



# SK2513 Cell Culture: Theory and Practice 4.0 credits

**Celldeling: teori och praktik**

This is a translation of the Swedish, legally binding, course syllabus.

## **Establishment**

Course syllabus for SK2513 valid from Autumn 2018

## **Grading scale**

A, B, C, D, E, FX, F

## **Education cycle**

Second cycle

## **Main field of study**

Biotechnology

## **Specific prerequisites**

For single courses students, 120 hp is required in engineering and natural sciences or equivalent, as well as knowledge of English B or equivalent.

## **Language of instruction**

The language of instruction is specified in the course offering information in the course catalogue.

# Intended learning outcomes

The course is designed for physicists who are interested in working with biological objects such as cultured animal cells. The aim of the course is to provide answers to questions that arise during experiments on living cells and during the practical work with cell culture.

Upon completion of the course, students should be able to:

- account for the basic characteristics of animal cells
- account for the main needs of cultured cells / requirements for cell environment in cell culture
- assess which equipment and consumables are needed for cell culture and for experiments on living cells
- describe which modern techniques are used in cell culture
- from the knowledge about the cell culture techniques and cell properties, be able to assess and motivate which cells and which cell culture techniques are most suitable for different experiments
- perform the basic procedures in cell culture (count, replate cells, assess their condition)
- understand the risks and ethical problems related to cell culture

## Course contents

Purposes of cell culture. Safety and legislation. Cell culture laboratory: equipment, cleaning, appliances. Cell culture methods. Media and solutions. Freezing and thawing. Contamination of cell cultures. Methods for measuring cell viability / cell death.

Lectures (10 hours), laboratory work (12 hours).

Laboratory exercises:

- replating of animal cells (two lab occasions)
- assessment of cell viability / cell death

## Course literature

Lecture notes, cell culture protocols.

ECACC Handbook – Fundamental Techniques for ECACC Cell Lines (online).

## Examination

- TEN1 - Written exam, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory experiments, 2.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

## **Other requirements for final grade**

Laboratory exercises (LAB1 2,0 credits, grade: P)

Written exam (TEN1 2,0 credits, grade scale: A, B, C, D, E)

## **Ethical approach**

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.