

Course size (nominal values; actual values may depend on programme)
Credits 5.0 Study time 150 h Contact hrs 60.0 h

Course offerings and teaching methods in academic year 2019-2020

Offering	Language	Teaching Method	Hours
A (semester 1)	English	microteaching	0.2 h
		group work	2.8 h
		lecture	30.0 h
		seminar	12.0 h
		practicum	15.0 h
B (semester 2)		seminar	12.0 h
		microteaching	0.2 h
		practicum	15.0 h
		lecture	30.0 h
		group work	2.8 h

Lecturers in academic year 2019-2020

Depuydt, Stephen KR01 lecturer-in-charge

Offered in the following programmes in 2019-2020

Programme	crdts	offering
Credit contract within Ghent University Global Campus	5	B
Bachelor of Science in Environmental Technology	5	A
Bachelor of Science in Food Technology	5	A
Bachelor of Science in Molecular Biotechnology	5	A
Joint Section Bachelor of Science in Environmental Technology, Food Technology and Molecular Biotechnology	5	A

Teaching languages

English

Keywords

Cell Biology; Biochemistry; Mendelian Genetics; Molecular Biology; Origin, evolution and tree of life

Position of the course

'General Biology' constitutes a basic course in biology with emphasis on the universal features of life, i.e. the general concepts in biological sciences. The course gives an introduction on the general (cell) biological processes in life forms, next to dealing with major concepts in energy generation (heterotrophs and autotrophs) as well as genetics and genetic information. The course also creates an overview of the different life forms and places this in the context of evolution.

Contents

1. The general structure of a cell: pro- and eukaryotic cells and organization, organelles, cytoskeleton, membranes, cellular transport, intercellular communication.
2. Flow of matter and energy in life: primary metabolism of the cell. ATP as biological energy molecule, basic features of enzymes, aerobic respiration, photosynthesis.
3. Genetics: chromosomes and genes, mitosis and meiosis, Mendel's Laws + extensions, genotype and phenotype.
4. Molecular biology: replication, transcription, translation and introduction to gene expression regulation.
5. Evolution: the origin of life

Initial competences

Secondary school knowledge of biology is an advantage, but it is a basic level course and no prior knowledge is assumed

Final competences

- 1 To know and appreciate the interrelationship, structure and function of different organelles and macromolecules in a cell.
- 2 To know and understand concepts and general principles of cell biology, genetics, biochemistry and molecular biology
- 3 To appreciate, understand and explain the link between genetic information, metabolism and general cellular processes
- 4 To use the correct biological terminology and to be able to explain major concepts in biology to both expert as well as layman audiences. To use the scientific content of this course for understanding/discussion/explanation of societal problems (e.g. diseases, biotechnological applications, food crisis, climate change, etc.).
- 5 To know and understand major similarities and differences between the different kingdoms that constitute life. To get an insight in, and be able to demonstrate, universal features of life.
- 6 To understand the origin of life and to comprehend and appreciate evolutionary processes.
- 7 To get an insight into the interdisciplinary character of biological sciences.

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

Group work, lecture, microteaching, practicum, seminar

Learning materials and price

Written syllabus and PowerPoint slides will be provided. Syllabus of the practical exercises will be available

References

Campbell Biology (tenth edition), Reece et al.

Course content-related study coaching

Weekly office hours, during which you can pass by for extra information, will be announced at the beginning of the course.
Feedback during permanent evaluation moments will be given.
Feedback after assignments/mock exams will be given.

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

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

Participation, assignment, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

(1) Non-periodic aligned evaluation:

The mark will be determined by participation in, and the reports of, the lab-exercises, groupwork/microteaching.

(2) Periodic aligned evaluation:

The final exam will evaluate the knowledge and understanding of major concepts in cell biological/biochemistry/genetics/molecular biology and evolution via open questions as well as figure questions.

The ability to solve genetic problems will be evaluated.

The ability to use the correct terminology will be evaluated via short questions that ask for definitions or brief explanations of some biologically important terms.

Five multiple choice questions will be asked, to assess the level of detail for important concepts.

Calculation of the examination mark

Periodic evaluation = 16/20; non-periodic evaluation = 4/20

Students need to attend the practical sessions in order to pass the course.

Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.