

Course title: FOOD BIOCHEMISTRY

ECTS credit allocation (and other scores): 6

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Agricultural sciences

Language: English

Number of hours per semester: 70

Course coordinator/ Department and e-mail: prof. dr hab. Małgorzata Darewicz/Chair of Food Biochemistry,  
Darewicz@uwm.edu.pl

Type of classes: classes and lectures

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#### Substantive content

**CLASSES:** The enzymology exercises cover: enzymes mode of action, specificity, kinetics, the bioinformatics exercises concern the prediction of physicochemical properties of high- and low molecular weight molecules; analysis of proteins as the source of peptides with biological and functional properties and searching for compound data in databases using structure search options including molecule editors and chemical codes.

**LECTURES:** Lectures concern the characteristics of in silico, in vitro, in vivo methods applied in a contemporary life sciences. The content of the lectures include the following issues: enzymes and coenzymes, proteins purification and isolation, proteins, lipids, carbohydrates metabolism, modifications and applications, the databases of lowmolecular weight compounds and their enzymatic reactions, defining the similarities of biomolecules and practical application of bioinformatics in food science.

**Learning purpose:** To acquire the knowledge, skills concerning biomacromolecules, isolation and identification methods.

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On completion of the study programme the graduate will gain:

**Knowledge:** Student has knowledge of the structure and functions and metabolism of proteins, enzymes, lipids and carbohydrates.

**Skills:** Student plans, conducts and analyses the results of simple laboratory experiments.

**Social Competencies:** Student organises work and distributes responsibilities.

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**Basic literature:** Berg, Tymoczko, Stryer, Biochemistry, wyd. New York : W. H. Freeman and Company, 2012.

**Supplementary literature:** scientific articles proposed by teacher.

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The allocated number of ECTS points consists of: 150

Contact hours with an academic teacher: 79

Student's independent work: 71