

## 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 2024-2025**

A (semester 1)	English	Gent	independent work lecture group work practical	0.0h
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**Lecturers in academic year 2024-2025**

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

**Offered in the following programmes in 2024-2025**

<a href="#">Bachelor of Science in Molecular Biotechnology</a>	<b>crdts</b>	<b>offering</b>
	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: Protein chemistry

Indicative price: € 8

Optional: no

Number of Pages : 150

Oldest Usable Edition : 2024

Available on Ufora : No

Online Available : No

Available in the Library : Yes

Available through Student Association : Yes

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

### 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 1<sup>st</sup> semester)

permanent evaluation: Participation, job performance assessment, report (2<sup>nd</sup> 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 examiner (non-deliberable quotation). Students must pass each part of the course in order to pass the entire course.

