

Infection Biology - Clinical Perspectives

Infektionsbiologi med kliniska perspektiv

7.5 credits

Programme course

8MEA19

Valid from: 2026 Spring semester

Determined by	Main field of study	
Chairman of The Board for First and Second Cycle Programmes	Medical Biology	
Date determined	Course level	Progressive specialisation
2024-10-18	Second cycle	A1N
Revised by	Disciplinary domain	
	Medicine	
Revision date	Subject group	
	Medical Biology	
Offered first time	Offered for the last time	
Spring semester 2026		
Department	Replaced by	
Institutionen för biomedicinska och kliniska vetenskaper		

Specific information

The course is elective in semester 2 or 4 in the Master's Programme in Experimental and Medical Biosciences. The course is given in English.

Course offered for

- Master's Programme in Experimental and Medical Biosciences

Entry requirements

- Bachelor's degree in a major subject area with relevance for biomedical sciences, equivalent to a Swedish Kandidatexamen with at least 90 ECTS credits in the following subjects:
 - biochemistry
 - cell biology
 - molecular biology
 - genetics
 - gene technology
 - microbiology
 - physiology
 - immunology
 - histology
 - anatomy
 - pathology
- English corresponding to the level of English in Swedish upper secondary education
- Exemption from Swedish

Intended learning outcomes

By the end of the course, the students will be able to:

Knowledge and understanding

- Explain the mechanisms underlying the ability of various pathogenic microorganisms to cause disease
- Describe the various interactions between the human host and infectious agent, from molecular to clinical level and apply this knowledge to explain clinical manifestations
- Based on mechanisms for the development of infectious diseases, explain principles for diagnostic methods, treatment and prevention of common human infections

Competence and skills

- Plan, perform and interpret experimental and diagnostic laboratory analyzes in medical microbiology

Judgement and approach

- Critically review and discuss scientific publications in infectious biology

Course content

The main content of the course is current areas in infection biology, medical microbiology, and virology with a focus on interactions between humans and pathogenic microorganisms, and with a perspective on clinical and global medicine.

The following specific subject areas are included in the course:

- Human microbiota
- Human pathogenic microorganisms
- Interactions between host and pathogenic microorganisms
- Virulence strategies and mechanisms exerted by pathogenic microorganisms
- Microorganisms and immune system
- Vaccines and vaccine development
- Antimicrobial agents and resistance to them
- Epidemiology of human infectious diseases
- Transmission routes and zoonoses
- New infectious diseases
- Experimental and diagnostic methods in medical microbiology
- Infectious diseases in the perspective of global medicine

Teaching and working methods

Within the Faculty of Medicine, student-centered and problem-based learning forms the basis of teaching. The student takes personal responsibility for the learning through an active and processing approach to the learning tasks. The working methods challenge the students to independently formulate questions for learning, to seek knowledge and to assess and evaluate acquired knowledge in dialogue with others. Students work together in groups based on real-life situations to develop their own learning, contribute to fellow students' learning and to practice cooperation. The teacher's role is to support students in this way of working.

Educational methods applied in this course are tutorial groups, seminars, lectures, laboratories, study visits and demonstrations.

Examination

The course is examined through an individual written exam and a written literature study with an oral presentation at a seminar (carried out in groups with individual assessment).

Active participation in the compulsory parts is necessary to pass the course and assessment is carried out continuously. Active participation includes giving individual contributions and/or reflections with relevance to the learning tasks.

Compulsory parts of this course are tutorial groups, laboratory work, seminars and demonstrations.

The examinations may be completed an unlimited number of times by the students who did not achieve a passing result.

The course is examined in English.

Grades

The grades for the course are fail, pass or pass with distinction. Grades for the individual written exam and the literature study forms the basis for the final course grade.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

Application for examination

Instructions on how to apply for examinations are given prior to the beginning of each course.

Re-examination

The date for re-examination should normally be announced by the date of the regular examination at latest; in which case the scope must be the same as at the regular examination.

Examination for students with disabilities

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Nomination of another examiner

A student who has taken two examinations in a course or a part of a course without obtaining a pass grade is entitled to the nomination of another examiner, unless there are special reasons to the contrary.

Grades

Three-grade scale, U, G, VG

Course literature

List of relevant literature is available at least 2 months prior to the start of the course as decided by the programme board. There is no mandatory literature in the course.

Other information

Planning and implementation of the course is to be based on the wordings in the course syllabus. A course evaluation is compulsory for each course and should include how the course is in agreement with the course syllabus. The course coordinator will analyse the course evaluation and propose appropriate development of the course. The analysis and proposal will be returned to the students, the Director of Studies, and as needed to the Education Board, if related to general development and improvement.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If the course is cancelled or undergoes major changes, examination is normally offered under this course syllabus, at a total of three occasions, within/in connection to the two following semesters, of which one in close proximity to the first examination.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.