



**Karolinska
Institutet**

Course syllabus for

Microbiology - methodology and diagnostics, 7.5 credits

Mikrobiologi - metodik och diagnostik, 7.5 hp

This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

Please note that the course syllabus is available in the following versions:

Spring2009 , Autumn2009 , Spring2013

Course code	1BA014
Course name	Microbiology - methodology and diagnostics
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedical Laboratory Science
Level	G2 - First cycle 2
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Laboratory Medicine
Decided by	Programnämnden för Biomedicinska analytikerprogrammet
Decision date	2008-10-22
Course syllabus valid from	Spring 2009

Specific entry requirements

General entry requirements for higher education and specific entry requirements as stated in the programme syllabus for the Biomedical laboratory science education and completed courses in Laboratory diagnostics 9 HE credits, Basic laboratory methodology, 6 HE credits, Analytical and biochemical methodology 7.5 HE credits, Instrumental technique including radio physics 7.5 HE credits, Cell culture 3 HE credits, Biochemistry 1, 6 HE credits, Biochemistry 2, 6 HE credits and Cell and molecular biology, 6 HE credits or the equivalent knowledge.

Objectives

The aim of the course is to provide basic knowledge in microbiology and microbiological methodology through theoretical and practical studies. On completion of the course, the student should be able to: - explain principles of classification, propagation and transmission of bacteria, and their structure, synthesis and metabolism - explain principles of classification of virus and their structure and replication - indicate the most common microorganisms in clinical microbiology and the infections they cause - describe the normal flora, vaccines and the importance of antibiotics within microbiology - independently plan and carry out microbiological analyses, explain the analysis principles and document

and interpret the results in a workbook - compile a complete laboratory report on a growth experiment and interpret the results and draw conclusions from these - explain the concepts of pathogenicity, virulence factors and resistance development - discuss and reflect on patient cases within the subject area and present and account orally for the contents of the patient cases

Content

In microbiology, the principles of classification of bacteria, and their structure, synthesis and metabolism, and classification of virus and their structure and replication, and classification of fungi and protozoons and their structure and replication are treated. In the special microbiology, human normal and pathogenic microbial flora, and antibiotics and vaccines, are brought up. Within microbiological methodology, different methods for the identification of bacteria, fungi, protozoons and viruses are used. In the laboratory sessions included in the course in bacteriology, the growth of bacteria is studied in fluent nutrition agents and typing of aerobic and anaerobic bacteria. Study visits are made in bacteriology, mycology and virology. The following parts are included: Microbiology - theory 3 HE credits Microbiology - theory Methods in microbiology, theory 1.5 HE credits Methods in microbiology, theory Microbiology - methods and laboratory experiments 3 HE credits Microbiology - methods and laboratory experiments

Microbiology - theory, 3.0 hp

Grading scale: VU

Methods in microbiology, theory, 1.5 hp

Grading scale: VU

Microbiology - methods and laboratory experiments, 3.0 hp

Grading scale: VU

Teaching methods

The teaching is given as lectures, seminars with overviews of patient cases and laboratory sessions with written laboratory reports and study visits. The student should document laboratory work in a personal workbook.

Examination

The course is examined through a written final examination in microbiology theory and microbiological method theory. An oral presentation of a patient case is included as an examination form for laboratory sessions and seminars in microbiological methodology. Analysis of a sample unknown to the student should be carried out individually. A complete laboratory report should also be submitted for assessment and approval. All laboratory sessions and oral presentations are compulsory. In case of absence from laboratory sessions and oral presentations, an agreement is made between the student and the responsible teacher concerning compensation. Students who have not passed the regular examination are entitled to participate in five more examinations. If the student is not approved after four examinations, he/she is recommended to retake the course at the next regular course date and may, after that, participate in two more examinations. If the student has failed six examinations/tests, no additional examination or new admission in the course is given. The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. An examination for which the student registered but not participated in, will not be regarded as an examination.

Other directives

Course evaluation will be carried out in accordance with the guidelines established by the Board of Education.

Literature and other teaching aids

Murray, Patrick R.; Rosenthal, Kenneth S. 0 319233; Pfaller, Michael A.

Medical microbiology

5. ed. : St. Louis : Mosby, cop. 2005 - x, 963 s.

ISBN:0-323-03303-2 LIBRIS-ID:9878822

[Library search](#)

Ringsrud, Karen Munson; Linné, Jean Jorgenson

Linné & Ringsrud's Clinical laboratory science : the basics and routine techniques

Turgeon, Mary L.

5. ed. /b [editor] Mary L. Turgeon : St. Louis, Mo. : Mosby Elsevier, cop. 2007 - xiv, 608 s.

ISBN:0-323-03412-8 LIBRIS-ID:10255799

[Library search](#)

Sillerström, Eva

Kompendium i mikrobiologi, 50 sidor (tillhandahålles av lärare)