

Cell Biology and Genetics (C003177)

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 125 h Contact hrs 32.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	Gent	teaching methods	hours
			seminar: coached exercises	7.5 h
			lecture	25.0 h
			online seminar: coached exercises	0.0 h
			online lecture	0.0 h

Lecturers in academic year 2020-2021

De Jaeger, Geert

WE09 lecturer-in-charge

Offered in the following programmes in 2020-2021

[Bachelor of Arts in Philosophy](#)

crdts offering

5 A

[Bachelor of Science in Biology](#)

5 A

Teaching languages

Dutch

Keywords

cell structure, metabolism, heredity, gene

Position of the course

The course deals with the fundamentals of cell biology and genetics. Besides a functional description of the cell structure and its components, the students get acquainted with the two essential elements of living systems: metabolism and genetic information.

Contents

- The cell: structure, organisation of eukaryote and prokaryote cells, organelles, the cytoskeleton, membranes, intracellular transport, intercellular communication.
- Energy streams in cells: fundamentals of general biochemistry. ATP as carrier of biological energy ; Enzymes: general principles; Production of ATP via aerobic respiration; Photosynthesis.
- Classical Genetics: chromosomes as carriers of the genes; mitosis and meiosis; the laws of Mendel and extensions; the relation genotype and phenotype.
- Molecular genetics: structure of DNA and replication; effects of mutations, gene expression, basics of gene regulation.

Initial competences

The course essentially starts from the basis.

Final competences

- 1 The student knows and understands the basic principles and broad concepts of cell biology, biochemistry and genetics.
- 2 The student knows the relations between genetic information, metabolism and general cellular processes.
- 3 The student is able to properly use the genetic and cell biological terminology and is able to fluently express them in writing.
- 4 The student is able to integrate its basic knowledge of genetics and cell biology and to apply it on basic problems in genetics and cell biology.
- 5 The student can apply basic statistical principles on genetic problems.

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: coached exercises, online lecture, online seminar: coached exercises

Extra information on the teaching methods

25u lecture, 7u guided exercises

Because of COVID19, modified working methods can be rolled out if necessary

Learning materials and price

Dutch syllabus (Ufora), power-point presentations during the lectures.

Text book (not obligatory): «Campbell Biology» of Reece et al. (Global Edition). This book is also used in the courses «ecology» and »biodiversity». Price 70 EUR.

References

Reece et al. (2013) – Campbell Biology (10th edition).
Pearson, ISBN-10: 0321775651.

Course content-related study coaching

Through exercises on capita selecta from the course. Questions can always be asked during or after the lecture, via e-mail or on a personal appointment.

There is interactive support through an electronic learning environment (<http://Ufora.UGent.be>)

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

Students are evaluated on theoretical knowledge and understanding and applying of the course content. During the exercises, the type of questions that can be expected on the exam and the way of answering, will be illustrated. Example of previous exams will be uploaded on Ufora.

Calculation of the examination mark

The final score relies for 100% on the score obtained during the written exam. Details are explained during the exercises.