

**SYLLABUS**

REGARDING THE QUALIFICATION CYCLE 2019/2020-2020/2021

Academic Year 2020/2021

**1. BASIC COURSE/MODULE INFORMATION**

Course Title	<b>Food processing</b>
Course Code *	
Name of the unit offering the field of study	College of Natural Sciences
Name of the unit running the course	College of Natural Sciences Institute of Food Technology and Nutrition Department of Dairy Technology
Field of study	Food Technology and Human Nutrition
Qualification level	2st
Profile	General academic
Study mode	part-time studies
Academic year	Year II semester 3
Type of course	Elective
Language of instruction	English
Course Coordinator	dr inż. Magdalena Buniowska
Name and surname of the instructor or instructors	dr inż. Magdalena Buniowska

\* as agreed at the Department

**1.1. Learning format – number of hours and ECTS credits**

Semester (no.)	Lectures	Class.	Sem.	Lab.	Sem.	TT	Pract.	others	ECTS credits
3	9								1

**1.2. Course delivery methods**

- conducted in a traditional way  
 classes carried out with the use of distance learning methods and techniques

**1.3 Course/Module assessment** (egzam, credit with a grade, credit without a grade)  
credit without a grade**2. PREREQUISITES**

Chemistry, engineering , Mathematics, basic knowledge of food composition, basic knowledge of food processing technologies
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### 3. OBJECTIVES, LEARNING OUTCOMES, COURSE CONTENT, AND INSTRUCTIONAL METHODS

#### 3.1 Course/Module objectives

O <sub>1</sub>	The goal of the course is to provide students with a definition and to clarify the causes spoilage of food and food raw materials
O <sub>2</sub>	The student will become familiar with conventional and non-conventional methods used for food preservation.
O <sub>3</sub>	Students will receive knowledge of abiotic and anabasis methods of food preservation, with emphasis on modern methods and procedures.

#### 3.2 Course/Module Learning Outcomes

LO (Learning Outcome)	The description of the learning outcome defined for the course/module	Relation to the degree programme outcomes <sup>1</sup>
LO_01	Knowledge about the types of undesirable changes in the food, basic principles and methods of preserving existing of food	K_w03
LO_02	The ability to design technological process of extending the food preservation and appropriate manner to verify the result	K_Uo6
LO_03	Basic Knowledge of food composition, microbial spoilage of foods and other foods changes, students will understand that the principles can be used in food given to extend the keeping quality	K_w03, K_w06

#### 3.3 Course content

##### A. Lectures

Course contents
The principle and purpose of the preservation of food. Introduction to food storage
Mechanical changes in food
Biochemical changes in food
Developmental stages of storage and food processing
Characteristics of methods that are used for food preservation
The development and importance of preservation of food

#### 3.4 Methods of Instruction

- Lecture: a lecture supported by a multimedia presentation

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<sup>1</sup> In the case of the type of education leading to teaching qualifications, also take into account the learning outcomes from the standards of education preparing for the teaching profession.

#### 4. ASSESSMENT TECHNIQUES AND CRITERIA

##### 4.1 Methods of evaluating learning outcomes

Symbol of learning outcome	Methods of assessment of learning outcomes (e.g. test, oral exam, written exam, project, report, observation during classes)	Learning format (lectures, classes,...)
LO_01	test	lectures
LO_02	reports	lectures
LO_03	test	lectures

##### 4.2 Course assessment (criteria)

Attendance in all laboratory classes. Reporting and presenting results of practical and laboratory exercises. Pass the laboratory material tests and final exam (OPEN TEST)  
Grade 5, > 94% ; Grade 4.5, 90-94% ; Grade 4, 80-89% ; Grade 3.5, 70-79% ; Grade 3, 60-69% correct answers

#### 5. TOTAL STUDENT WORKLOAD NEEDED TO ACHIEVE THE INTENDED LEARNING OUTCOMES – NUMBER OF HOURS AND ECTS CREDITS

ACTIVITY	AVERAGE NUMBER OF HOURS TO COMPLETE THE ACTIVITY
Scheduled course contact hours	9
Other contact hours involving the teacher (consultation hours, examinations)	2
Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.)	14
Total number of hours	25
Total number of ECTS credits	1

\* One ECTS point corresponds to 25-30 hours of total student workload

#### 6. INTERNSHIPS RELATED TO THE COURSE/MODULE

Number of hours	-
Internship regulations and procedures	-

#### 7. INSTRUCTIONAL MATERIALS

Compulsory literature:

1. Khetarpaul Neelam, Food Processing and Preservation. Astral International Pvt.Ltd 2012

2. Fellow, P. *FOOD Processing Technology, Principles and Practice*. CRC Press, New York. 2000
3. Rastogi N.K., Raghavarao K.S.M.S., Balasubramaniam V.M., Niranjan K., Knorr D. Opportunities and Challenges in High Pressure Processing of Foods. *Critical Reviews in Food Science and Nutrition*, 2010, 47 (1): 69-112.

Complementary literature:

1. Trych U., Buniowska M., Skapska S., Starzonek S., Marszałek K. The bioaccessibility of antioxidants in black currant puree after high hydrostatic pressure treatment. *Molecules*, 2020, 25(15), 354.
2. Buniowska M., Carbonell-Capella J.M., Znamirowska A., Frígola A., Esteve M.J. Steviol glycosides and bioactive compounds of a beverage with exotic fruits and *Stevia rebaudiana* Bert. as affected by thermal treatment. *International Journal of Food Properties*, 2020, 23(1), pp. 255-268.
3. Buniowska M., Arrigoni E., Znamirowska A., Frígola A., Esteve M.J. Liberation and micellarization of carotenoids from different smoothies after thermal and ultrasound treatments, *Foods*, 2019, 8(10), 492.

Approved by the Head of the Department or an authorised person