

Immunology and Pathology (C002769)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)
Credits 5.0 Study time 135 h Contact hrs 41.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 2)	English	Gent	lecture	25.0 h
			practicum	15.0 h
			online lecture	0.0 h

Lecturers in academic year 2020-2021

Guilliams, Martin WE14 lecturer-in-charge

Offered in the following programmes in 2020-2021

	crdts	offering
Master of Science in Teaching in Science and Technology (main subject Biology)	5	A
Master of Science in Biology	5	A
Exchange Programme in Biology (master's level)	5	A

Teaching languages

English

Keywords

Immunology, inflammation, molecular

Position of the course

The course aims at the acquisition by the student of basic knowledge of immune defense mechanisms at the cellular and molecular level, and to extend these mechanisms to immune dysfunctions and the resulting immune inflammatory pathologies.

Contents

- What is immune defense (immune effectors, adaptive versus innate immune defense, basic rules governing immune reactivity);
- Adaptive immunity (repertorium, humoral versus cellular immunity, effector T-cells, activation and tolerance, restoration of cellular homeostasis);
- Innate immunity (processes involved in inflammation, cellular and molecular effectors, inflammatory mediators, reaction cascades, activation and tolerance, tissue repair);
- Interaction and cooperation between innate and adaptive immune responses;
- Immune inflammatory pathologies (allergy, septic shock, lupus, rheumatoid arthritis, inflammatory bowel diseases, multiple sclerosis);
- Medical and technological applications (vaccination, diagnosis, cancer therapy, monoclonal antibodies, proteomics, ELISA).

Note, that the Covid-19 health crisis may require to adapt the teaching or the examination conditions. The Practicum could for example be adapted.

Initial competences

Basic knowledge of animal cell biology

Final competences

- 1 Knowledge of the mechanistic, functional and pathological characteristics of immunology and inflammation.
- 2 An introduction to the most important technological applications of immune principles.
- 3 An introduction to the practice of a number of immune applications, techniques and

analysis methods.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, practicum, online lecture

Learning materials and price

Illustrations used during the course will be made available through the UGent Ufora website. Additionally, the following textbook will be used:
Immunobiology 9th edition, Kenneth Murphy and Casey Weaver, Garland Science. 2017, ISBN 978-0-8153-4505-3.

References

None

Course content-related study coaching

Basic immune principles and applications will be illustrated further through practical exercises and will be further discussed in work college sessions. Individual contacts during these sessions along with further exchanges through email will be applied for individual coaching of the student.

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions, written examination with multiple choice questions, report

Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions, written examination with multiple choice questions

Examination methods in case of permanent evaluation

Written examination, report

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

The period-bound evaluation is based on a written examination.
The non-period-bound evaluation is performed once on the basis of an individual written report on the practical exercises.

Calculation of the examination mark

The period-bound evaluation accounts for 80% and the non-period-bound evaluation for 20%.