

From Genome to Organism (E092660)

Course size (nominal values; actual values may depend on programme)

Credits 6.0 Study time 180 h Contact hrs 60.0 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	English	lecture	45.0 h
		seminar	15.0 h

Lecturers in academic year 2018-2019

Derom, Eric	GE35	staff member
Malfait, Fransiska	GE31	lecturer-in-charge
Deblaere, Karel	GE32	co-lecturer
Peeters, Harald	GE35	co-lecturer
Wullaert, Andy	GE35	co-lecturer

Offered in the following programmes in 2018-2019

	crdts	offering
Bridging Programme Master of Science in Biomedical Engineering	6	A
Bridging Programme Master of Science in Biomedical Engineering	6	A
Master of Science in Electrical Engineering (main subject Communication and Information Technology)	6	A
Master of Science in Electromechanical Engineering (main subject Control Engineering and Automation)	6	A
Master of Science in Electromechanical Engineering (main subject Electrical Power Engineering)	6	A
Master of Science in Electrical Engineering (main subject Electronic Circuits and Systems)	6	A
Master of Science in Electromechanical Engineering (main subject Maritime Engineering)	6	A
Master of Science in Electromechanical Engineering (main subject Mechanical Construction)	6	A
Master of Science in Electromechanical Engineering (main subject Mechanical Energy Engineering)	6	A
Master of Science in Biomedical Engineering	6	A
International Master of Science in Biomedical Engineering	6	A
Master of Science in Biomedical Engineering	6	A
Master of Science in Chemical Engineering	6	A
Master of Science in Computer Science Engineering	6	A
Master of Science in Computer Science Engineering	6	A
European Master of Science in Photonics	6	A
Master of Science in Sustainable Materials Engineering	6	A
Master of Science in Chemical Engineering	6	A

Teaching languages

English

Keywords

Life sciences

Position of the course

Aim of the course is to give the students insight in the molecules of life, principles of cellular organisation, gene structure, replication and expression, the building of the

human body and the immune system.

Contents

- The Molecules of Life: Nucleic Acids, Proteins, Lipids, Carbohydrates
- Principles of Cellular Organisation: Structure of the Cell, The Generation of Cellular Energy, Cell Division
- Gene Structure, Replication and Expression: Structure of DNA, The Genetic Code, Replication of DNA, Genetic Recombination, Gene Expression and Protein Synthesis
- The Building of the Human Body: The Skeleton, the Muscles and the Joints, The Cardiovascular and Respiratory System, The Gastrointestinal System, The Urogenital System, The Hematopoietic System, The Endocrine System, The Nervous System and the Senses
- The Immune System: Innate or Aspecific Immunity, Acquired or Specific Immunity, Immune Disorders, Testing Immunity

Initial competences

none

Final competences

- 1 Basic knowledge of the structure and physiology of the cell; molecular biology; protein structure; the building of the human body; organ systems; immunology.
- 2 Understanding how loss of physiological homeostasis may lead to diseases.
- 3 Recognizing anatomical structures using imaging techniques; understanding how medical imaging techniques represent parts of the human body.
- 4 Searching and understanding scientific, biomedically oriented information and preparing a scientific communication.

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, seminar

Learning materials and price

Syllabus, hands out

References

Course content-related study coaching

Evaluation methods

end-of-term evaluation

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

Written examination

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

Written examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

During examination period: written closed-book exam.

Part of the exam (imaging part) is computer based, multiple choice exam using standard setting

The evaluation of the personal scientific essay yields 30% of the score for this course.

Calculation of the examination mark