



BB2505 Frontiers in Life Science

3 1.0 credits

Kunskapsfronten inom livsvetenskaperna 3

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

Establishment

Course syllabus for BB2505 valid from Autumn 2016

Grading scale

P, 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. The 150 credits should include a minimum of 20 credits within the fields of Mathematics, Numerical Analysis and Computer Sciences, 5 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.

**Admission requirements for independent students:

**A total of 20 university credits (hp) in life science courses (e.g. biochemistry, microbiology

and gene technology/molecular biology). 20 university credits (hp) in mathematics. 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 goal of this course is to expose students to recent advancements in the field of Systems Biology. On completion of the course, the student should be able to:

- Demonstrate an understanding of techniques used in systems biology
- Give an example from the literature of when a “systems” approach gave good insight into metabolism not available by other techniques
- Discuss how biomedical and environmental research can benefit from bioinformatics analysis of big data.

Course contents

This course will explore the rapidly growing field of systems biology. Systems biology entails large-scale data acquisition and analysis, and data is often interpreted with metabolic models.

Students will be assigned literature in advance. Students will then attend 2 seminars or lectures within the theme "Systems biology," with either medical or environmental focus. Students will then write reports on these. The reports will summarize the seminar as well put it in context with the literature and other courses in the Masters programme. The reports will be peer-reviewed and discussed in classroom sessions.

Course literature

- Scientific articles and web resources assigned during the course.
- Seminars assigned during the course.

Examination

- PRO1 - Project, 1.0 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.