

<b>Course title</b> Chemia żywności / Food chemistry		<b>ECTS code</b> 13.3.0513	
<b>Name of unit administrating study</b> Faculty of Chemistry			
<b>Studies</b>			
<b>Field of study</b>	<b>Type</b>	<b>Form</b>	
Chemistry	Bachelor	Full-time studies	
<b>Teaching staff</b> Dr hab. Jolanta Kumirska, prof. nadzw.			
<b>Forms of classes, the realization and number of hours</b>		<b>ECTS credits 6</b>	
<b>A. Forms of classes, in accordance with the UG Rector's regulations</b> lectures, laboratory classes		Estimating working time: <b>Hours with the participation of the academic teacher</b> participation in lectures 30 h participation in laboratory classes 45 h	
<b>B. The realization of activities</b> multimedia presentation, experimental work, in-class learning		consultations 8 h exam 2 h <b>Hours without the participation of the academic teacher</b>	
<b>C. Number of hours</b> 75 h (lectures 30 h, laboratory classes 45 h)		preparation for the exam 25 h preparation for the tests 20 h processing of the experimental results 20 h	
		<b>Total</b> 150 h	
<b>The academic cycle</b> 2020/2021 summer semester			
<b>Type of course</b> obligatory		<b>Language of instruction</b> Polish	
<b>Teaching methods</b>  <ul style="list-style-type: none"> <li>Lecture with multimedia presentation</li> <li>Performing experiments using analytical and instrumental methods / analysis of experimental results combined with discussion. Each experiment will be described in details in the laboratory instruction.</li> </ul>		<b>Form and method of assessment and basic criteria for evaluation or examination requirements</b>	
		<b>A. Final evaluation, in accordance with the UG study regulations</b> <ul style="list-style-type: none"> <li>lectures - exam</li> <li>laboratory classes - course credit with a grade</li> </ul>	
		<b>B. Assessment methods</b> <ul style="list-style-type: none"> <li>lecture – written exam with open and closed questions</li> <li>laboratory classes - determination of the final grade based on partial grades received during the semester</li> </ul>	
		<b>C. The basic criteria for evaluation or exam requirements</b>  <b>Lecture</b> <ul style="list-style-type: none"> <li>positive rating is min. 51% of possible points from the written exam covering the scope of material carried out during lectures and laboratory exercises,</li> <li>a negative assessment can be improved on the basis of a written test of material carried out during lectures and laboratory exercises (at least 51% of possible points)</li> </ul> <b>Laboratory exercises</b> <ul style="list-style-type: none"> <li>The assessment will be a weighted average of the final colloquium grades from all laboratory exercises (40%), partial tests (40%) and reports (20%).</li> <li>negative assessment can be improved on the basis of an additional colloquium of material covering the whole range of exercises (at least 51% of possible points).</li> </ul>	

### A. Formal requirements

lack

### B. Prerequisites

Knowledge of basic issues in general chemistry, organic chemistry, inorganic chemistry and main concepts in the basics of human nutrition

### Aims of education

To introduce students with information on the chemical composition of food and the construction of major food raw materials, with particular reference taking into account the chemical structure, physico-chemical properties and the broadly understood functions of nutrients and additives to food and other compounds that shape the health quality of nutritional products.

### Course contents

#### A. Problems of the lecture

Chemical composition of food. Physical, chemical and biological properties of food ingredients, food additives and food contamination. Transformation of these compounds during storage and processing of raw materials and food products. The role of individual components in creating sensory attributes of food products. The influence of selected parameters of food processing on the functional properties of food ingredients. Understanding some of the mechanisms and effects of chemical and biochemical reactions taking place in food on the sensory properties and health quality of food products.

#### B. Problems of laboratory exercises

A cycle of laboratory exercises aimed at consolidating knowledge and skills in the knowledge of the chemical composition of food and physical and chemical changes occurring in raw materials and dietary products during their storage and processing.

### Bibliography of literature

#### A. Literature required to pass the course

Praca zbiorowa pod redakcją Sikorski Zdzisław E. Chemia Żywności, Wyd. 6, WNT, Warszawa, 2012.

Praca zbiorowa pod redakcją Górska Agata, Łobacz Marta, Ćwiczenia laboratoryjne z chemii żywności Wydawnictwo SGGW, 2009.

Rutkowska Jarosława, Przewodnik do ćwiczeń z chemii żywności. Wydawnictwo SGGW, Warszawa 2008.

#### B. Extracurricular readings

Praca zbiorowa pod redakcją Sikorski Zdzisław E. Chemia Żywności, Wyd. 6, WNT, Warszawa, 2012.

Śmiechowska Maria, Przybyłowski Piotr, Chemia żywności z elementami biochemii. Wydaw. Akademii Morskiej w Gdyni, Gdynia 2004.

Grajek Włodzimierz; Baer-Dubowska Wanda Przeciwutleniacze w żywności: aspekty zdrowotne, technologiczne, molekularne i analityczne. Wydawnictwa Naukowo-Techniczne, Warszawa 2007.

Małecka Maria (red.), Wybrane metody analizy żywności, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań, 2003

### Knowledge

1. Student knows the most important food ingredients that shape the quality of nutritional products.
2. Student describes the physical, chemical and biological properties of food ingredients, food additives and food contamination.
3. Student explains some of the changes occurring during storage and processing of raw materials and food products.
4. Student describes the role of individual components in creating sensory attributes of food products.
5. Student illustrates the influence of selected parameters of food processing on the functional properties of food ingredients.

### Skills

1. Student demonstrates the ability to detect and determine basic food ingredients, selected food contaminants and some food misfits.
2. Student is able to explain some of the changes occurring during the storage and processing of raw materials and food products.
3. Student observes established procedures when analyzing the composition of raw materials for food production and the quality of ready-made food products.
4. Student discusses issues related to food chemistry.

### Social competence

Student has the need for further education,

Student shows responsibility for the effects of the team's work,

Student is responsible for the safety of his own and other work. Student is careful in dealing with chemicals,. Student is careful in dealing with scientific apparatus.