Course Specifications

Valid as from the academic year 2020-2021

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)

<table>
<thead>
<tr>
<th>Credits</th>
<th>Study time</th>
<th>Contact hrs</th>
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<tbody>
<tr>
<td>5.0</td>
<td>150 h</td>
<td>50.0 h</td>
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Course offerings and teaching methods in academic year 2020-2021

A (semester 1) Dutch Gent

| group work | 2.5 h |
| lecture | 30.0 h |
| guided self-study | 5.0 h |
| practicum | 8.75 h |
| microteaching | 3.75 h |

Lecturers in academic year 2020-2021

- Bauters, Lander LA25 lecturer-in-charge
- De Vos, Winnok LA25 co-lecturer
- Skirtach, Andre LA25 co-lecturer

Offered in the following programmes in 2020-2021

| Bachelor of Science in Bioscience Engineering (main subject Cell and Gene Biotechnology) | 5 | A |

Teaching languages

Dutch

Keywords

Molecular Biology, Cell Biology, Cytology, Biochemistry, Cell Communication and Development

Position of the course

This course should help you get insight in molecular mechanisms from the cell, such as growth, metabolism, regeneration and motility. These mechanisms are discussed starting from the different organelles within the cell and dynamic processes such as motility and cell division. Communication between cells and between tissues will be discussed from a molecular perspective. Methods used to investigate these processes will be touched as well.

Contents

1. The cell
   1.1. Introduction
   1.2. Cell structure
   1.3. Molecules
   1.4. Metabolism
2. Cell analysis
   2.1. Introduction
   2.2. Cell cultures
   2.3. Analysis techniques
3. Internal organisation of the cell
   3.1. membranes
   3.2. membrane transport
   3.3. Intracellular compartmentalisation and protein sorting
   3.4. Energy conservation
   3.5. Signaling mechanisms
   3.6. The cytoskeleton
   3.7. The cell cycle
   3.8. Apoptosis
4. Cells in a social context

(Approved)
4.1. The extracellular matrix
4.2. Cancer and aging

Initial competences
Cell Biology builds on certain learning outcomes of course unit ‘Biochemistry and Molecular Biology’; or the learning outcomes have been achieved differently

Final competences
1. Knowing and understanding the structure, construction and molecular composition of the cell.
2. Knowing and understanding several techniques (and their applications) to analyze cells.

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
Guided self-study, group work, lecture, microteaching, practicum

Extra information on the teaching methods
Theory: lectures
Exercises: guided practical exercises in the lab
Group task: poster presentation

Learning materials and price
Syllabus available, slides available on Ufora

References

Course content-related study coaching
Additional information or explanation can be obtained by personal contact, by email or during exercises.

Evaluation methods
end-of-term evaluation and continuous assessment

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

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

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
Theory: period-based evaluation, exam consists of an oral and written part.
Practicum: non-period based evaluation, lab reports, design and presentation of a scientific poster

Calculation of the examination mark
Theory: period-based evaluation (80%)
Exercises: non-period-based evaluation (20%)
The final mark is not necessarily a mathematical formulation of the partial grades. When obtaining a 8/20 or less on one of the parts (periodical or non-periodical evaluation), or when withdrawn/illegitimate from periodical and/or non-periodical evaluations, the figure is reduced automatically to the highest failed mark (9/20) if mathematically 10/20 or more would be obtained.

(Approved)