



## DEPARTMENT OF CHEMISTRY AND MOLECULAR BIOLOGY

### **BIO235 Immunology, 15 credits**

Immunologi, 15 högskolepoäng

*First Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Chemistry and Molecular Biology on 2014-06-11 and was last revised on 2022-05-05 to be valid from 2022-05-12, autumn semester of 2022.

*Field of education:* Science 100%

*Department:* Department of Chemistry and Molecular Biology

#### **Position in the educational system**

This is a first-cycle course in Biology designed to deepen the the knowledge in Immunology. The course can be included as part of a Bachelor's degree in Molecular Biology or Biology, or as part of a Master's degree in Molecular Biology, Biology or Genomics and Systems Biology. The course can also be taken as a freestanding course.

#### *Main field of studies*

Biology

Molecular Biology

#### *Specialization*

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

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#### **Entry requirements**

Completed 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, of which at least 45 credits must be approved.

English proficiency is required to the level of English 6/English Course B from Swedish Upper Secondary School, or be certified by an international recognized test, for example TOEFL or IELTS and completion of Chemistry, 30 credits or equivalent courses.

**Learning outcomes**

At the end of the course;

*Knowledge and understanding*

Students will understand the basic principles of immune mechanisms at the cellular and molecular levels; they will know how these mechanisms and systems integrate with each other.

*Competence and skills*

Students will be able to predict the basic immune mechanisms underlying the individual's response to infectious agents, tumours and self antigens.

They will be capable of applying advanced methods to examine hypotheses experimentally.

*Judgement and approach*

The team-based group approach of the course will enable the students to integrate information for analysis of complex problems; they will gain new teamwork and interpersonal skills enabling effective research group work.

**Course content**

The course is build up by weekly themes. In the beginning of the week students receive lectures relevant to the theme. Time for self-study is then allocated and this is followed by a Team-Based Learning group session at the end of the week. The theme "immunological techniques" covers two weeks; includes analysis and interpretation of data, literature searches and compilation of a written report.

The following topics are covered:

- Innate immunity and antigen presentation
- Lymphocyte development and T cell activation.
- Humoral immunity
- Lymphocyte migration and homing
- Immunological techniques
- Immunity to infection and tumors- immunological tolerance

**Form of teaching**

See above

All items except lectures are compulsory.

*Language of instruction:* English

**Assessment**

Written examination 9 credits, written report 3 credits and seminar 3 credits.

The written exam is given twice a year; a regular examination at the end of the course and another opportunity to write the exam will be provided before the next year's regular exam.

The written report is examined twice a year; a regular examination during the course and another opportunity to hand in the report will be provided before the next year's regular examination of written reports.

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

**Grades**

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

**Course evaluation**

Course evaluation by students will be made by anonymous questionnaire. The teacher compiles an analysis of the course evaluation and provides suggestions for further development of the course. Analysis and suggestion will be communicated to the students.