

Degree Project (Självständigt arbete) and Research Project at the Department of Biochemistry and Biophysics (DBB),

Degree Project: 15 hp and 30 hp First cycle (grundnivå).

Degree Project: 30 hp, 45 hp, and 60 hp, Second cycle (avancerad nivå)

Research Project: 15 hp, 22.5 hp and 30 hp

The Project can be done at the Department in one of the research groups, with one of the teachers/scientists as supervisor. The choice of research group is made by the student, prior to the beginning of the project. The best way to do this is to contact the scientists at the Department and discuss possible projects. Degree projects can also be performed as an external project. If the project is performed "outside" DBB, an external supervisor, as well as an internal, must be appointed.

Registration

Before the student can be registered in LADOK, the supervisor should submit a project plan (a specific form should be used, select the correct form, "Degree project" or "Research project") to the departmental examiner (see list at the end of this document). When the project plan is approved, the person in charge of the Project will inform the supervisor and also see to that the student is registered. The student cannot begin the study until being registered.

Examination

To pass the course the student has to present the studies at a seminar **and** in a written report. Students should also attend and take active part in *all* degree and research project seminars, in Biochemistry, Biophysics and Bioinformatics respectively, during the project period. In addition, the student has to submit a *Reflection document* to the Department examiner.

Evaluation form

The evaluation (on a form that will be provided by the Department examiner to the supervisor) should be done by the supervisor, taking the seminar, the written report and the student's performance in the lab into consideration. The final grade will be decided by the departmental examiner, based on the evaluation, the written report and the oral presentation.

Seminar

The presentation should be **20 min** followed by a 5 min discussion. Use the **provided template** for the first slide. Great effort should be put into the preparation of the presentation, with respect to both science and form of presentation, i.e. PowerPoint. The presentation should include an introduction to the research area to make it possible for the other participants in the seminar to understand.

All students are expected to take *active* part in the discussions following other presentations, and one student will be appointed for each of the students presenting, to specifically ask questions.

Two weeks before the seminar, at the latest, the title and a half-page abstract should be given to Charlotta Sturell (charlotta.sturell@dbb.su.se) by those expected to present at the seminar. These students will also get a request for an abstract from Charlotta. The abstract will be distributed to

those attending the seminar. Those students registered but not presenting will get the abstracts and a reminder to be present at the seminar.

The seminar should be given in English!!

The seminars are usually held at the end of the second to last week of every 9 week period. Supervisor(s) are expected to be present at the seminar.

Written report

A *paper copy* (as well as a pdf file) of the written report should be submitted to the Department examiner before the seminar or *within 7 days after the seminar*, alternatively on the last day of the period, whichever is the later. For exchange students not following the regular semester periods, the report should be submitted no later than one week before the student plans to leave DBB.

Before giving the report to the departmental examiner, the report must be approved by the supervisor, with respect both to the science presented *and* the general layout, language etc. The supervisor should fill out the evaluation form and email it to the departmental examiner.

The format of the report should be as a scientific paper in an international journal and be written according to the following specifications:

- Use the **provided template** for the first page.
- It should be written in a font 12 with 1.5 line spacing and with 2.5 cm margins.
- The length of the report including figures, tables and references, **should be** 15-20 A4 pages for 15 hp, 20-25 for 22.5 and 30 hp, 25-30 for 45 hp and 30-35 for 60 hp.
- The report should be organized in Abstract, Introduction, Materials & Methods, Results, Discussion, References. Results and Discussion may be combined when appropriate.
- Tables and figures should be included in the text with appropriate legends.
- When needed a more detailed description of the method(s) used, including a background, can be given as an Appendix, not included in the page limits given above.
- References should be referred to in the text in () or [] and numbered based on appearance in the text. References should be written in a style that includes the title of the paper referred to. The following are examples from a journal article (1) and an edited book (2).

1. Anagnostopoulos, C., and J. Spizizen. 1961. Requirements for transformation in *Bacillus subtilis*. *J. Bacteriol.* **81**:741–746.

2. Berry, L. J., R. N. Moore, K. J. Goodrum, and R. E. Couch, Jr. 1977. Cellular requirements for enzyme inhibition by endotoxin in mice, p.321–325. In D. Schlessinger (ed.), *Microbiology—1977*. American Society for Microbiology, Washington, D.C.

References should be to publications in international peer-reviewed journals, Wikipedia is *not* allowed!

The report should not be written as a tale about the purification of an enzyme, cloning of a gene, writing an algorithm etc. You will get a good idea of the format from any scientific paper or if you look in *Instructions for Authors*, which most journals publish on their home page.



The report should be written by *you*. If you want to quote a section of text, you must put that section within quotation marks and give the reference. The use of quotes should however be a minimum. If you copy figures from publications, this should be *clearly* stated in the figure captions. Using text or figures from any publication without giving the reference is plagiarism, which obviously is not allowed, and can lead to that you are expelled from the university for some time period. The report will be run through specific programs

to identify any text from published documents. Be sure you are familiar with the rules regarding plagiarism.



The report should be accompanied by a signed declaration regarding plagiarism.

Reflection document

This document should be 2 A4 pages in total, written in a font 12 with 1.5 line spacing and with 2 cm margins. The following subsections should be included:

- What did I learn
- What did I expect to learn
- In retrospect, what would/should I have done differently, other methods etc
- Suggest a next step in the project
- In what way would the results of your project be beneficial to society, any possible application(s)
- A 0.5 page popular science description of your project, written in Swedish (for those mastering Swedish) or English.



Grading of the Project will only be done if this document also has been submitted.



All grading will be done by the examiner and any transfer/translation/certificates to other grading systems (Erasmus students) should also go through the examiner.

Scientific Method

If you do a Degree Project at the Basic Level (1st Cycle), this course is an obligatory part and it is up to the student to apply. More information can be found here;

<https://www.science.su.se/utbildning/vetenskaplighet-1-5>

Department examiners

Biochemistry

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Bioinformatics

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Biophysics

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