



DEPARTMENT OF CHEMISTRY AND MOLECULAR BIOLOGY

BIO467 Immunology and Disease Pathogenesis, 15 credits

Immunologi och sjukdomspatogenes, 15 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Chemistry and Molecular Biology on 2014-06-11 and was last revised on 2024-02-05 to be valid from 2024-02-21, autumn semester of 2024.

Field of education: Science 100%

Department: Department of Chemistry and Molecular Biology

Position in the educational system

This is a second-cycle course in Biology designed to establish an in-depth knowledge of Immunology in relation to disease pathogenesis,. The course can be included as part of a Bachelor's degree in Biology or Molecular Biology, or as part of a Master's degree in Biology and Molecular Biology. The course can also be taken as a freestanding course.

Main field of studies

Biology

Molecular Biology

Specialization

A1N, Second cycle, has only first-cycle course/s as entry requirements

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Entry requirements

Passed basic courses in biology comprising 60 credits in the subject areas of cell biology, molecular genetics, evolution, botanical and zoological physiology, ecology and biodiversity and systematics or equivalent courses.

English proficiency is required to the level of English 6/English Course B from Swedish Upper Secondary School, or be certified by an internationally recognized test, for example TOEFL, IELTS. In addition a completed first-cycle course in Immunology, 15 hec, is required or an equivalent course.

Learning outcomes

After completing the course the students will be able to;

Knowledge and understanding

- Distinguish and explain the innate and adaptive immune system's role in acute and chronic inflammation.
- Describe and account for mucosal immunology.
- Distinguish and explain the immune systems effector mechanisms in bacterial and viral infections.
- Explain the mode of action of established mucosal and systemic vaccines and adjuvants.
- Describe and account for tumor immunity and immunotherapy for cancer.
- Describe and account for the role of the immune system in autoimmune diseases and drugs that are intended to influence the immune system.

Competence and skills

- Discuss and evaluate the principles of the immune response in various infections and inflammatory conditions.
- Discuss and evaluate the principles of vaccination and the need for adjuvant.
- Discuss and evaluate the immune system's role in chronic conditions and how medication affects the immune system.
- Compile and present current knowledge from relevant sources within the course topic.

Judgement and approach

- Reflect on and evaluate scientific text in immunology
- Discuss and critically examine developmental needs and use of drug that enhance or suppress the immune system.

Course content

The course aims to provide in-depth knowledge of the immune system's structure, function and pathology, as well as its function in interaction with invading microorganisms and malignant cells. The course will also provide knowledge about the drugs used to suppress or enhance the immune system's effector functions.

Form of teaching

Teaching is mainly in the form of lectures, individual assignments and mandatory group assignments. Also writing of a scientific report is included.

Language of instruction: English

Assessment

Written examination, 8 credits

Group assignment, 2 credits

Individual assignment, 2 credits

Written assignment, 3 credits

The written exam is given three times every year: a regular examination at the end of the course and two extra exams.

Group assignment require active participation to achieve a passing grade. On occasional absence from the group seminars the student is required to submit a written report of the assignment. Systematic absence or lack of activity and knowledge during group assignments renders a failing grade. Should a student fail, the opportunity to complete group assignments by participation in the next year's regular course is given.

There will be several individual assignments during the course, if a student fail to pass these assignments two extra occasions will be offered.

The written assignment is examined twice a year: an annual submission by the end of the course and another opportunity until the next annual submission.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

For grade G, the student is required to pass the written exam and pass the group seminars and the written report. For the grade VG, pass with distinction on the written exam is required, along with pass on the group seminars and the written report. Group seminars and the written report is only graded G/U.

Course evaluation

Course evaluation takes the form of verbal dialoge with students and an anonymous written questionnaire. The teacher compiles an analysis of the course evaluation and provide suggestions for the development of the course. Analysis and suggestions are communicated to the students.