GHENT UNIVERSITY

Course Specifications

Valid in the academic year 2024-2025

Experimental Food Biochemistry (0000168)

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 2)	English	Incheon	lecture
			seminar
			practical

Lecturers in academic year 2024-2025

Mirzaei, Mahta	KR01	lecturer-in-charge

Offered in the following programmes in 2024-2025	**crdts**	**offering**
Bachelor of Science in Biochemistry and Biotechnology	5	A
Bachelor of Science in Environmental Technology	5	A
Bachelor of Science in Food Technology	5	A
Bachelor of Science in Molecular Biotechnology	5	A

Teaching languages

English

Keywords

Food chemistry, Food biochemistry, Instrumental methods of food analysis, Food proteins

Position of the course

Experimental food biochemistry focuses on the study of major food proteins. The course teaches theoretical knowledge and practical skills for isolation, purification and characterization of proteins. This knowledge is highly recommended for students who want to further specialize in graduate studies related to Food Science, Nutrition, and Food Technology.

Contents

- Protein purification laboratory
- Making an extract
- Measurement of protein and enzyme activity
- Separation by precipitation
- Separation by adsorption I: general principles
- Separation by adsorption II: ion exchangers and nonspecific adsorbents
- Separation by adsorption – Affinity techniques
- Separation in solution
- Purification of special types of proteins
- Small-scale and large-scale procedures
- Analysis for purity
- Optimization of procedures; final steps

Initial competences

Organic Chemistry I and II, Food Chemistry

Final competences

1 Have thorough and fundamental knowledge of the major food proteins.
2 Master methods for isolation, purification and characterization of food proteins.
3 Argue analytically about experimental procedures needed for isolation and separation of a particular major food protein from different agricultural raw

materials and their derived products.

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

Seminar, Lecture, Practical

Study material

Type: Slides

Name: Experimental Food Biochemistry
Indicative price: Free or paid by faculty
Optional: no
Language : English
Available on Ufora : Yes
Online Available : No
Available in the Library : No
Available through Student Association : No

References

Protein Purification: Principles and Practice, Scopes, Robert K. K.
Springer Advanced Texts in Chemistry, 1995
ISBN 978-1-4757
This book is available in the IGC library.

Course content-related study coaching

Email. Office visit

Assessment moments

end-of-term and continuous assessment

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

Written assessment with multiple-choice questions, Written assessment with open-ended questions

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

Written assessment with multiple-choice questions, Written assessment with open-ended questions

Examination methods in case of permanent assessment

Participation, Written assessment with open-ended questions, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is not possible

Extra information on the examination methods

Following practical session a written report will be submitted for evaluation and it
will contribute to the final mark with 30%.
Periodic evaluation in the form of a written performance assessment test will
contribute to the mark with 20%.
Absence from practical session will result in a maximum mark 9/20.

Calculation of the examination mark

Written examination with open questions (about theory and lab practicals) 50%
Mid-term exam 20%
Lab participation and Lab report 30%