

Syllabus for Immunology, 15 higher education credits

1. Basic information

The syllabus was approved by the Education Committee of the Faculty of Science on 12 April 2007. The syllabus comes into effect on 1 July 2007. The course is at second-cycle level.

2. General information

The course is part of the main fields of Biology or Molecular Biology at the Faculty of Science. It is an optional second-cycle course for a degree of Bachelor or Master of Science in Biology or Molecular Biology. The course is also offered as a single subject course. The language of instruction may be English.

3. Learning outcomes

On completion of the course the student shall

- have practical and theoretical knowledge of immunology corresponding to the course content
- have received training in scientific problem solving, evaluation of results and oral and written presentations
- be prepared for third-cycle studies and for professional work within immunology.

4. Course content

Immunological methods: Immunoprecipitation, qualitative and quantitative methods, agglutination, immunoblotting, radio/enzymoimmunoassay and immunohistology.

Immunisation, isolation and characterisation of antibodies. Immune cell activation and detection. Hypersensitivity reactions and detection of food antigens.

Immunochemistry: Immunoglobulin structure and function. Transplantation antigens (MHC proteins) and antigen-antibody interactions. Immunogenetics, The complement system.

Cellular immunology: Innate immunity. Lymphoid cells and tissues. Differentiation, activation, interaction and effects of immune cells. Effector cells. Cytokines. Immunoregulation.

Immunobiology: Innate and acquired immunity to infection, inflammation, hypersensitivity reactions and immune diseases. Ontogeny and phylogeny of the immunity.

5. Teaching and assessment

Teaching consists of lectures, practicals and seminars. Lectures are often held by invited researchers in the various fields of immunology. Practicals are carried out as group work (usually in groups of two) and are reported in writing. Seminars have the form of group discussions of immunological issues and cases and as group work on different topics, including literature searches, written reports and student presentations.

Site visits to illustrate the various fields of application of immunology and to establish future contact for the students are also included on the course.

Practicals and seminars and the course elements associated with these are compulsory.

Assessment is carried out through written examination at the end of the course. A re-sit examination is offered soon after the examination to students who do not pass.

6. Grades

Students are awarded one of the following grades: Pass with Distinction, Pass or Fail.

To be awarded Pass on the whole course the student must pass the examination, pass the practical reports and participate in all compulsory course components.

The final grade for the course is determined by the written examination.

7. Admission requirements

To be eligible for the course applicants must have 90 higher education credits in Science subjects, including knowledge equivalent to MOB101 Cell Biology 10 credits, BIO006 Genetics and Microbiology 10 credits, Chemistry 10 credits and BIO577 Human Physiology 10 credits or BIO504 Zoology 8 credits.

8. Course literature

In accordance with an approved literature list, which will be available on the department website (<http://www.biol.lu.se/biologi>) at least five weeks before the start of the course.

9. Further information

The course can be credited as part of a degree with only one of the courses BIO783 Cellular and Molecular Immunology 10 credits or BIM082 Medical Immunology 10 credits.

The course cannot be credited as part of a degree that includes BIO617 Immunology 10 credits.