



BB1030 Microbiology 9.0 credits

Mikrobiologi

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

Establishment

Course syllabus for BB1030 valid from Autumn 2022

Grading scale

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

Education cycle

First cycle

Main field of study

Biotechnology, Technology

Specific prerequisites

Completed upper secondary education including documented proficiency in English corresponding to English A.

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:

- have a general knowledge about microorganisms and their occurrence in nature
- understand structure, replication and physiology of microorganisms
- be aware of techniques for identification of microorganisms
- have an awareness of microorganism cooperation with and ability to harm other living organisms
- Choose and select suitable methods to control microbial growth
- understand implications of microorganisms for science and industry, specifically on the environment, human beings and the society
- describe societal factors that are responsible for the spread of antimicrobial resistance
- master presentation techniques to be able convey scientific observations

Course contents

The course handles microorganism morphology and structure along with their occurrence in nature. Taxonomical and physiological aspects of viruses, bacteria, protozoa, algae and fungi are covered. Special consideration is given to the bacterial cell, its nourishment demands and growth. Control of growth is clarified through sterilization, disinfection and antibiotics. The basics of bacterial genetics are covered along with bacterial genetic development toward modern phylogenetics with the help of gene sequencing of 16s rRNA. Mechanisms for sickness, for example: toxins and bacteria which are resistant against the body's defenses, are also covered. Some meaningful microbial diseases are given as examples.

Significant microbial processes for application within traditional and modern biotechnology are also covered. A couple of examples of such processes are biological water purification and ground decontamination.

Examination

- TENB - Written exam, 5.5 credits, grading scale: A, B, C, D, E, FX, F
- PROA - Advanced study, 0.5 credits, grading scale: P, F
- LABA - Laboratory Work, 3.0 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

Passed examination (TENA; 5,5 credits, grading scale A-F), passed laboratory exercises (LABA; 3 credits, grading scale Pass/Fail) and passed group exercise (PROA; 0.5 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.