

Instructions for conducting a Master's degree project in Molecular Biology

DEPARTMENT OF BIOLOGY | LUND UNIVERSITY | 2017-2018



Before the start

- a. **Read these instructions carefully.**
- b. **Contact the study advisor**, Tina Ledge, at the Education office in the Ecology building, to discuss the prerequisites for the Master's project. Tina will confirm that you are eligible to start the project by adding a signature on [the registration form \(.pdf\)](#).
- c. **Contact a supervisor within the area of your interest** and discuss the general outline of the project. Before proceeding, you should show your CV and LADOK excerpt to the supervisor. Note that the project can be conducted outside the university, e.g. at a company. [You find some project proposals at our website](#). If you do not find what you want or if you do not know what you want, your Master's programme coordinator may give advice.
- d. **Write a project plan** together with your supervisor when you have decided about a project (see below). Before the coordinator signs the form, he/she needs to approve the project plan. A preliminary shorter version of the plan is acceptable in advance, but it should be completed not later than by the end of the first week of the project.
- e. **Register at the Education office.** You need to be registered before starting your project, otherwise you may not be covered by an insurance. Complete the registration form.

The form should be signed by (in this order):

1. The study advisor, who checks that you fulfill the requirements
2. Yourself
3. The supervisor
4. The coordinator for the Master's specialization, who will look at the project plan, help you with questions around supervision and examination, and decide who should be the examiner of the project

To the form should be attached:

- Project plan and time plan (see below)
 - CV and LADOK excerpt showing which courses you have taken.
- e. **A contact person** will be appointed if the project is carried out outside of Lund University. The contact person will assist in supervision of the project and can not be examiner of the project.

Also remember:

- Projects to be performed during the summer must be registered before the **15th of June**.
- If you will do the project abroad, you must arrange insurances. Tina Ledge at the Education office will help you.

PROJECT PLAN

Write a project plan together with your supervisor. The plan should be brief, but give a clear description of your specific project (2-3 A4 pages). It should contain:

- Project title
- Name and e-mail addresses to you and the supervisor
- Topic, time, and number of credits
- Introduction, with theoretical background to the project and key references
- The specific aim(s) of your project
- Methods
- Time plan (rough planning of the project). Remember to include time for writing of the report and preparations for the seminar. A 30 credit project should be about 20 weeks; 45 cr correspond to 30 weeks and 60 cr to 40 weeks (90, 135 or 180 workdays, respectively).
- Key references (approx. 5-10)

The start

- a. **Write a popularized description of the project.** It is intended for publication on notice boards under "Ongoing Master Projects". The presentation should include your name, title of the project, supervisor, a short summary of the project and a picture of yourself. [Fill in the template \(.ppt\)](#), insert a photo and then email this to: christina.ledje@biol.lu.se.
- b. **During the degree project work you make daily notes in a Lab notebook.** You will get a notebook at the Education office. In this book you document your project and register your activities on a daily basis (see below). You should also note if you take time off (e.g. because of vacation, illness, malfunctioning machines etc), or other significant events. This Lab notebook, together with the project plan, may be used in the final examination and grading of your project. You should bring the notebook to the examination. It may be important for fair evaluation of the time spent on the project.

During the project

- a. **Carefully document your work in the Lab notebook.** Make careful notes to document experimental designs, technical details of experiments, raw data, calculations, results, conclusions, etc. This will give you training in how to document your work properly, and the notes will be essential when you write your final report. Further, your notebook will be extremely valuable for the research group that you work in. Therefore, write clearly so that your notes can be understood by others. Typically, this book will be left with your supervisor for future reference to your work and your results. You may make a copy of the notes for yourself.
- b. **If something is not working the way you would like it to,** e.g. problems with your supervisor, contact your Master's programme coordinator or contact person (if one has been appointed) as soon as possible. The earlier we start to discuss problems the sooner we can solve them.
- c. **You should participate in group meetings, seminars, etc** that may be arranged in the group or at the department where you are working.
- d. **It is advisable to start writing the report as soon as possible.** Parts of the Introduction and materials & methods can be written in parallel with your practical/theoretical work.

At half-time

- a. **A half-time checkpoint** is done when half the time of the project has passed (after 10, 15, or 20 weeks, depending on whether you do a 30, 45, or 60 credit project, respectively). It is done as a self-evaluation. [A specific form \(docx: 66 kB\)](#) is available for this purpose. The form contains a number of questions that you and your supervisor should discuss and answer together. The form should be filled in, signed, and sent to your programme/specialization coordinator. When your half-time checkpoint has been approved by the coordinator, the credits (15, 22.5, or 30 cr respectively) will be registered in LADOK.

In exceptional cases, a project can be prolonged (e.g. from 30 cr to 45 cr). Such extension can only be done at or before the half-time checkpoint. The reasons for the prolongation have to be explained in written form to the examiner, and a new project plan has to be submitted. Prolongation is only approved if the project plan is de facto extended to include additional elements.

The report

- a. **The project shall be presented as a scientific report in English.** Your report should follow the instructions on how to write manuscripts for a scientific journal (i.e. how the text should be organized, how figures and tables are presented, how references are handled). Choose together with your supervisor an appropriate journal as template. Get the "Instructions for authors" through the journal's website and study carefully how articles are written. Your report may deviate from these instructions on some points. For example, the layout should make the report easy to read, but also leave space for notes by opponent and examiner. Tables, figures, and figure legends should be embedded in the text, rather than collected on separate pages at the end like in a manuscript. Your report may be somewhat longer than a regular scientific paper. The goal is to sufficiently well explain chosen strategies, methods, obtained results, and interpretations, so that they are understandable for other Master's students in Molecular biology. Your report may include some preliminary or incomplete data (but it should in that case be clearly stated). Finally, the report should not be excessively long.
- b. **Plagiarism.** You are not allowed to present someone else's work, such as text, figures, or results, without giving proper reference. This also applies to material

you find on the Internet. You may of course refer to the works of others, but you must write about it in your own words and refer to the source of information in a correct way. If you quote someone, i.e. use someone else's wording in your text, this must be clearly stated. The same applies if you would like to use someone else's illustration. If you are unsure, you should discuss with your supervisor.

To avoid and prevent cheating and plagiarism, all Master theses written at the Department of Biology are sent to "[Urkund](#)" (see below), a program that uses internet/databases to scan a report for copied and plagiarized text. Your text is also added to the database, which prevents the contents of your thesis to be plagiarized by another student in the future.

- c. **Write a popular science summary of your project,** which must be approved by your supervisor before the examination. [Read the guidelines for writing the popular science summary \(.doc\)](#). Also let some of your fellow master students read and give feedback on your popular science summary. The popularized summary shall be included in the report that you hand in to the examiner and opponent so that it can be evaluated together with the report.

The examination

- a. **The examination committee** consists of:
- **The examiner.** The programme/specialization coordinator will act as examiner or appoint another senior professor from a relevant discipline in the Department of Biology.
 - **The external reviewer,** or the external opponent. This person could come from another department, or from a different discipline within the Department of Biology. The External reviewer is appointed by the examiner.
 - **The supervisor** will take part in the discussion, but not in the decision (exactly like at a PhD dissertation). If the supervisor can not attend the meeting of the committee (e.g. for external projects), he/she shall provide a written evaluation of the project or discuss directly with the examiner on telephone.
- b. **Date and time for the seminar** shall be decided by the examiner.
- c. **Submission of thesis.** The thesis should be submitted at least one week before the seminar. You should submit your final and complete thesis including the popular summary. The submission is done by sending the complete thesis to the examiner via the URKUND system using one of the following e-mail addresses

(depending on which specialization you follow and who is your examiner):

Molecular biology, general programme

torbjorn.sall.lu@analys.arkund.se

Medical biology

bodil.sjogreen.lu@analys.arkund.se

Molecular genetics and biotechnology

marita.cohn.lu@analys.arkund.se

Microbiology

lars.hederstedt.lu@analys.arkund.se

One-year Master's degree project

torbjorn.sall.lu@analys.arkund.se

NOTE! You must also send the report directly to the opponent at least one week before the seminar.

- d. **Announcing the seminar.** You should communicate date, time, and venue for the seminar, together with the title page of the report and names of opponent and examiner to christina.ledje@biol.lu.se who will assist in advertising the seminar to other students and faculty members.
- e. **Seminar.** At the examination, you will give a presentation (about 20–30 min). After your presentation, the examination committee will ask you questions and discuss your report and project, and thereafter the audience will be invited to ask questions. Finally, the examination

committee has an internal discussion before the examiner decides about the grading of the project. [A specific form is used for reporting the grading \(.pdf\)](#). The examiner is responsible for reporting the grade to the Education office (where it will be registered in LADOK).

- f. **Grades.** According to a decision by the Faculty of Science at LU (Dnr N 2011/130), there are two general criteria to reach the grade "Pass with distinction" (Väl godkänd):
- *"The student undertaking the degree project shall have demonstrated a good ability to independently complete a research task. This includes demonstrating creative skills with regard to formulating a problem, solving a problem and drawing conclusions, as well as the ability to place his or her results in a wider subject context, for example a research problem area or a relevant area of application. The written and oral presentations of the degree project shall be of high quality."*

- *"The total amount of time taken to complete the project must not have exceeded the timetable by more than 20 per cent".*

Thus, in order to have the possibility of obtaining the highest degree (pass with distinction/väl godkänd) a degree project cannot exceed the stipulated time with more than 20% (e.g. about 18 working days for a 30 cr project).

Further criteria for grading, as applied in the Department of Biology, are found at www.biology.lu.se/sites/biology.lu.se/files/GuidelinesEvaluationDegreeProject.pdf.

If the degree project does not fulfill the requirements for "Pass" (Godkänd), the student will be given instructions about how to improve the work to reach the grade "Pass".

After the examination

- a. **Make the last corrections and adjustments of the written report.** You will be given possibility (and are expected) to incorporate the changes suggested by the examination committee into the final version of your report.
- b. **Hand in the final version of your report to the Education office.** First make sure that the examiner approves the final version of the report. The report and the popular science summary should then be handed in both as a pdf and a Word file to Johanna B. Jonsdottir (johanna_b.jonsdottir@biol.lu.se) within two weeks after the examination. There, your report will be provided with a special cover page, and you will receive a copy of the final electronic version if you wish. Your report, or at least the abstract and title, will be published at Lund University's Master's thesis database (LUP Student Papers), Check at www.bibliotek.kc.lu.se/english/publish. It should be noted that reports in this database are publicly available, which should be taken into account if some parts of your work should remain confidential. If

you publish the whole report, this will be regarded as a publication and you can not publish the work in other outlets, e.g. scientific journals. Therefore, discuss with your supervisor if you should publish only the abstract or the whole thesis at LUP Student Papers.

- c. **Please also complete the Master's Evaluation form.** You will get the web address from the Education office to the evaluation in an e-mail.
- d. **Apply for your degree certificate.** You need to apply for your degree certificate at the Degree office. You apply for your certificate online through the Student Portal. Log in to the Student portal with your Stil ID and follow the instructions. You apply for the degree "Master (120 credits)" in "Molecular Biology" (major subject) with specialisation in "... " (if applicable). Contact Tina Ledje if you have questions. It may take up to three months for the Degree office to award the certificate.

Telephone numbers and web addresses

COORDINATORS MOLECULAR BIOLOGY

Main Coordinator Klas Flårdh	046-222 85 84
Klas.Flardh@biol.lu.se, Room B-A222a, Biology Building	
Specialization in Medical Biology Bodil Sjögren	046-222 93 48
Bodil.Sjogreen@biol.lu.se, Room B-B205, Biology Building	
Specialization in Molecular Genetics and Biotech. Marita Cohn	046-222 72 56
Marita.Cohn@biol.lu.se, Room B-A107A, Biology Building	
Specialization in Microbiology Lars Hederstedt	046-222 86 22
Lars.Hederstedt@biol.lu.se, Room B-A242, Biology Building	
Molecular biology, general, Torbjörn Säll	046-222 78 58
Torbjorn.Sall@biol.lu.se, Room B-A334, Biology Building	
One-year Master's (Magister) Torbjörn Säll	046-222 78 58
Torbjorn.Sall@biol.lu.se, Room B-A334, Biology Building	

ADMINISTRATOR

Course administrator Jóhanna B. Jónsdóttir	046-222 73 15
Johanna_B.Jonsdottir@biol.lu.se	

STUDY ADVISORS

Molecular Biology Christina Ledje	046-222 73 16
Christina.Ledje@biol.lu.se	
Biology & Bioinformatics Lotta Persmark	046-222 37 28
Lotta.Persmark@biol.lu.se	

USEFUL LINKS

Biology Education

www.biology.lu.se/education

Degree project registration form

www.biology.lu.se/sites/biology.lu.se/files/registermd.pdf

Project presentation powerpoint file

www.biology.lu.se/sites/biology.lu.se/files/templatePresentationDegreeProject.ppt

Lund University's Master thesis database

www.lunduniversity.lu.se/current-students/academic-matters-support/lup-student-papers

Guidelines for popular summary

www.biology.lu.se/sites/biology.lu.se/files/InstructionPopularSummaryMaster.doc