BB2100 Microbiology, General Course 9.0 credits

Mikrobiologi, allmän kurs

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

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

Establishment

Course syllabus for BB2100 valid from Autumn 2007

Grading scale

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

Education cycle

Second cycle

Main field of study

Biotechnology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

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

- have a general knowledge about microorganisms and their role in nature.
- understand microorganisms' replication and physiology
- be aware of microorganisms' benefits and dangers for other living organisms
- understand microorganisms' meaning for science and industry
- master presentations technique to be able to convey scientific findings

Course contents

The course covers microorganisms' role in nature, their morphology and structure. Taxonomical, physiological, and ecological aspects of viruses, bacteria, fungi, and protozoa are covered. Nourishment requirements, growth and sporulation are studied. Sterilization, disinfection and antibiotics are discussed. The basics of bacterial genetics and the base of medicinal microbiology through mechanisms for pathogenesis are discussed. Microbiological ecology with land and water microbiology is studied as well as symbiosis. Some illustrative applications of microbiology are discussed. **Labs**Light and phase contrast microscopy, sterilization techniques, bacterial content measurement. Pure cultivation and diagnostics of unknown microorganisms isolated from a natural environment. Cytological-microscopic research. Cultivation in anaerobic environments. Differentiating and selective media. Enzyme tests and evidence of microbial products. Preparation of substrates. Growth and nourishment experiments. Antibiotic spectrum. FISH.

Course literature

Madigan et al.: Brock – Biology of Microorganisms (2006)

Laboratory manuals.

Examination

- LAB1 - Laboratory Course, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 1.5 credits, grading scale: P, F
- TEN2 - Examination, 4.5 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.

Other requirements for final grade

An oral exam in connection with the presentation of the lab assignments (TEN1; 1.5 credits, grading scale A - F), Written exam (TEN2; 4.5 credits, grading scale A – F) and Lab reports (LAB1; 3 credits, grading scale Pass/Fail).

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.