Modelling of Biological Systems

Programme course

6 credits

Modelling of Biological Systems

NBID31

Valid from: 2017 Spring semester

Determined by
Board of Studies for Chemistry, Biology and Biotechnology

Date determined
2017-01-25

Offered for the last time
Autumn semester 2025

Replaced by
NBID85

Main field of study
Biology

Course level
Second cycle

Advancement level
A1N

Course offered for
- Ecology and the Environment, Master's Programme
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering

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
120 ECTS including NBID53 or TFBI23 or equivalent.

Intended learning outcomes
To use basic knowledge of models for applied and theoretical problems in ecology. To use the three stages (i) formulate and construct a mathematical model from verbal description of known experimental relations, (ii) mathematicallly analyse and apply a model, and (iii) interprete and evaluate the mathematical analysis in the context of the experimental knowledge.

Course content
Basic R programming. Discrete and continuous models. Deterministic and stochastic models. Modern presentation techniques.

Teaching and working methods
Lectures, seminars, and projects.

Examination

UPG2	Project	2 credits	U, G
UPG1	Assignments	4 credits	U, G

Grades given are Fail or Pass.

Grades

Two-grade scale, U, G

Department

Institutionen för fysik, kemi och biologi

Director of Studies or equivalent

Agneta Johansson

Examiner

Anna Eklöf

Education components

Preliminary scheduled hours: 48 h
Recommended self-study hours: 112 h

Course literature

Mooney och Swift, 1999: A Course in Mathematical Modeling.

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://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.