Molecular Genetics

Programme course

6 credits

Molekylärgenetik

NBIC52

Valid from: 2017 Spring semester

Determined by
Board of Studies for Chemistry, Biology and Biotechnology

Date determined
2017-01-25

Main field of study
Biology, Biotechnology, Chemical Biology, Chemistry

Course level
First cycle

Advancement level
G2X

Course offered for
- Chemical Biology, M Sc in Engineering
- Biology
- Chemical Biology
- Chemistry

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
50 credits in biology or chemistry/chemical biology including a course in Biochemistry or Genetics.

Intended learning outcomes
The aim of the course is to provide basic knowledge of structure and function of proteins and nucleic acids in prokaryotic and eukaryotic organism. After completing the course the student will be able to:

- give an account of the structure and functin of nucleic acids and proteins
- give an account of the mechanisms for replication,transcription and translation
- give an account of mutation, reparation and recombination of the DNA
- describe some applications of genetic engineering, genomics and genetic markers
- show experimental skills in the area of molecular genetics

Course content
The course treats the functions and structures of nucleic acids and proteins. Further, the course introduces the concepts of transcription, translation, control of gene expression, mutations, DNA repair and DNA recombination. The course also includes the topics genomics, genetic engineering and genetic markers. In the course there are also laborations with basic methods in molecular biology and molecular genetics. The seminars are focusing on current research in molecular genetics for the development of a sustainable society.

Teaching and working methods
The course includes lectures, laboratory work and seminars.

Examination

UPG1	Seminar assignments	0.5 credits	U, G
LAB1	Laboratory work	1.5 credits	U, G
TEN1	Written examination	4 credits	U, 3, 4, 5

Grades
Four-grade scale, LiU, U, 3, 4, 5

Department
Institutionen för fysik, kemi och biologi

Director of Studies or equivalent
Agneta Johansson

Examiner
Johan Edqvist

Course website and other links

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

Course literature

Pierce: Genetics - A conceptual approach; 5:e upplagan Berg, Tymoczko & Stryer: Biochemistry; 8:e upplagan Laborationskompendium från institutionen
Rekommenderad litteratur: Berg, Tymoczko & Stryer: Biochemistry; 8:e upplagan

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.