

Experimental Food Biochemistry (0000168)

Due to Covid 19, the education and assessment 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)*

Credits 5.0 **Study time 150 h** **Contact hrs** 60.0h

Course offerings and teaching methods in academic year 2021-2022

A (semester 2)	English	Incheon	lecture	20.0h
			seminar: coached exercises	10.0h
			practicum	30.0h

Lecturers in academic year 2021-2022

Cirkovic Velickovic, Tanja	LA23	lecturer-in-charge
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Offered in the following programmes in 2021-2022

	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

Practicum, Lecture, Seminar: coached exercises

Learning materials and price

Protein purification, Principles and Practice. RK Scopes, Springer, 1995, ISBN 978-1-4757-2333-5

References**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 examination with multiple choice questions, Written examination with open questions

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

Written examination with multiple choice questions, Written examination with open questions

Examination methods in case of permanent assessment

Report, Participation, Written examination with open questions

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%