SI1410 Basic Modeling in Biotechnology 6.0 credits

Grundläggande modellering inom bioteknologi

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

The course plan applies from HT 2025 according to faculty board decision: S-2024-1356

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

SF1624 Algebra and Geometry, SF1525 Basic Course in Numerical Methods, SF1625 Univariate Analysis

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

1. Create simple models for systems of relevance in biotechnology such as product formation in bacterial culture, metabolic processes in the cell and protein interaction.
2. Solve these models both analytically and numerically by primarily using course materials Matlab codes with own edits.
3. Visualize the solutions graphically.
4. Analyze and discuss the plausability of the results.

Course contents

Cells: growth, interaction, diffusion, neurons, biopolymers. Systems and disease. Genetics and Genomics.

Examination

- LAB2 - Laboration 2, 1.5 credits, grading scale: P, F
- TEN1 - Exam, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboration 1, 1.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Completed laborations and passed written exam.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.