you.

WHAT IS THE ROLE OF THE EXAMINER?

The examiner approves the assignment before the start of the degree project and decides at the end whether to pass the project. When two students work on a degree project together, the examiner assesses both of them and in such cases it must be clear which part of the work each student has done. The examiner must be employed at Lund University and hold a PhD or the equivalent.

THE ROLE OF THE SUPERVISOR?

The supervisor’s task is to provide help during the execution of the degree project. He or she can be employed at a university or at a company. Two thirds of all degree projects at the Faculty of Engineering are done in cooperation with companies. In such cases, the student often has both a supervisor at the company and one at the Faculty of Engineering (LTH). The supervisor at the company usually helps with the workplace, equipment and contacts, while the supervisor at LTH provides advice on a suitable delimitation of the project and contributes theoretical expertise.

Many supervisors, especially supervisors in companies, are unfamiliar with the objectives of a degree project. Make sure that your supervisor is aware of these objectives and discuss them on a regular basis.

Remember: The levels of commitment and accessibility of supervisors can vary a lot. Talk through the expectations you have of each other and what form the supervision should take. Do you prefer regular meetings or will you set them up as needed?

Tip: Make sure that the supervisor and the examiner have talked through the degree project assignment before you begin.

Getting started

HOW DO I FIND A DEGREE PROJECT?

The right time to start looking for a degree project is about three or four months before you plan to get going on it. Think about what subject area has interested you most during your programme and that you can imagine spending another six months on. For example, talk to the lecturer responsible for your favourite course about what could be a good degree project assignment in the subject. Contact the departments at LTH and/or companies, introduce yourself and ask whether they have a task that needs to be carried out and that could serve as a degree project. On LUP, Lund University Publications, you can see what degree projects other students have done and perhaps get an idea for your own.

Tip: On the faculty's MyCareer website, <http://mycareer.lth.se/>, companies advertise potential degree project assignments.

Tip: Many large companies have lists of current suggestions for degree projects on their home pages.

ENROLMENT AND REGISTRATION

You can start your degree project when you have earned at least 240 credits on your programme. The degree project assignment is to be approved by the examiner: once you have the go-ahead from the examiner, you register your degree project with your programme coordinator. Use the form entitled "Enrolment form for a degree project within a programme" which you can find on LTH's homepage. The study advisor checks that you have earned a sufficient number of credits. The degree project corresponds to one semester of full-time work, i.e. 30 credits.

If you are on a 270-credit Master's degree programme in Engineering (the older version), you can start on the degree project once you have acquired 210 credits.

DEGREE PROJECTS AT OTHER UNIVERSITIES AND/OR ABROAD

There are two main ways of doing a degree project at another university or abroad. In both cases you must complete all the components included in the Faculty of Engineering's degree project course, i.e. presentation, public review, report and popular science or scholarly summary.

- You register as a degree project student at LTH but carry out part of the work at another university in Sweden or at a company/university in another country. The examiner is based at LTH but the supervisor is usually at the other university or in the other country involved.
- You are enrolled on the degree project course at another university and when you have passed the course there you apply to have your degree project credits transferred to your degree at LTH. Your application is to be submitted to the programme coordinator. It is important that the degree project fulfills the requirements for the degree project course at LTH, so it is essential that you discuss this with the programme coordinator before you start working on your project.

Tip: There are many lecturers at LTH who engage in research cooperation with colleagues at other universities. It can be a good start to turn to them if you are interested in doing your degree project elsewhere than at LTH.

CONFIDENTIALITY AND COPYRIGHT

At LTH, all degree project reports are public and cannot be subject to confidentiality. The copyright act allows others to refer to and quote from your degree project as well as to copy parts of it for their personal use.

The assessment of your degree project is based on the contents of your written report. Sometimes companies request that a student signs a confidentiality agreement, but if you sign a document which prevents your degree project from being made public it cannot be passed.

Remember: A confidentiality agreement with a company usually means that you can be liable for damages to the company in case of breach.

Tip: Contact the international office at LTH for support and advice if you want to carry out your degree project abroad.

Tip: Plan well ahead if you want to do your degree project abroad or at another university. These projects often take longer to set up and require more planning.

SCHOLARSHIPS

There are quite a few scholarships to apply for when doing a degree project, both before, during and after the work. There are links to scholarships on LTH's home page under the "Examensarbete" tab.

If you are doing your degree project at a university in Europe, you can apply for an Erasmus scholarship. If you are doing your degree project in a developing country, you can apply for a Minor Field Studies scholarship from Sida, the Swedish international development cooperation agency.





Project plan and timetable

You are to dedicate 20 weeks of full-time work to your degree project so a project plan is very helpful. Many supervisors actually require you to have one. The project plan is to include a short description of the background, aim, delimitations, methods and objectives of your degree project. You should also mention the roles of the people involved and include a general timetable. The timetable should divide the work into interim targets and set deadlines for when these are to be achieved.

The timetable can for example include information on when any measurements, calculations and interviews are to be done.

Remember: Start early by considering the approximate form the report will take: the issues to be discussed, delimitations, methodology and structure, but be aware that these may be modified in the course of the work.

Incoming exchange students

Every year many incoming exchange students make a degree project as a part of exchange studies at Lund. You must arrange with a supervisor at department at LTH before you come to Lund.

The same rules apply for exchange students as for students enrolled at LTH. Check with your home university that there is no mismatch with respect to the rules at home.

Note that grades given on degree projects are only given as Pass/Fail. LTH does not issue ECTS grades on degree projects.

Remember: Plan your work so that you have completed the presentation and the public review of another students' degree project before you return to your home university.



Implementation

HOW DO I CHOOSE A METHODOLOGY?

You are to apply scientific and engineering methodology. This means that statements and results are to be well supported, that sources are to be openly accounted for and that the work is to be carried out in an objective and systematic way. The choice of methodology depends on the question you set out to answer. The most common methods applied to degree projects are casestudies, experiments, modelling and mapping, or a combination of these.

You carry out your data collection through interviews, surveys, observations and measurements, for example. The collected material is then to be analysed and the method of analysis you choose depends on your data. Quantitative analysis is done using statistical methods on data which can be counted or classified, such as number, density and colour. Qualitative analysis is done on words and descriptions, for example on material compiled through interviews.

Tip: Test the methodology before you launch into your main trial, for example with the help of a pilot study.

Remember: Double-check all the information you gather.

Tip: Structure your workday so that you get a sufficient number of hours done each day.

DOCUMENTATION

The degree project is a process in which the aims and delimitations can change over time, depending on your findings. It is often very helpful to document your work as you

go along. One way of doing this is to keep a journal. For example, document the conditions that apply when conducting interviews, measurements and other investigations. This can save you the effort of carrying out new investigations if you get unexpected or odd results; it is a simple way of being able to check back through your work. It can also facilitate communication with your supervisor.

Tip: Document all meetings with supervisors and confirm all agreements in writing, for example via email. This reduces the risk of misunderstandings and increases the chances of all those involved honouring their commitments.

Tip: It can be difficult to get an overview of your work when you are in the middle of it. Give yourself time for reflection, for example by ending each day by going through what you have achieved and where you are headed.

SEARCHING FOR SECONDARY SOURCES

You will need to find out what has previously been written within your subject area. For this you can use books, journal articles and reports. You can also find a lot of useful material on the internet, such as facts from public authorities, companies and organisations, news and scientific information via databases.

Lund University Library's catalogue, in which all the University's library books can be found, is called LOVISA. The joint catalogue for all Swedish university and university college libraries is called LIBRIS. Research articles are often published electronically and can be found on the internet and in the databases accessible to everyone at Lund University.

Lund University Library's electronic resources can be accessed via Summon.

Use the most recent material in your subject in order to minimise the risk of your information being obsolete.

Remember: Take a critical approach to your sources! Ask yourself who is the author of the book or the website and what they know about the subject.

Tip: For a shortcut to relevant secondary sources, consult the list of references in an existing report within your subject area.

REFERENCE MANAGEMENT

The degree project is a scholarly study which means that you must account for your sources; a failure to do so could make you guilty of plagiarism. Different departments have different rules for how to present your references; find out from your supervisor what system applies at your department. A good reference list is necessary to enable the reader to review your work, but also so that you, the author, can trace your material.

LTH has a policy for plagiarism which can be found on the homepage. Read it and remember that you can be guilty of prohibited plagiarism merely for failing to formulate and present other people's ideas independently.

Remember: Complete your list of references as you go along. This will save you a lot of time in the long run, as it is often time-consuming to locate something you read a long time ago.

HELP AND SUPPORT

You can turn to the Study and Language Skills Centre (Studieverkstaden) at Lund University if you want to discuss your report or study methods with someone other than your supervisor. The Centre also offers short courses in study techniques, academic writing and public speaking and can help students who do not have Swedish as a first language.

If you need help searching for information, refer to one of LTH's six faculty and departmental libraries or to the Studiecetrum library. For help writing a report in English, consult awelu.srv.lu.se. This site includes information on English grammar and tips on writing in English.

The students' union at LTH can help you if problems or conflicts arise during your degree project. They can for example sit in on meetings with your supervisor to support you. You can also turn to the head of the department where you are doing your degree project or to the study advisor for advice and help.



Presentation

REPORT

The report is the final product and what remains once you have completed your degree project. The quality of your degree project is assessed to a large extent on the basis of the quality of your report.

Your task includes placing the work in context and explaining why it is relevant. Think carefully about balance in the report. A good report contains many sections, for example the aim, the issue addressed, a description of the background, methodology, results and discussion. The most important part is your own work, however. Remember to highlight this and be clear about what constitutes your own work and what comes from other sources.

The report is to be written in Swedish or in English but regardless of which language you choose, you must write a short summary, known as an abstract, in English. Discuss the main target readership of your report with your supervisor and adapt your choice of terminology, formulations and explanations accordingly. The target readership is usually made up of “experts in the field”.

Remember: Be critical! Give a careful account of your selection criteria and delimitations and discuss any variations in measurement data, alternative explanations and the reliability of your sources.

Tip: Write the report as you go along and set up interim targets for when the various sections are to be completed and when they are to be reviewed by the supervisors.

Tip: When your project is nearly complete, it is a good idea to let someone other than the supervisor read your report and comment on it.

Remember: Proofreading often takes longer than expected.

POPULAR SCIENCE OR SCHOLARLY ARTICLE
The popular science or scholarly article you write should summarise your degree project. You must write the article in order to pass your degree project course, but you can decide yourself whether it is to be a popular science piece or a scholarly article. The target group for a popular science article usually consists of first-year students on the Master’s programme in Engineering. You should opt for a scholarly article if you have arrived at new scientific results, in which case your target group is the scientific community. The article is part of your degree project and is to be included in the main report.

ORAL PRESENTATION

You are to present your degree project at a public seminar. An appropriate length for your presentation is usually 20 minutes. When you have finished presenting, someone will usually discuss your work and there should also be time for questions from the rest of the audience.

The oral presentation serves to get the audience to understand what you have achieved. Remember that most of the people who are attending the seminar have only seen the title of your degree project. Take the time to explain the issue and concentrate on the main features rather than trying to explain everything. The images you use should be clear and

visible from the very back of the room; avoid complicated diagrams and formulas.

Tip: Attend at least one degree project presentation before doing your own.

Public review

In order to pass your degree project course, you must also publicly discuss another student’s project. You can find degree projects to discuss on LTH’s homepage. Upcoming presentations are announced under the “Examensarbete” tab. The point of public discussion is for you to learn to review an engineering study and to provide objective criticism.

During the public discussion, you comment on the main features of the report and any alternative approaches. Consider for example whether the delimitations of the study are reasonable, whether the background description is sufficient, whether all the issues raised have been addressed, whether the

Tip: Visit the room where you will be presenting in advance and check that the technical equipment works, test how loudly you need to speak and how you can move around the room.

conclusions are scientifically supported and whether it is clear which parts of the work are the author’s own contribution and which parts come from other sources. The examiner for the degree project you are discussing will decide whether the public discussion is approved (given a pass grade) or not.

Tip: Attend a public discussion before you do one yourself.

Tip: Conduct the public discussion before you finish writing your own report. This can be helpful to see what problem areas there may be in a report, allowing you in turn to increase the quality of your own study.

Registration of examination

Use the form “Examensarbete – Sammanställning av aktiviteter” (Degree project – Compilation of activities). It is available on LTH’s homepage. Fill it in as you complete the various components of your degree project: report, presentation, public discussion and popular science or scholarly article. When the form has been completed and all the component parts are signed by the examiner, hand it in to the department/course administrator who ensures that the degree project is registered as examined and passed.

The day after your pass grade has been registered in Ladok, you receive an email with the link to the evaluation questionnaire for your degree project. The questions are adapted to degree projects and cover aspects such as relevance, satisfaction, supervision and public discussion. Complete the survey and help to make degree projects at LTH even better!

Evaluation

PRINTING THE REPORT

Different departments have different rules for things like how to structure your report and how many copies to print. Contact your department and find out what rules apply there. Before printing, it is a good idea to go through your work one more time and check for example that the margins are wide enough, that the references to diagrams and charts are correct and that the images are of sufficient quality. Check which pages will end up on the left and which on the right hand side.

Remember: Are you printing in colour or in black and white? The choice can affect how readable and comprehensible your diagrams and photographs are in the document.

PUBLISHING THE REPORT

The department is responsible for publishing the degree project in LUP, Lund University Publications. Contact your department if you want your degree project to be searchable there. LUP is included in Uppsök, a national search engine for degree projects. Publication in LUP means that your degree project will also be searchable in Uppsök, which can be an advantage as potential employers sometimes consult the search engine.

Handbook for degree project writers

With the support of your supervisor, you are to achieve the learning outcomes set out in the course syllabus for degree projects. You will find the course syllabus on www.lth.se.

REMEMBER

- Theory and methodology are to be on the same level as the Master's courses in your specialisation.
- You are to carry out the entire chain from problem formulation to problem solving independently.
- Plan your work so that you complete the assignment within the deadline.
- Critical thinking is to permeate the entire degree project.
- You are to clearly state how your degree project relates to sustainable development and to ethical issues.
- The report is to be so comprehensive that it clearly shows that you have achieved all the learning outcomes in the course syllabus.

Tip: Discuss the outcomes stated in the syllabus with your supervisor during the course of the work.



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