



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Cellbiologi

Cell biology

KBKF05, 7,5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED B/K

Date of Decision: 2023-04-18

General Information

Main field: Technology.

Compulsory for: B2

Language of instruction: The course will be given in Swedish

Aim

The aim of the course is to give an understanding of basic molecular mechanisms in a living cell.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

be able to describe and explain:

- the structure of a eukaryotic cell and the cell cycle
- eukaryotic genes and their control
- stem cells, stem cell therapy and cell cloning
- structure and function of the human immune system
- basic cellular and physiological processes in the human body

Competences and skills

For a passing grade the student must

- be able to prepare a short, report of a central area in cell biology based on scientific articles, and be able to orally present a central area of cell biology,
- be able to perform a basic laboratory work within cell biology.

Judgement and approach

For a passing grade the student must

- be able to perform basic ethical positions within cell biology,
- be able to do a basic assessment of the quality of scientific work in cell biology.

Contents

The cell nucleus and the organisation of the chromatin. Gene structure, exons and introns. Protein sorting and secretion. Cell division and control of the cell cycle. Immunology. Molecular physiology. Stem cells and cancer. Cultivation of higher eukaryotic cells. Research animals/Ethical considerations. Laboratory work with mammalian cells and fluorescent markers.

Examination details

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

Assessment: Written and/or oral report of a literature assignment, which gives extra points to the exam, written exam, and laboratory report. The final grade is based on a total examination result.

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.

Parts

Code: 0117. **Name:** Cell Biology, Theory.

Credits: 6. **Grading scale:** TH. **Assessment:** Written and/or oral report of a literature task. Written examination.

Code: 0217. **Name:** Cell Biology, Practicals.

Credits: 1,5. **Grading scale:** UG. **Assessment:** Written report as instructed by supervisors. Active participation.

Admission

Assumed prior knowledge: KBTA05 Introduction to Biotechnology

The number of participants is limited to: No

The course overlaps following course/s: KBK070, KBK020

Reading list

- Berg, J.M. and Tymoczko, J.L., Stryer, L.: Biochemistry, 9th edition. W.H. Freeman & Co, 2019, ISBN: 978-131911465-7.
- Alberts, Bray, Hopkin et al.: Essential Cell Biology, (4th or) 5th edition. Garland Publishing, 2019, ISBN: 9780393680393.
- Laborationskompodium i Cellbiologi.

Contact and other information

Course coordinator: Lieselotte Cloetens, Lieselotte.Cloetens@tbiokem.lth.se

Course homepage: <http://www.tbiokem.lth.se>

Further information: Some parts might be teached in English.