



## Subject card

Subject name and code	Understanding Food and Nutrition, PG_00062140						
Field of study	Technical Physics						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
Education level	second-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			e-learning		
Year of study	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Colloid and Lipid Science -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Adam Macierzanka					
	Teachers	dr hab. inż. Adam Macierzanka					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 30.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM		
	Number of study hours	30	2.0	18.0	50		
Subject objectives	<p>The aim of this subject is to thoroughly discuss the influence of social, sociological, and marketing factors on the choices we make regarding the food we purchase and consume.</p> <p>The objective of this subject will also be to present how food producers modify their products to meet social demands and to outline the impact of such practices on both positive and negative health consequences for consumers.</p>						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K7_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications	The student has acquired knowledge regarding the general, economic, and social significance of the food industry in the context of conscious nutrition by consumer groups.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	[K7_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment	The student understands the actual consequences of promoting/advertising specific food products on consumer preferences and their potential to shape them.			[SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice		
	[K7_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems	The student can explain the social consequences of possessing specific knowledge about nutrition on the choice of purchased food, as well as dietary habits and their potential outcomes.			[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		

## Subject contents

The scope of the subject has been prepared to impartially discuss both the positive and negative aspects of the growing social awareness regarding the role of food and nutrition in the choices of consumed food, as well as how the food industry attempts to meet or exploit societal expectations.

1.

The lectures will begin with a brief discussion of the role of the main nutritional components in food, highlighting myths and facts:

- Proteins (including aspects such as the role of specific proteins in food allergies, conscious protein intake for enhanced muscle tissue growth in athletes, etc.).
- Fats (including the role of lipids as carriers of flavor substances in food and debunking myths concerning the pivotal role of diet in combating high levels of "bad" cholesterol in the blood, etc.).
- Sugars (including the impact of sugars on the overall caloric content of food products, discussing "bad" and "good" types of sugar substances in nutrition, etc.).
- Vitamins, water, minerals, etc.

2.

With the knowledge discussed in point 1, students will be familiarized with how the composition and structure of food products can influence overall societal preferences regarding the choices of purchased (and consumed) food. Topics will include:

- The role of "desirable" food taste in consumer dietary preferences.
- Awareness of the caloric load of specific foods in dietary preferences.
- The impact of food structure on how certain food components are digested (and/or at what rate).
- Hunger - how it arises and how (for how long) it can be satisfied.
- The role of pro- and prebiotics in nutrition, as well as the crucial role of gut bacterial flora in health aspects, etc.

	<p>3.</p> <p>The final part of the lecture series will be dedicated to explaining how food producers utilize current consumer social awareness and scientific knowledge in the production and promotion of new food products, both positively and negatively:</p> <p>a.) Positive aspects:</p> <ul style="list-style-type: none"> <li>• Personalized food (what it is and for which consumer groups it is intended, etc.).</li> <li>• Modification of food products to "control" the satisfaction of hunger between meals (obesity prevention, etc.), providing medicines/bioactive substances, etc.</li> <li>• Personalizing food for specific age groups, those with medical conditions, ideological beliefs, etc., in society.</li> </ul> <p>b.) Negative aspects:</p> <ul style="list-style-type: none"> <li>• Utilizing advertising tools to deliberately promote low-value, harmful, and cheaply produced food.</li> <li>• The deliberate exploitation of heightened (and selective) societal awareness regarding the role of individual nutritional components (e.g., certain vitamins, unsaturated fatty acids, collagen, and many others) to promote food in which the presence of such components is often insignificant from the perspective of the overall nutrition process - that is, physiological digestion and nutrient absorption.</li> <li>• The deliberate overinterpretation and emphasis on the absence of "harmful/undesirable" food components in products where such components do not naturally occur - e.g., "cholesterol-free" margarine, "gluten-free" cornflakes, etc.</li> </ul>						
Prerequisites and co-requisites	Understanding basic concepts in the field of social interactions, as well as in the fields of biology, chemistry, and physics. Basic knowledge of terms in English.						
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="450 1111 796 1144">Subject passing criteria</th> <th data-bbox="796 1111 1141 1144">Passing threshold</th> <th data-bbox="1141 1111 1487 1144">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="450 1144 796 1176">written examination</td> <td data-bbox="796 1144 1141 1176">50.0%</td> <td data-bbox="1141 1144 1487 1176">100.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	written examination	50.0%	100.0%
Subject passing criteria	Passing threshold	Percentage of the final grade					
written examination	50.0%	100.0%					

Recommended reading	Basic literature	<p>1. Sikorski Z., Staroszczyk H. (Eds.), Chemia żywności, PWN 2017.</p> <p>2. Drozdowski B., Lipidy, w: Chemiczne i funkcjonalne właściwości składników żywności, WNT, Warszawa, 1994.</p> <p>3. Przondo J., Związki powierzchniowo czynne i ich zastosowanie, Wyd. PR, 2007.</p> <p>4. Verhoeckx K. et al. (Eds.), The Impact of Food Bio-Actives on Gut Health; Chapter 3, pp. 23-31; Springer Cham Heidelberg,</p> <p>1. S.E. Friberg, Food emulsions, Marcel Dekker 1997.</p> <p>2. G.L.Hasenhuettl, R.W. Hartel (Eds.), Food Emulsifiers and Their Applications, Chapman&amp;hall, New York, 1997.</p> <p>3. A. G. Marangoni, S.S. Narine (Eds.), Physical Properties of Lipids, Marcel Dekker, Inc., New York, 2002.</p> <p>4. Casimir C. Akoh, (Ed.), Food Lipids: Chemistry, Nutrition, and Biotechnology, Fourth Edition, CRC Press, 2017.</p> <p>New York 2015.</p>
	Supplementary literature	<p>1. S.E. Friberg, Food emulsions, Marcel Dekker 1997.</p> <p>2. G.L.Hasenhuettl, R.W. Hartel (Eds.), Food Emulsifiers and Their Applications, Chapman&amp;hall, New York, 1997.</p> <p>3. A. G. Marangoni, S.S. Narine (Eds.), Physical Properties of Lipids, Marcel Dekker, Inc., New York, 2002.</p> <p>4. Casimir C. Akoh, (Ed.), Food Lipids: Chemistry, Nutrition, and Biotechnology, Fourth Edition, CRC Press, 2017.</p>
	eResources addresses	<p>Adresy na platformie eNauczenie:</p> <p>Zrozumieć Żywność i Odżywianie 2023/24 - Moodle ID: 35064</p> <p><a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35064">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=35064</a></p>
Example issues/ example questions/ tasks being completed	Questions directly related to the topics described in the 'Course Content' section.	
Work placement	Not applicable	