FSK3532 Biomedicine for Engineers 7.5 credits

Biomedicin för ingenjörer

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

Establishment

Course syllabus for FSK3532 valid from Autumn 2021

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Enrolled PhD student.

Language of instruction

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

Intended learning outcomes

After completing the course, students should be able to:

- describe the basic structure and function of molecules, cells, tissues and organs in living organisms
- describe mechanisms and structures for the transport of various substances within and between cells
- describe basic processes for the cell's energy supply and cell renewal
- describe from cellular to organ level the mechanisms that make an organism function as a whole (metabolism, neuronal signaling, immune system, hormonal action)
- identify and critically discuss ethical issues that occur in biomedical research
- be able to correctly use the terminology learned in the course in presentations about their research for audience with a background in clinical studies or biomedicine

Course contents

Cell structure and components. Biomolecules. Basic principles of cellular functions: transport, metabolism, signaling and reproduction. The structure o tissues an organs and their function.

Basic principles for how an organism, e.g. a human, functions at the system level.

Ethical aspects in biomedical research.

Examination

- INL1 - Hand in assignment, 1.5 credits, grading scale: P, F
- SEM1 - Seminar, 1.0 credits, grading scale: P, F
- TEN1 - Written exam, 5.0 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.

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.