

Analytical Biochemistry (C004085)

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

Credits 5.0 Study time 150 h Contact hrs 45.0 h

Course offerings and teaching methods in academic year 2019-2020

A (semester 1)	English	practicum	22.5 h
		lecture	22.5 h

Lecturers in academic year 2019-2020

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

Offered in the following programmes in 2019-2020

Bachelor of Science in Molecular Biotechnology	crdts	offering
	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),
- Peptide synthesis.

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, lecture, practicum

Extra information on the teaching methods

Practicum is obligatory

Learning materials and price

Course text and/or powerpoint slides are available via Minerva

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

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, oral examination

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, job performance assessment, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Calculation of the examination mark

Part Prof. Van Damme: 67% of total

Part Prof. Devreese: 33% of total

Students who e Chew period aligned and/or non-period aligned evaluation for this course unit may be failed by the examiner (non-deliberable quotation)