

BIMA48, Biomedicine: Virology, 7.5 credits

Biomedicin: Virologi, 7,5 högskolepoäng

First Cycle / Grundnivå

Details of approval

The syllabus was approved by Committee for Biomedical, Medical and Public Health Education on 2016-02-10 to be valid from 2016-06-01, autumn semester 2016.

General Information

This course is a compulsory component of semester 3 of the Bachelor of Medical Science programme in Biomedicine.

Language of instruction: English

Main field of studies

Biomedicine

Depth of study relative to the degree requirements

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

- account for the structure and chemical and physical properties of viruses
- account for basic pathogenetic concepts within virology
- account for the infection process on the cell, organism and population level for a number of human viruses
- make predictions about the properties of newly discovered viruses based on knowledge of known viruses
- explain the pathogenic properties and distribution patterns of different human viruses based on knowledge of their molecular properties and the function of the immune system
- describe how a number of important antiviral drugs inhibit viral propagation

Competence and skills

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

- plan and execute described experiments within molecular virology
- compile, statistically analyse and interpret their own and others' experimental results or observations in virology
- present their own and others' results in molecular virology in speech and writing and using the correct terminology

Judgement and approach

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

- analyse and assess information on molecular virology from both mass media and scientific survey and original articles

Course content

The course deals with basic virology and virological terminology specialising in human virology. Among the topics addressed are the effects of a viral infection on the cell and organism level. The course focuses on molecular virology, particularly virus replication in the infected cell and the molecular mechanisms of this. Major emphasis is placed on understanding the replication cycle of viruses at the molecular level so that students can use this knowledge be able to understand how viruses cause disease in the infected host, escape its immune response and spread within an individual and a population.

A significant part of the course is devoted to the study of scientific survey and original articles on virological issues at the current research front in molecular virology. The main focus is on human pathogenic viruses, such as tumour virus, hepatitis virus, influenza, HIV and herpes virus, but attention is also paid to the viruses of the human virome apparently lacking pathogenic properties.

Group work in the form of cases and seminars including individual oral and/or written presentations aims to enable students to attain specialised knowledge within selected areas of molecular virology. The students are to formulate individual issues and process the assignment by means of literature searches and literature studies.

The aim of the laboratory exercises is to enable students to develop their ability to plan and execute scientific experiments, interpret and critically review results and compile these in an oral presentation to fellow students and researchers in biomedicine.

Course design

The teaching consists of lectures, seminars, laboratory exercises and assignments to be executed individually or in groups and presented in speech and writing, e.g. virological case studies and/or studies of research publications in virology.

The seminars, laboratory exercises and group assignments are compulsory.

Assessment

The assessment is based on three examination components: a written exam, course portfolio and biostatistics portfolio.

The written exam is used to assess the learning outcomes concerning knowledge and understanding.

The course portfolio is used to assess the learning outcomes of knowledge and understanding, competence and skills, and judgement and approach. For a Pass on the course portfolio, students must have passed the written assignments and the oral presentation, and participated actively in the compulsory components.

The biostatistics portfolio is used to assess outcomes concerning statistics.

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

Grades

Marking scale: Fail, Pass.

Entry requirements

To be admitted to the course, students must have 15 credits of basic chemistry, 15 credits of biochemistry or cell chemistry, 15 credits of cell biology and 7.5 credits of immunology.

Subcourses in BIMA48, Biomedicine: Virology

Applies from H16

- 1601 Written exam, 4,0 hp
Grading scale: Fail, Pass
- 1602 Course portfolio, 3,0 hp
Grading scale: Fail, Pass
- 1603 Biostatistical portfolio, 0,5 hp
Grading scale: Fail, Pass