

# System Biology and Modelling, Bachelor Project

Programme course

16 credits

Systembiologisk modellering, kandidatprojekt

TBMT33

Valid from: 2017 Spring semester

**Determined by**

Board of Studies for Chemistry, Biology  
and Biotechnology

**Date determined**

2017-01-25

## 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

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.

## Prerequisites

General requirements to be able to start the course is found on "LiTH:s generella regelverk". 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.

## 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 question 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

UPG1 Opposition	1 credits	U, G
PRA1 Project work with poster presentation, written report, etc	15 credits	U, G

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 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, U, G

## 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

## Course literature

Bestäms individuellt för varje student i samråd med examinator och handledare. Detta härrör från det faktum att projekten är specifika för varje studentpar.

## Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at [http://stydokument.liu.se/Regelsamling/Innehall/Utbildning\\_pa\\_grund-\\_och\\_avancerad\\_niva](http://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva).