

Course code: .....

Plan position: .....

### A. INFORMATION ABOUT THE COURSE

#### B. Basic information

Name of course	FOOD DESIGN AND HUMAN NUTRITION
Field of studies	Food technology and human nutrition
Level of studies	First cycle
Profile of studies	Academic
Form of studies	Full time
Specialty	
Unit responsible for the field of studies	
Name and academic degree of teacher(s)	Dr hab. Eng. Dorota Wichrowska, Dr Eng. Ewa Żary- Sikorska, Dr Eng. Katarzyna Gościnną, Dr hab. Eng. Jarosław Pobereźny
Introductory courses	Chemistry, biochemistry, physics
Introductory requirements	Knowledge of the biochemistry of basic nutrients

#### C. Semester/week schedule of classes

Semester	Lectures (W)	Auditorium classes (Ć)	Laboratory classes (L)	Project classes (P)	Seminar (S)	Field classes (T)	Number of ECTS points
			30				6

### 2. LEARNING OUTCOME

No.	Learning outcomes description	The reference to the learning outcomes of specific field of study	The reference to the learning outcomes for the area
<b>KNOWLEDGE</b>			
W1	After completing the course, the student is able to define the processes used in food production, knows their importance, can determine their influence on the development of organoleptic and nutritional properties of the final product.	K_W13 K_W17	P6S_WG
W2	The students knows the basics of proper human nutrition including nutrients essential for the proper functioning of the body. The students knows the nutrition standards.	K_W11 K_W12	P6S_WG
<b>SKILLS</b>			
U1	The student is able to independently carry out physicochemical analysis of certain compounds contained in food. The student knows how to assess the sensory quality of food products.	.....	.....

U2	At the end of the course the student is able to determine the nutritional status and characterize the diet of an example person. The student acquires the ability to evaluate and correct a menu to eliminate bad eating habits and dietary mistakes (basics of nutritional counselling).	K_U16	P6S_UW
<b>SOCIAL COMPETENCES</b>			
K1	The student is creative, perceives and presents gastronomy as creativity.	.....	.....
K2	After completing the course, the student understands the relationship between dietary quality and health and quality of life. Understands the need for continuous training and improvement of professional and personal competences.	K_K03 K_K08	P6S_KO P6S_KK

### 3. TEACHING METHODS

#### A. Traditional methods used \*\*\*

multimedia lecture, laboratory exercises, demonstration, didactic discussion

#### B. Distance learning methods used \*\*\*

**Synchronous method** (classes conducted in a way that ensures direct interaction between the student and the teacher in real time, enabling immediate flow of information, the method can be used only if it is provided for in the study plan for a given cycle of education):  
e.g. remote lecture in the form of videoconference, remote discussion, etc.

**Asynchronous method** used as an auxiliary (a method that does not ensure direct interaction between the student and the teacher in real time, used only as an auxiliary / complementary method):  
e.g. online educational videos, online multimedia presentations, etc.

### 4. METHODS OF EXAMINATION

exercises: reports, project, presentation, colloquium

### 5. SCOPE

Laboratories	Physicochemical analyses used in assessing the quality of raw materials and food products. Determination of the content of health-promoting compounds (polyphenols, anthocyanin and betalain pigments, organic acids) and antioxidant capacity of foods. The importance of sensory evaluation in the design of new food products. Gastronomic technologies used in food preparation. The use of fermentation processes in the design of food products (winemaking, brewing, designing lactic fermentation products). Minerals in the diet: calculation of the mineral content of the diet, percentage coverage of mineral intakes. Dietary vitamins: calculation of the content of vitamins in the diet, the percentage coverage of the standard of consumption of vitamins, determination of the contribution of a product to the diet as source of vitamins. The nutritional value of proteins: calculation of the content of amino acids exogenous in the diet, the proportion of animal protein in the total protein intake and the contribution of protein to energy intake (%). Nutritional value of carbohydrates: calculating the dietary intake of dietary fibre and sucrose, determination of the contribution of carbohydrates to
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	energy intake. Nutritional value fats: calculation of the amount of cholesterol and fatty acids in the diet, evaluation of the nutritional value of the dietary fats consumed (ratio of saturated to ratio of saturated to polyunsaturated fatty acids) estimating the proportion of fats in energy intake. Evaluation of nutrition status - methods of nutrition status evaluation, an instructional film on conducting anthropometric measurements, calculation of BMI, Rohrer index, calculation of body weight according to Putton. Performing a BIA analysis of body composition.
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## 6. METHODS OF VERIFICATION OF LEARNING OUTCOMES

LEARNING OUTCOME	Form of assessment					
	Oral examination	Written exam	Colloquium	Project	Presentation	Report
W1				x	x	x
W2			x			x
U1				x	x	x
U2			x			x
K1				x		x
K2			x			x

## 7. LITERATURE

Basic literature	<ol style="list-style-type: none"> <li>1. Journal of Food Processing and Preservation.</li> <li>2. Human Nutrition - 2020 Edition - Open Textbook Library <a href="https://open.umn.edu/opentextbooks/textbooks/622">https://open.umn.edu/opentextbooks/textbooks/622</a></li> <li>3. Introduction to Human Nutrition. <a href="https://ssu.ac.ir/cms/fileadmin/user_upload/Mtahghighat">ssu.ac.ir/cms/fileadmin/user_upload/Mtahghighat</a></li> </ol>
Supplementary literature	<ol style="list-style-type: none"> <li>1. Barasi's Human Nutrition: A Health Perspective, Third Edition, Michael EJ Lean, Emilie Combet, <a href="https://www.routledge.com/Barasis-Human-Nutrition-A-Health-Perspective-Third-Edition">https://www.routledge.com/Barasis-Human-Nutrition-A-Health-Perspective-Third-Edition</a>Biotechnological innovations in food processing</li> <li>2. Journal of Agricultural and Food Chemistry.</li> <li>3. Food Chemistry.</li> <li>4. Food Science and Technology.</li> </ol>

## 8. TOTAL STUDENT WORKLOAD REQUIRED TO ACHIEVE EXPECTED LEARNING OUTCOMES EXPRESSED IN TIME AND ECTS CREDITS

Student's activity		Student workload– number of hours
Classes conducted under a direct supervision of an academic teacher or other persons responsible for classes	Participation in classes indicated in point 1B	30
	Supervision hours	10
Student's own work	Preparation for classes	35
	Reading assignments	35
	Other (preparation for exams, tests, carrying out a project etc)	40
Total student workload		150
Number of ECTS points		6