

A COURSE SYLLABUS – DOCTORAL SCHOOL
REGARDING THE QUALIFICATION CYCLE FROM 2022 TO 2026 .

GENERAL INFORMATION ABOUT COURSE				
Course title	Active substances in food and their role in human nutrition			
Name of the unit running the course	Doctoral School, University of Rzeszow			
Type of course (<i>obligatory, optional</i>)	Facultative, specialized			
Year and semester of studies	II/4			
Discipline	Technology of food and nutrition			
Language of Course	polish			
Name of Course coordinator	Dr hab. Ireneusz Kapusta, prof. UR			
Name of Course lecturer	Dr hab. Ireneusz Kapusta, prof. UR			
Prerequisites	In-depth knowledge of human nutrition and biologically active substances found in food.			
BRIEF DESCRIPTION OF COURSE (100-200 words)				
<p>The aim of the course is to provide expanded knowledge of the occurrence and role of biologically active compounds in food. During the course, students develop the ability to recognize nutritional and non-nutritive ingredients in food; recognition and characterization of bioactive ingredients. The specific aim of the subject is to provide knowledge about the impact of bioactive food ingredients on human health and issues related to the role of bioactive substances in the chemoprevention of lifestyle diseases. Additionally, selected issues regarding health-promoting food in the light of legal standards will also be discussed.</p>				
COURSE LEARNING OUTCOMES AND METHODS OF EVALUATING LEARNING OUTCOMES				
Learning outcome	The description of the learning outcome defined for the course	Relation to the degree programme outcomes (symbol)	Learning Format (Lectures, classes,...)	Method of assessment of learning outcomes (e.g. test, oral exam, written exam, project,...)
Knowledge (no.)	(Knows and understands)			
1.	Basic concepts in the field of health-promoting food	P8S_WG1	Conservatory	Written exam
2.	The impact of bioactive food ingredients on health human health, including chemoprevention of lifestyle diseases	P8S_WG2	Conservatory	Written exam
3.	Bioactive compounds in food and the concept of food health-promoting in the light of legal standards	P8S_WG3	Conservatory	Written exam
4.	Appropriate food law regulations in area of health-promoting food	P8S_WK1	Conservatory	Written exam
Skills (no.)	(Able to)			
1.	skillfully apply the acquired concepts in the field of health-promoting food and can indicate the role of bioactive compounds in food	P8S_UW1	Conservatory	Discussion and observation

2.	obtain information and prepare a presentation in the area characteristics and impact of bioactive food compounds on health human	P8S_UW2	Conservatory	Discussion and observation		
3.	Analyzing research results received during classes, can describe and evaluate them based on based on knowledge derived from the latest scientific literature	P8S_UW3	Conservatory	Discussion and observation		
4.	Use English terminology in the field discussed issues regarding biologically active substances	P8S_UK6	Conservatory	Discussion and observation		
Social competence (no.)	(Ready to)					
1.	Promoting health-promoting food to improve the health of society	P8S_KK3	Conservatory	Discussion and observation		
LEARNING FORMAT – NUMBER OF HOURS						
Semester (no.)	Lectures	Seminars	Lab classes	Internships	others	ECTS
IV					15	2
METHODS OF INSTRUCTION						
Multimedia presentations, analysis of scientific articles and discussion of selected topics						
COURSE CONTENT						
<p>1. Characteristics of selected bioactive ingredients found in food</p> <p>2. The impact of bioactive food ingredients on human health (reactive oxygen and nitrogen species as a factor initiating pathogenic processes; endogenous systems of protection against oxidative stress; exogenous systems of protection against lifestyle diseases, nutrigenomics - the influence of food ingredients on the regulation of gene expression)</p> <p>3. Bioactive compounds in the chemoprevention of lifestyle diseases.</p> <p>4. Bioavailability of biologically active food ingredients (basics of bioavailability; digestive tract and bioactive ingredients of food of plant origin)</p> <p>5. Health-promoting food in the light of legal standards - health-promoting food as a subject of food law regulations, quality of health-promoting food (as foodstuffs for general consumption and as a special group of foodstuffs); legal conditions for consumer information about health-promoting food; nutritional and health claims as an integral element of the promotion of health-promoting food; legal responsibility in the production and marketing of health-promoting food.</p>						
COURSE ASSESSMENT CRITERIA						
The subject ends with a written exam Subject assessment criteria 60% dst grade; 65-70% dst plus; 75-80% good; 85-90% plus good; 90-100% very good						
TOTAL PhD STUDENT WORKLOAD REQUIRED TO ACHIEVE THE INTENDED LEARNING OUTCOMES – NUMBER OF HOURS AND ECTS CREDITS						
Activity			Number of hours			
Scheduled course contact hours			15			

Other contact hours involving the teacher (consultation hours, examinations)	15
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	170
Total number of hours	200
Total number of ECTS credits	2
INSTRUCTIONAL MATERIALS	
Compulsory literature:	<ol style="list-style-type: none"> 1. Czapski J, Górecka D. (2014). Żywność prozdrowotna. Składniki i technologia. Wyd. Uniwersytetu Przyrodniczego w Poznaniu 2. Grajek W. (2007) Przeciwtleniacze w żywności. Aspekty zdrowotne, technologiczne, molekularne i analityczne. Wyd. Naukowo-Techniczne
Complementary literature:	<ol style="list-style-type: none"> 1. Żuklewicz-Sobczak W. (2021) Składniki żywności w ujęciu prozdrowotnym. Wyd. Państwowa Szkoła Wyższa im. Papieża Jana Pawła II w Białej Podlaskiej 2. Pitchford P. (2008) Odżywianie dla zdrowia. Wyd. Galaktyka 3. Ligor M. (2012) Badanie substancji biologicznie aktywnych w surowcach roślinnych i produktach naturalnych z zastosowaniem łączonych technik chromatograficznych. Wyd. Naukowe Uniwersytetu Mikołaja Kopernika