



УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ  
UNIVERSITY OF BANJA LUKA  
ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ  
FACULTY OF NATURAL SCIENCES AND MATHEMATICS



CHEMISTRY DEPARTMENT

PhD STUDIES

Course name	<b>Food Chemistry</b>			
Course code	Course status	Semester	Hours of instruction	ECTS
DHEM23HHR	elective	II or IV	5+0	10
Teacher(s)	<b>Prof. Mališa Antić, PhD</b>			

Prerequisite course(s)	Entry requirements
none	/

**Course goals**

The course should enable the student to acquire theoretical knowledge about chemical compounds that are most common in food, additives, and chemistry of food products (meat and meat products, milk and dairy products, bakery products, etc.), as well as analytical methods used for their qualitative and quantitative determination.

**Learning outcomes**

Upon successful completion of the course, students should be able to:

- Describe and explain the structure and chemical properties of proteins, lipids, and carbohydrates.
- Describe the chemical properties of antioxidants, dyes, fragrant components, and additives in a broader sense, and define the roles of these substances in food.
- Describe methods for isolation and analysis of water, proteins, lipids, and carbohydrates in food.
- Choose the appropriate analytical methods for monitoring the content of chemical compounds in food during processing.

**Course content**

Proteins, carbohydrates, and lipids in food: a brief overview of the most important chemical and physical properties of these compounds. Chemical and physical changes in these compounds during food processing, storage, and preparation; Water in food: water activity and methods for determining water activity. The role of water in foods and food. Additives: definitions and division of additives. Chemical properties of additives. Methods for proving and determining compounds used as additives. Chemistry of antioxidants, colors, and flavors; methods of their detection in food. Chemistry of food products (meat and meat products, milk and dairy products, bakery products, etc.). A brief overview of the chemical composition of foods and food products, as well as of the methods for their qualitative and quantitative determination.

**Teaching methods**

Lectures combined with interactive teaching, seminars, consultations and mentoring, e-learning

**Books and other learning materials**

1. M. Antic (2012): Food Chemistry –lectures, IFC-WBG.
2. С. Петровић, Д. Мијин, Н. Стојановић (2009.): Хемија природних органских једињења, ТМФ Београд.
3. John M. de Man (1999): Principles of Food Chemistry—3rd, Aspen Publishers, Inc.
4. John Whitaker, Food Analytical Chemistry, John, Wiley & Sons, 2001.
5. Instrumental methods in food analysis, J.R.J. Pare & J.M.R. Belanger (editors) Elsevier, Science 1997.

**Course activities and grading method**

Seminar, oral exam

<b>Seminar work</b>	<b>40</b>	<b>Final exam</b>	<b>60</b>

**Additional course notes**

Name of the teacher who prepared this form	Mališa Antić
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