



DEPARTMENT OF CHEMISTRY AND MOLECULAR BIOLOGY

BIO735 Master's degree project in Genomics and Systems biology, 30 credits

Genomik och Systembiologi, examenskurs - masterexamen, 30 högskolepoäng
Second Cycle

Confirmation

This course syllabus was confirmed by Department of Chemistry and Molecular Biology on 2018-02-20 and was last revised on 2022-08-19 to be valid from 2022-08-22, autumn semester of 2022.

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 biology at advanced level. The course can be included in the Master's program in Genomic and Systems Biology.

Main field of studies

Molecular Biology with Specialization in
Genomics and Systems Biology

Molecular Biology

Specialization

A2E, Second cycle, contains degree project
for Master of Arts/Master of Science (120
credits)

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Entry requirements

Approved basic courses in biology comprising 60 credits in the subject areas of cell biology, molecular genetics, evolution, botanical and zoological physiology, ecology and biodiversity and systematics, or equivalent.

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 course is intended to prepare the student for postgraduate studies in the subject, genomics and systems biology, and for occupational activities in the corresponding fields.

On successful completion of the course the student will be able to:

Knowledge and understanding

- have in-depth knowledge of relevant theoretical and /or experimental methodology.
- have in-depth knowledge of experimental planning.
- have in-depth knowledge in genomic and/ or systems biology.

Competence and skills

- show the ability to search, evaluate and critically interpret relevant research.
- show the ability to independently plan and carry out a theoretical and/or experimental study.
- show the ability to complete the task within given time frames. This means, if there are no special reasons, that the report and the oral presentation of the thesis must be completed within one year from the start.
- show such skill, e.g. to write scientific text/report and to present orally research results required to participate in research and development work or to independently work in other qualified activities.

Judgement and approach

- show the ability to search, value and critically interpret relevant information.
- to be prepared for further postgraduate studies in the subject area.
- demonstrate ability to reflect on ethical and social aspects of genomics and system biology.

Course content

The course consists of an individual project, conducted by researchers at institutions within the subject area. Usually, individual work is carried out within the framework of one of the ongoing research projects in the subject of genomic and/or system biology. The research carried out in genomics and system biology has a large breadth, so project work can be done in different areas with varying issues, such as general biology, environmental science, cell biology, biotechnology, medicine, mathematics, statistics, physics or computer science. Depending on the student's interest, the project may

contain several disciplines, of which you may need the involvement of more supervisors and institutions. In many projects, experiments are combined with more theoretical studies.

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: English and Swedish

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 practicable 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/during the course.