BB2380 Biochemistry, Theory 7.5 credits

Biokemi, teori

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

Establishment

Course syllabus for BB2380 valid from Spring 2013

Grading scale

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

Education cycle

Second cycle

Main field of study

Biotechnology

Specific prerequisites

Admission requirements for programme students at KTH:
At least 150 credits from grades 1, 2 and 3 of which at least 100 credits from years 1 and 2, and bachelor's work must be completed, within the programme CKEMV or CINEK.

_Admission requirements for independent students:
_A minimum of 20 credits within the fields of Mathematics, Numerical Analysis and Computer Sciences, 5 credits of these must be within the fields of Numerical Analysis and Computer Sciences, 20 credits of Chemistry, possibly including courses in Chemical Measuring Techniques and 20 credits of Biotechnology or Molecular Biology.

Documented proficiency in English corresponding to English B.

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 to provide a basic knowledge of the cell's macro molecules and the cellular processes on a molecular level and give an introduction to biochemical analysis and separation methods.

After passing the course, the student should be able to:

- describe and summarize the cell's basic biochemical processes on a molecular level and solve more simple problems.
- describe the connection between catabolism and anabolism
- expand his/her understanding within biochemical, bio-process technical, molecular biological and enzymological areas

Course contents

Biochemical analysis and separation methods

Enzymology (catalysm, kinetics, mechanisms, inhibition)

Protein structure, function and biosynthesis

Glycolysis, gluconeogensis and the citric acid cycle

Glycogen, lipids and nitrogen metabolism

The calvin cycle and the pentose phosphate pathway

Metabolic rule mechanisms

G-Proteins

Hormone control and signal transference

Biological membranes and transport processes over membranes

Oxidative phosphorylation and photosynthesis

Course literature

Kurslitteratur meddelas inför kursstart.

Examination

- TEN1 - Examination, 7.5 credits, grading scale: A, B, C, D, E, FX, 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

A written exam (TEN1; 6 credits, grading scale A-F).

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.