



Faculty of Medicine

BIMA47, Biomedicine: Immunology and microbiology, 12.5 credits

Biomedicin: Immunologi och mikrobiologi, 12,5 högskolepoäng
First Cycle / Grundnivå

Details of approval

The syllabus was approved by Committee for Biomedical, Medical and Public Health Education on 2015-12-02 to be valid from 2016-01-01, autumn semester 2016.

General Information

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

Language of instruction: Swedish

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 microbial surface structures and analyse their interplay with the different barriers of the immune system
- account for the ability of microbes to colonise and relate to the immune system's initiation of the acute phase response of inflammation and fever
- account for the ability of microbes to infect and relate to the effector mechanisms of the innate immune defence system against infection
- distinguish the effector mechanisms of the adaptive immune defence system against extracellular and intracellular pathogenic microbes
- account for the creation of an immunological memory and the attainment of diversity in the immune response, and apply them to the specificity of the

This is a translation of the course
syllabus approved in Swedish

immune defence

- account for bacterial toxins and antigen variation, and relate them to the communication between microbes

Competence and skills

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

- find and assess relevant scientific information and synthesise it in a written report, taking into account the scientific content, language, structure, figures, tables and reference management
- perform a constructive peer review and reflect on the impact of processes on the content and quality of written work
- orally present a research study, taking into particular account clarity, structure and discussion ability

Judgement and approach

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

- assess and critically review information on immunology and microbiology from mass media sources (TV, radio, daily press, blogs, podcasts) and social media
- reflect on and justify how aims have been achieved and how practical and theoretical knowledge has been acquired
- assess their ability to plan their time, keep to stated time frames and identify possibilities for development

Course content

The aim of the course is to provide students with good basic knowledge in microbiology and immunology. The focus is placed on the cellular and molecular level. During the course, the participants will create a pathogenic microbe (exclusively in theory, of course) and explain how this microbe will infect human tissue, escape immune barriers and survive in intermediary fashion.

Furthermore, the course will enable the students to practise and develop generic skills expected of graduates in biomedicine, such as the ability to critically assess relevant (for the course) information from mass media sources and different social media. The students will also practise constructive peer review of fellow students' texts, to provide and receive criticism, to use scientific referencing and independently seek and assess appropriate information. Professional work in biomedicine requires the ability to comply with given frameworks for content and time so this is emphasised throughout the course. Students will also practise oral presentation and critical review.

Course design

The teaching is similar to so-called team-based learning (TBL) with thematic weeks. Students will receive assignments in conjunction with an introductory lecture at the start of the week. The students are to work individually on the assignments and will

be tested at the end of the week with compulsory Readiness Assurance Tests (RATs) consisting of short multiple choice questions. They are to be completed both individually (iRATs) and in groups (tRATs). The purpose of the RATs is to ensure that students have attained sufficient knowledge to execute the application assignments the following week. These are to be carried out in three-hour seminars and consist of cases or assignments of a similarly challenging nature.

A large part of the application is furthermore to take place in a major written paper creating the pathogenic microbe throughout the process of the course. The students assist each other through peer review and will also receive formative feedback from the examiner. As part of the examination, students will be required to keep three predetermined deadlines and produce the work in accordance with set guidelines so as to ensure that all learning outcomes are attained. The paper is to be presented orally in small groups including the examiner and a student critical reviewer.

The element of assessing and critically reviewing mass media sources and social media is addressed through a lecture on source criticism and press releases, and an article followed by a compulsory three-hour seminar instead of TBL.

Approximately midway through the course, students will be invited to carry out a course evaluation enabling them to influence the rest of the course, identify what has worked well and what can be improved. At the same time, all individuals will be evaluated anonymously by their group, the results will be compiled by the course management and individual feedback will be sent out.

The seminars and group work are compulsory components of the course.

Assessment

The assessment is based on two components: iRATs and a course portfolio.

To pass the iRATs component, students must have passed the individual test.

To pass the course portfolio, student must have executed the following components: individual written assignment, peer review, oral presentation and critical review, and passed written reflections.

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 chemistry, 15 credits of cell chemistry/biochemistry and 15 credits of cell biology.

Further information

This course replaces BIMA37.

Subcourses in BIMA47, Biomedicine: Immunology and microbiology

Applies from H16

- 1501 Individual readiness assurance test (iRAT), 2,5 hp
Grading scale: Fail, Pass
- 1502 Course portfolio, 10,0 hp
Grading scale: Fail, Pass