BIO-479 **Immunology**

Ablasser Andrea

Cursus	Sem.	Type
Life Sciences Engineering	MA1, MA3	Opt.
Sciences du vivant	MA1, MA3	Opt.

Language of teaching	English
Credits	5
Session	Winter
Semester	Fall
Exam	Written
Workload	150h
Weeks	14
Hours	**5 weekly**
Courses	3 weekly
Exercises	2 weekly
Number of positions	

Summary

The students acquire knowledge regarding the functioning of the vertebrate immune system. A strong focus is placed on the molecular mechanisms underlying innate and adaptive immune responses and their implications for medicine. Students apply this knowledge during oral presentations.

Content

The subject will be introduced by lectures and/or self-directed exercises. It will be followed up by discussions on seminal primary research related to the topic based on oral presentations given by the students and or seminars. The course also includes a two-day practial session in the laboratory.
Topics include:

- Innate Immunity
- Antibodies and Antigens
- Activation and differentiation of T lymphocytes
- B cell immunology and humoral immunity
- Transplantation Immunology
- Vaccination
- Tumor Immunity

Keywords

- Immune cell subsets
- Pattern recognition receptors
- Signal transduction
- T cell differentitation
- Antigen processing and presentation
- B cell regulation

Learning Prerequisites

Required courses

Biologie I, II, Biologie Mole#culaire et Cellulaire I.

Recommended courses

Biologie Mole#culaire et Cellulaire II & III.

Important concepts to start the course

- cellular biology
- pathogens

Learning Outcomes

By the end of the course, the student must be able to:

- Recall knowledge of the immune response
- Assess / Evaluate the value and accuracy of primary scientific research
- Use available resources to generate an oral report on a immunological topic
- Propose strategies of translational immunity

Transversal skills

- Give feedback (critique) in an appropriate fashion.
- Make an oral presentation.
- Identify the different roles that are involved in well-functioning teams and assume different roles, including leadership roles.

Teaching methods

- Lectures
- Preparation and oral presentations of topics and of scientific articles
- Practial lab course

Expected student activities

- Revision of course content
- Presentation of scientific topic

Assessment methods

- Written assessment of acquired knowledge in an exam format
- Oral presentation

Supervision

Assistants	Yes