



LUNDS UNIVERSITET  
Lunds Tekniska Högskola

*Course syllabus*

## Cellens biologi Biology of the Cell

**EXTA70, 7,5 credits, G1 (First Cycle)**

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED W

Date of Decision: 2023-03-27

### General Information

Main field: Technology.

Compulsory for: BME2, N2

Language of instruction: The course will be given in Swedish

### Aim

This course is an introduction to cell biology. It deals with the cell structures and functions and provides an overview of the complex processes that occur in living cells. The course provides the foundation in cell biology for further biological /medical studies.

### Learning outcomes

#### *Knowledge and understanding*

For a passing grade the student must

understand and be able to describe

- differences and similarities in the composition and structure of different cell types
- photosynthesis and respiration
- composition and replication of DNA
- gene expression and the regulation of gene expression.

#### *Competences and skills*

For a passing grade the student must

be able to carry out

- basic laboratory routines and the use of common laboratory equipment for cell biology

applications

- microscopy studies and interpretation of microscopy-generated images of different cell types and cell components

### *Judgement and approach*

For a passing grade the student must

understand and discuss the structure of a living cell and how different essential processes in the cell take place and how they interact.

## **Contents**

The structure of cells and the composition of microorganisms, plants and animals. The structures and functions of proteins, nucleic acids and membranes. The mechanism of energy conversion. Cell production, mitosis, cell cycle and cancer proliferation. Cell differentiation and different specialized animal cells. DNA structure and DNA replication. Gene expression and protein synthesis.

## **Examination details**

**Grading scale:** TH - (U,3,4,5) - (Fail, Three, Four, Five)

**Assessment:** Written examination. Participation in compulsory laboratory works and group exercises is needed for a passing grade. The grade is based on the written exam.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

## **Admission**

**The number of participants is limited to:** No

**The course overlaps following course/s:** TEK295

## **Reading list**

- Bruce Alberts, Karen Hopkin, Alexander D Johnson: Essential Cell Biology, 5th edition. W. W. Norton & Company, 2019, ISBN: 9780393680362.

## **Contact and other information**

**Course coordinator:** Anders Enjin, Anders.Enjin@biol.lu.se

**Course homepage:**

<http://www.biologi.lu.se/utbildning/grund-och-avancerad-utbildning/kurser/kurser-grundniva/biologiska-kurser-pa-grundniva-for-teknologer>

**Further information:** One laboratory report is presented in English.