

Cellbiological Methodology

Programme course

6 credits

Cellbiologisk metodik

TVCB11

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, Engineering Biology

Course level

First cycle

Advancement level

G2X

Course offered for

- Engineering Biology, M Sc in Engineering
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Protein Science, Master's programme

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

Biology, Biochemistry, Cell Biology, Microbiology

Intended learning outcomes

The course gives basic knowledge about how different methods can be used for studying cell and tissue structure and function. After the course the student will be able to:

- explain how cells and tissues should be prepared for further analysis
- for a given cell biological problem to choose appropriate analytical method
- explain the advantages and disadvantages of different analytical methods
- explain the theory behind the chosen preparation method for cells/tissue
- explain the theory behind the chosen method of analysis
- perform a theoretical project included literature search
- account for project work in written and oral
- defend their own presentation and oppose to the work of others

Course content

Tissue and cell preparation for microscopy.
Biological markers used in methods discussed within the course.
Fluorometry, cytometry and flow cytometry.
Cell culture and cell separation techniques.
Chemiluminescence.
Electron microscopy, fluorescence microscopy, ratio imaging and confocal microscopy: construction and function of the equipment.

Teaching and working methods

The course consists of lectures, practical exercises on the basis of problem-based learning as well as a theoretical project and seminars.

Examination

UPG1	Hand-in assignments w oral a written presentation.Opposition	3 credits	U, G
LAB1	Laboratory work with oral and written reports	3 credits	U, G

Grades are given as 'Pass' or 'Fail'.

Grades

Two-grade scale, U, G

Other information

Supplementary courses: Master profiles in Engineering Biology.

Department

Institutionen för klinisk och experimentell medicin

Director of Studies or equivalent

Kajsa Holmgren Peterson

Examiner

Kajsa Holmgren Peterson

Course website and other links

<http://www.hu.liu.se/ike/grundutbildning/kurser-for-tekniska-hogskolan/cellbiologisk-metodik?l=sv>

Education components

Preliminary scheduled hours: 40 h

Recommended self-study hours: 120 h

Course literature

Artiklar och kompendier

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.