System Biology and Modelling, Bachelor Project

Programme course

16 credits
Systembiologisk modellering, kandidatprojekt
TBMT33
Valid from: 2020 Spring semester

Determined by
Board of Studies for Chemistry, Biology and Biotechnology

Date determined
2019-09-23
Main field of study

Biotechnology

Course level

First cycle

Advancement level

G2X

Course offered for

- Engineering Biology, M Sc in Engineering

Specific information

This course is not available for exchange students

Entry requirements

For admission to the course, see tab Common rules, headline Commencing a degree project. Apart from that, the student needs to have passed TDDB18 Programming in ADA grk and TFKE36 Biochemistry 2. To start with the actual project part of the course, the student must have taken the course TBMT19, which is a direct preparation for the systems biology project. If the student has not passed the course by the time of the re-examination (omdugga), the student is expected to perform an additional preparatory task.

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Intended learning outcomes

The student will work with the integration of their already acquired knowledge and skills within biology, biochemistry, mathematics, programming, and general problem solving. This is typically carried out via a project where a systems biology research question is answered. This questions is usually based on real experimental data, which contains the answer to the previously unanswered research question. Other types of research
questions and projects can be proposed, if the student finds a suitable supervisor.

Individual and professional skills: The student is expected to show an ability to

- formulate research questions and limit a project so that it can be carried out within the given time-frame
- search and evaluate scientific literature

Group work and communication: The student is expected to show an ability to

- express himself/herself professionally both in writing and in oral presentations, within all the different examination forms: group-presentation for the customer, oral presentation (3 in total), poster presentation, and a written thesis
- to critically examine and discuss, both in writing and at a presentation event, a thesis made by another group

CDIO professionalism: The student is expected to be able to

- put the work in relation to its scientific, societal, and ethical consequences

Course content

The detailed content of the project is determined in discussion between the students, the examiner, and the supervisor. The project should fall within the field of engineering biology.

Teaching and working methods

The course consists of an independent work, which performs a project that is formulated especially for each new year. These projects are primarily done in pairs, but they are also connected in larger groups, typically consisting of 6 students. The course stretches over the entire spring semester.

Examination

PRA1  Project work with poster presentation, written report, etc  U, G 15 credits
UPG1  Opposition  U, G 1 credits
The project work include a poster presentation, a written report, an oral presentation, a group seminar and a reflection document. The examinations are completed when the bachelor's thesis is approved and ready for print, when a printed poster has been defended at a poster presentation, when the project has been presented at least one oral presentation, when an approved discussion with the customer has been done, and when the individual reflection document has been handed in. Grades are given as ‘Fail’ or ‘Pass’.

Grades

Two grade scale, older version, U, G

Other information

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is Swedish, the course as a whole or in large parts, is taught in Swedish. Please note that although teaching language is Swedish, parts of the course could be given in English. Examination language is Swedish.
- If teaching language is Swedish/English, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English (depending on teaching language).
- If teaching language is English, the course as a whole is taught in English. Examination language is English.

Other

The course is conducted in a manner where both men's and women's experience and knowledge are made visible and developed.

The planning and implementation of a course should correspond to the course syllabus. The course evaluation should therefore be conducted with the course syllabus as a starting point.

Department

Institutionen för medicinsk teknik

Director of Studies or equivalent
Marcus Larsson

Examiner

Gunnar Cedersund

Course website and other links

Education components

Preliminary scheduled hours: 125 h
Recommended self-study hours: 302 h