Faculty of Medicine

BIMB33, Biomedicine: Host-Pathogen Interactions, 7.5 credits

Biomedicin: Värd-patogen interaktioner, 7,5 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by The Master's Programmes Board on 2021-03-16 to be valid from 2021-03-24, autumn semester 2021.

General Information

The course is compulsory in the Biomedicine programme and included in semester 3.

Language of instruction: English

Main field of studies	*Depth of study relative to the degree requirements*
Biomedicine	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

On completion of the course, the students shall be able to

- explain the composition of bacterial structures, bacterial genetics and communication, and how this differs from a human cell
- describe the principles of how different types of viruses (DNA, RNA, naked and enveloped viruses) are structured and the basic principles of their replication
- compare and illustrate different relations between bacteria, viruses and the host
- explain how bacteria and viruses cause disease in relation to the host response and damage
- explain molecular reasons for the diversity of bacteria and viruses in relation to selection

Competence and skills

On completion of the course, the students shall be able to

- analyse, interpret and compare genetic variation in viruses and bacteria
- find, evaluate and present scientific information related to host-pathogen interaction
- appear with a professional approach, respect others' opinions in discussions about host-pathogen interactions and meet given deadlines

Judgement and approach

On completion of the course, the students shall be able to

- reflect on how research and development of infectious diseases influences our possibilities to achieve the UN's Global Goals

Course content

The course covers basic knowledge about bacteriology, virology and infection, focusing on humankind. How the prokaryotic cell differs from the eukaryotic cell, focusing on genetics, aspects of surface structures and secreted proteins. Bacterial genetics and evolution are discussed in relation to infection and interaction with the host. The following is also discussed: the basic principles of the development, structure and replication cycle of viruses in relation to infection and immune response. Scientific communication, evaluation of sources and the importance of research in infection medicine to achieve the UN's Sustainable Development Goals are included as an important part of the course.

Course design

The course mainly uses student-active learning methods, which places requirements on the students to prepare before the teaching components. The students are expected to act professionally and, just as in a future work situation, participate constructively in the working group to achieve progress together.

The teaching combines lectures, individual preparation and group assignments. Laboratory sessions and applications of knowledge link to the learning outcomes relating to skills.

Assessment

The learning outcomes are assessed through two modules:

1. Course portfolio: 5 credits (Fail/Pass/Pass with Distinction)
2. Multiple-choice questions 2.5 credits (Fail/Pass)

The course portfolio includes laboratory sessions, oral and written presentations and a written individual reflection.

If there are special reasons, other forms of examination may apply.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with

a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.
To achieve the grade of Pass as final grade, all components must be passed To achieve the grade of Pass with Distinction as final grade, the grade of Pass with Distinction is required for the course portfolio.

Entry requirements

Passed examinations and course components in semester 1 and 2 of the programme for at least 45 credits and the completion of course BIMB22 The Cell and its Environment.

Further information

The course partly replaces the earlier courses BIMA47 and BIMA48.

Subcourses in BIMB33, Biomedicine: Host-Pathogen Interactions

Applies from H21

2101 Course portfolio, 5,0 hp
Grading scale: Fail, Pass, Pass with distinction
2102 Multiple-choice questions, 2,5 hp
Grading scale: Fail, Pass