

<b>Course title</b> Chemia żywności / Food chemistry		<b>ECTS code</b> 13.3.0743	
<b>Name of unit administrating study</b> Faculty of Chemistry			
<b>Studies</b>			
<b>Field of study</b>	<b>Type</b>	<b>Form</b>	
Chemical Business	Bachelor / Engineer	Full-time studies	
<b>Teaching staff</b> dr hab. Jolanta Kumirska, prof. UG			
<b>Forms of classes, the realization and number of hours</b>		<b>ECTS credits</b> 4	
<b>A. Forms of classes, in accordance with the UG Rector's regulations</b> lecture, laboratory classes		classes - 60 h tutorial classes – 5 h student's own work – 35 h	
<b>B. The realization of activities</b> multimedia presentation, experimental work, in-class learning		Total: 100 h - 4 ECTS	
<b>C. Number of hours</b> 60 h (lectures 15 h, laboratory classes 45 h)			
<b>The academic cycle</b> Third year, winter 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>	
<b>A. Formal requirements</b> lack			
<b>B. Prerequisites</b> 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 structure of the main food raw materials, with particular emphasis on the chemical structure, physico-chemical properties and broadly understood functions of nutrients, food additives 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 ingredients in creating sensory attributes of food products.

#### B. Problems of laboratory exercises

A series of laboratory exercises aimed at consolidating knowledge and skills in the knowledge of the chemical composition of food and transformation physicochemicals 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 Górską 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 Przeciwtleniacze 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 products nutrition; describes their physical, chemical and biological properties.
2. Student explains the selected basic transformations taking place during storage and processing of raw materials and food products.
3. Student describes the structure and operating principle of selected, basic control and measurement apparatus used in food chemistry

### Skills

1. Student uses the established procedures when analyzing the composition of raw materials for food production and the quality of finished food products, analyzes the obtained results and draws conclusions based on them.
2. He discusses issues related to food chemistry using properly chemical nomenclature and engineering terminology.

### Social competence

1. Student shows responsibility for the effects of team work.
2. Student is responsible for the safety of his own and other work, he is careful in dealing with chemicals, he is careful in dealing with scientific equipment.