GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2025-2026

Analytical Biochemistry (C004085)

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

Credits 5.0 **Study time 150 h**

Course offerings and teaching methods in academic year 2025-2026

A (semester 1)	English	Gent	seminar	0.0h
			practical	
			lecture	
			independent work	0.0h
			group work	

Lecturers in academic year 2025-2026

Van Damme, Els	LA25	lecturer-in-charge
Devreese, Bart	WE10	co-lecturer
Vanhaeren, Hannes	LA25	co-lecturer

Offered in the following programmes in 2025-2026	**crdts**	**offering**
Bachelor of Science in Molecular Biotechnology	5	A

Teaching languages

English

Keywords

Analytical methods in biochemistry

Position of the course

Theoretical and practical overview of common techniques in the analysis of proteins and other biomolecules.

Contents

Methods in Biochemical analysis, i.e.

- Separation methods: extraction, electrophoresis, chromatography, ultracentrifugation,
- Protein Characterization (amino acid analysis, protein sequencing, mass spectrometry), introduction to proteomics,
- Study of post-translational modification and protein interactions (immunoprecipitation, pull down assay, tandem affinity chromatography, microscopical techniques, calorimetry, biosensors),
- Characterization of sugars and lipids,
- Immunological methods (ELISA),

Initial competences

A basic knowledge of physics, general chemistry and biochemistry are required.

Final competences

1 Have knowledge and understand the possibilities of the methods for biomolecular separations and purification.

2 Having knowledge and understand the techniques for protein characterization with methods such as amino acid analysis, protein sequencing, mass spectrometry.

3 The student receives an overview of common methods for the characterization of proteins, fatty acids and sugars as well as for the study of interactions between biomolecules. Emphasis is on the practical applications of the techniques.

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, Seminar, Lecture, Practical, Independent work

Extra information on the teaching methods

Practicum is obligatory

Study material

Type: Syllabus

Name: Analytical Biochemistry
Indicative price: Free or paid by faculty
Optional: no
Language : English
Number of Pages : 200
Oldest Usable Edition : 2024
Available on Ufora : No
Online Available : No
Available in the Library : No
Available through Student Association : Yes
Additional information: course notes are available as a pdf

Type: Syllabus

Name: Protein chemistry
Indicative price: Free or paid by faculty
Optional: no
Number of Pages : 150
Oldest Usable Edition : 2024
Available on Ufora : Yes
Online Available : No
Available in the Library : Yes
Available through Student Association : No

References

Protein Biochemistry and Proteomics, Rehm, H., 2006, Elsevier Academic Press.
ISBN978-0-12-088545-9

Course content-related study coaching

Additional information or explanation can be obtained by personal contact, by email or during exercises

Assessment moments

end-of-term and continuous assessment

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

Written assessment with open-ended questions

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

Written assessment with open-ended questions

Examination methods in case of permanent assessment

Professional practice, Participation, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

periodic evaluation during the first examination period Written examination with open questions (after 1st semester)
permanent evaluation: Participation, job performance assessment, report (2nd semester)

Calculation of the examination mark

Part Prof. Van Damme: 67% of total

Part Prof. Devreese: 33% of total
Students who echew period aligned and/or non-period aligned evaluation for this course unit may be failed by the examinator (non-deliberable quotation). Students must pass each part of the course in order to pass the entire course.