Course syllabus for

Microbiology, 3 credits

Mikrobiologi, 3 hp
This course syllabus is valid from spring 2023.
Please note that the course syllabus is available in the following versions:
Spring2013 , Spring2022 , Spring2023

Course code	1OP057
Course name	Microbiology
Credits	3 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Not applicable
Level	GX - First cycle
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Microbiology, Tumor and Cell Biology
Decided by	Programnämnd 8
Decision date	2012-11-06
Revised by	Education committee CNS
Last revision	2022-09-28
Course syllabus valid from	Spring 2023

Specific entry requirements

Matematik 2a, 2b or 2c, Naturkunskap 2.

Objectives

The aim of the course is for the students to acquire such knowledge of microorganisms and about human immune system that is required for a professional acting as optometrist. The students should acquire basic knowledge of human immune system and about infectious matters and their pathogenic ability and transmission with special emphasis on the infectious matters that can cause disease in the eye and the principles of how one can prevent, recognise and treat infectious diseases.

On completion of the course, the student should be able to

- have general knowledge of basic properties of infectious matters
- have detailed knowledge of the infectious matters that can cause disease in the eye at people, in order to be able to a) identify different conditions in the eye with relation to microbiology and/or

immunology, b) related to microbiology and immunology understand the limitations of actions possible for an optometrist, and c) identify measures that should or should not be taken by an optometrist as health care professions
- be familiar with the principles of disinfection and sterilisation and apply these as optometrists
- account for disease processes in the eye and the visual organ that is caused by microorganisms, or due to hypersensitiveness, and how these arise
- name infections in eye and hypersensitivity reactions (above all allergic), and risks for these in relationship with the use of optical aids and instruments that come in contact with the eye
- understand how these conditions can be avoided or minimised
- be oriented about treatment of infectious diseases
- have knowledge about the most important drugs that are used at treatment above all of diseases in or around the eye.

Content

The general structure of bacteria, viruses and protozoa, their subdivision and pathogenic characteristics.
Infection and epidemiology.
Detection of microorganisms and viruses.
The defense system of the body, inflammation, immune deficiencies and hypersensitivity.
Methods to prevent and treat infectious diseases.
The character of common infections of the eye.

Teaching methods

The teaching is conducted through

a) lectures
b) a seminar for which different cases are available that should be studied before the seminar, so that the students are able to discuss which different infectious matters or immunological factors that can be of significance in the individual cases
c) a laboratory session, during which the student is given the opportunity to learn how to cultivate bacteria and how one can characterise their appearance on Agar plates with so-called Gram staining. Cultivation of own skin bacteria before and after desinfection demonstrates the importance of hygiene.

Active attendance at the seminar and lab is compulsory, see heading "Examination".

Examination

The course is examined in the following way:
a) Written examination that covers the full course content, including seminars and laboratory session, is graded U, G or VG
b) Active attendance at compulsory seminar and laboratory session

The course is graded U, G or VG. The grade G requires G on written examination, and fulfillment of compulsory course elements. The grade VG requires VG on written examination, and fulfillment of compulsory course elements.

Absence from or unfullfillment of compulsory course element
The examiner decides whether, and if so how, absence from or unfulfillment of compulsory course elements can be made up for. Study results cannot be reported until the student has participated in or fulfilled compulsory course elements, or compensated for any absence/ failure to fulfill in accordance with instructions from the examiner. Absence from or unfulfillment of a compulsory course element may imply that the student can not retake the element until the next time the course is offered.

It is possible to *switch* seminar and laboratory session with a classmate, but it is not allowed to alone choose a seminar or laboratory session other than one has been allocated.

Possibility of exception from the course syllabus' regulations on examination
If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected knowledge, skills and attitudes may not be changed, removed or reduced.

Transitional provisions

If the course is cancelled or goes through substantial changes, information about interim regulations will be stated here.

Other directives

Course evaluation takes place according to guidelines established by Karolinska Institutet. Compilation of the students' answers in course questionnaires and the course coordinator's analysis of these are published on KI's public course web.

Some teaching may be in English.

Literature and other teaching aids

Brauner, Annelie
Medicinsk mikrobiologi & immunologi
Castor, Birgitta; Falk, Kerstin; Kärre, Klas; Sjöling, Åsa

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