Study programme: Food Processing

Type and level of study: Bachelor's degree (240 ECTS) – First cycle

Course title: Biochemistry 1.

Lecturer: Full Professor Pavle Mašković, PhD

Language of instruction: English

ECTS credits: 7

Prerequisite:

Semester: summer

Course objective

Introducing students to the biochemical function of the cell, tissue and organs in the goal to understandi the biochemical processes that take place in the living world. Gaining knowledge about the role and significance of high-energy compounds, enzyme and coenzyme activity, vitamins and hormones in kinetics of biochemical processes, water metabolism and elements in order to fully understand the processing of food.

Learning outcomes

The acquired knowledge will help to better understand the basic metabolic processes of microorganisms, plants and animals and chemism in the processes of production of quality and health-safe food.

Course contents

Theoretical instruction

Biochemical function of the cell and cell organelles. Bioenergy and kinetics of biochemical processes.

High-energy compounds. Metabolism of water. Metabolism of the elements. Role, function and significance biocatalysts (enzymes, vitamins, hormones) and coenzyme. Catabolism of compounds with nitrogen.

Practical instruction

Testing of enzyme properties and the influence of certain parameters on the activity of some enzyme. Determination of kinetic parameters of enzymatic reactions. Determination of individual activities enzyme. Qualitative and quantitative proof of vitamins. Proofing of hormones, chlorophyll and hemoglobin. Quantitative determination of water and ash in plant and animal products. Analysis of individual food quality parametres.

Recommended reading

Harper's Illustrated Biochemistry by Robert K. Murray, Darryl K. Granner, Peter A. Mayes. (2013): Fundamentals of Biochemistry: Life at the Molecular Level by Donald Voet, Judith G. Voet, Charlotte W. Pratt (2005): Vitamins, Herbs, Minerals, & Supplements by H. Winter Griffith.(2000): Food Biochemistry and Food Processing Book by Gopinadhan Paliyath and Soottawat Benjakul (2012).

Hours of active teaching				**Other classes**
Lectures:	Practicals: 3x15=45	Other forms of teaching Tutorials 3x15=45	Individual work:	

Teaching methods

Theory teaching: lectures ex catedra

Practical classes: experimental exercises

Assessment (maximum points 100)

Examination requirements	**Points**	**Final examination**	**Points**
Class participation	5	oral examination	55
Practical sessions/tests	10	written examination	
Term paper assignments/homework	30	.....	
Project			
Other			

Grading system

Grade	**ECTS**	**Description**
10	**91-100**	Excellent
9	**81-90**	Exceptionally good
8	**71-80**	Very good
7	**61-70**	Good
6	**51-60**	Passing
5	**≤50**	Failing