Advanced Immunology

Programme course

7.5 credits

Avancerad immunologi

8MEA01

Valid from: 2020 Autumn semester

Determined by
The Board for First and Second Cycle Programmes at the Faculty of Health Sciences

Date determined
2012-12-07

Revision date
2014-10-06

Main field of study
Medical Biology

Course level
Second cycle

Advancement level
A1X

Course offered for
- Master's Programme in Experimental and Medical Biosciences

Specific information
The aim of the course is to provide the students with an advanced knowledge of cellular and molecular immunobiology and medical immunology. Particular emphasis is placed on regulation of the immune system and how defects in this regulation can lead to diseases. The course is elective semester one or three in the Master's Programme in Experimental and Medical Biosciences.

Entry requirements
Bachelor's degree in a major subject area with relevance for biomedical sciences, equivalent to a Swedish Kandidatexamen ,with a total of at least 90 ECTS credits in some of the following subjects:

- biochemistry
- cell biology
- molecular biology
- genetics
- gene technology
- microbiology
- immunology
- physiology
- histology
- anatomy
- pathology

English corresponding to the level of English in Swedish upper secondary education (Engelska 6).
Exemption from Swedish.

Intended learning outcomes

By the end of the course the students will be able to:
Knowledge and understanding

- Identify and summarize the current status of knowledge within areas of cellular and molecular immunology
- Understand normal regulation of immunity and how aberrations in the regulation can lead to immunological diseases
- Understand the principles of immunomodulatory treatment and the role of the immune system in development of tumours

Competence and skills

- Plan and implement a given laboratory experiment on immune responses in vitro and evaluate and interpret the generated data

Judgement and approach

- Summarize, present, and evaluate current research in immunology in order to discuss new hypotheses within the area

Course content

- General immunobiology
- Immunogenetics
- Immunopathology
- Methods in immunology, in particular multiple bead array and ELISA for measurement of cytokines and chemokines
- Regulation of the immune system and homeostasis
- Immunological diseases: autoimmunity, allergy, inflammation, infections and immunological aspects of cancer
- Immunotherapy

Teaching and working methods

General: Linköping University Master's Programme in Experimental and Medical Biosciences applies student-centered learning among which Problem Based Learning (PBL) is one pedagogical philosophy and method. To prepare the students for future employment, practical and experimental work in laboratory settings are important parts of the programme in courses as well as in individual projects.
Specific: In this course lectures, tutorial groups, literature in-depth studies, seminars, and laboratory work are used.

Examination

Compulsory items
Active participation in the compulsory parts is necessary to pass the course, and assessment of them is carried out continuously. Compulsory parts in this course are: Tutorial groups, laboratory work and seminars.

Examination
Individual written examination.
Written laboratory report; group assignment with individual assessment.
Written report and oral presentation of literature study; group assignment with individual assessment.

Scope of re-examination
The extent of a re–examination shall be similar to the regular examination.

Change of examiners
Students who have failed the course or part of the course twice are entitled to request another examiner for the following examination occasion, unless specific reasons are present.

Registration for examination
The procedure for registration should be stated prior to the commencement of each course. In other respects, regulations concerning examination and examiners are applied in accordance with Linköping University policy.

Grades

Three-grade scale, U, G, VG

Other information

The planning and implementation of a course must take its starting point in the wording of the course plan. The course evaluation included in each course must therefore take up the question how well the course agrees will the course plan.

The course is carried out in such a way that both men's and women's experience and knowledge is made visible and developed.

If the course is withdrawn, or is subject to major changes, examinations according to this course plan are normally offered on a total of three occasions within one year, one of them in close connection to the first examination.

Department

Institutionen för biomedicinska och kliniska vetenskaper