



## DEPARTMENT OF CHEMISTRY AND MOLECULAR BIOLOGY

### **BIO780 Master's degree project in Molecular Biology, 30 credits**

Molekylärbiologi, examenskurs - masterexamen, 30 högskolepoäng

*Second Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Chemistry and Molecular Biology on 2014-06-13 and was last revised on 2020-02-11 to be valid from 2020-02-12, spring semester of 2020.

*Field of education:* Science 100%

*Department:* Department of Chemistry and Molecular Biology

#### **Position in the educational system**

This is a 30 hec degree project in Molecular Biology at advanced level. The course can be included in a Master's degree in Molecular Biology, Biology or Genomics and Systems Biology. The course can also be taken as a freestanding course.

The course can be part of the following programme: 1) Master's programme in Genomics and Systems Biology (N2GSY)

#### *Main field of studies*

Molecular Biology

Molecular Biology with Specialization in Genomics and Systems Biology

Biology

#### *Specialization*

A1N, Second cycle, has only first-cycle course/s as entry requirements

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#### **Entry requirements**

The students must have successfully completed the basic courses in Cell Biology, BIO900, 15 hec, Molecular Genetics, BIO905, 15 hec, Biological Form and Function, BIO910, 15 hec, Ecology and Evolution, BIO915, 15 hec and Biodiversity and Systematics, BIO920, 15 hec or equivalent courses.

English proficiency is required to the level of English 6/English Course B from Swedish Upper Secondary School, or be certified by an internationally recognized test, for example TOEFL, IELTS. In addition a completed depth course of 15 credits in a relevant area and a successfully completed degree project in Molecular Biology/Biology at ground level or advanced level of at least 15 hec is also required.

### **Learning outcomes**

The student will, with supervisor's help perform a project and at the same time, train the ability to apply the knowledge he/she gained during the studies.

After completing the course the students will be able to:

#### *Knowledge and understanding*

- Have in-depth knowledge of experimental planning.
- Have in-depth knowledge in the molecular biology field.
- Have in-depth knowledge of relevant theoretical and/or experimental methodology

#### *Competence and skills*

- Be able to independently plan and carry out experiments.
- Be able to analyze, evaluate and critically discuss achieved results.
- Report and account for the obtained results both in writing and orally.
- Have skills in experimental methodology used in the molecular biology area.
- Show ability to complete the task within given time frames.

#### *Judgement and approach*

- Demonstrate the ability to search, evaluate and critically interpret relevant information for the work.
- Be prepared for further postgraduate studies in the subject area.
- demonstrate ability to reflect on ethical and social aspects of molecular biology.

### **Course content**

The thesis aims to give the student contact with research in one of the fields of molecular biology. You should under supervision, perform an independent thesis work corresponding to one semester of full-time study. The work can either be experimental or take the form of a critical literature review based on original works. The work should then be presented both orally and written. Within the course, students will apply their knowledge and skills in molecular biological problems.

The student is also expected to participate in seminars and group meetings.

It is the student's responsibility to search for a project at the Department of Chemistry and Molecular Biology, at another department that conducts research in the subject area or externally at a company or authority. In order to be registered on the course it is required that the project is approved by the examiner for the course.

**Form of teaching**

The course consists of independent experimental and/or theoretical work. The work should be published as a scientific essay/report in English. The work should also be presented orally in a seminar at the end of the course.

*Language of instruction:* Swedish and English

**Assessment**

The course is completed when the student has written a report and given an oral presentation of his/her research work, and demonstrated the knowledge and skills to an extent that an examiner assesses as approved after consultation with the supervisor. The student is entitled to the replacement of the examiner, if practically possible, after being tested twice by the same examination such a request shall be submitted to the institution and shall be in writing.

**Grades**

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

**Course evaluation**

A written and/or oral evaluation is done at the end of the course.