



## Subject card

Subject name and code	Product Technology, PG_00044615						
Field of study	Engineering Management						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2023/2024		
Education level	first-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Management Engineering and Quality -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor	mgr Anna Wendt					
	Teachers	mgr Anna Wendt					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	16.0	0.0	0.0	0.0	16
	E-learning hours included: 0.0						
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	16	5.0		54.0	75	
Subject objectives	The aim of the course is to familiarize students with the preparation and conduct of the production or processing process food and non-food products.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U10] uses tools to measure and improve technical solutions concerning: devices, objects, systems, processes, products and services	Students gain knowledge about quality management tools and methods. They study elements of Lean Management and obligatory and non-obligatory standards.			[SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task		
	[K6_W13] has a basic knowledge of the design, modelling and optimisation of technical processes and systems	Students design a production diagram and a technological diagram.			[SW2] Assessment of knowledge contained in presentation		

Subject contents	<p>1. Presentation of the finished product (product): product definition, industry name - according to PN, PNEN, NZ standards, EU directives, industry literature, etc., historical outline.</p> <p>2. Raw materials for obtaining: characteristics of raw materials; division of raw materials into basic, additional, natural, processed, primary, secondary, auxiliary materials, provide the content of basic ingredients contained in the finished product (in % or in grams per 100 g of the finished product).</p> <p>3. Unit packaging: information in what packaging the product is available for retail sale; what material is the packaging made of; how the packaging is closed; what is the declared weight or volume of the product in the unit package; provide and explain the signs on the packaging.</p> <p>4. Conditions, storage time and shelf life: Conditions, storage time - standards, EU directives, regulations of relevant ministers, industry literature; Expiration date standard, packaging of a product on the market.</p> <p>5. Operations / Unit processes (what they involve, how they run).</p> <p>6. Block diagram - VSM.</p> <p>7. Technological diagram.</p> <p>8. Machinery and equipment.</p> <p>9. Lean tools (e.g. 5S, Kanban, Supermarkets).</p> <p>10. By-products (characterization, management of by-products).</p> <p>11. Waste (characterization, waste management).</p> <p>12. Quality Systems.</p> <p>13. Ecological aspects of the process.</p> <p>14. Economic aspects of the process.</p> <p>15. A video presenting a given technological process.</p>																				
Prerequisites and co-requisites	Subject: Applied chemistry and ecology.																				
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="453 1494 794 1525">Subject passing criteria</th> <th data-bbox="799 1494 1141 1525">Passing threshold</th> <th data-bbox="1145 1494 1482 1525">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="453 1532 794 1563">Activity</td> <td data-bbox="799 1532 1141 1563">50.0%</td> <td data-bbox="1145 1532 1482 1563">8.0%</td> </tr> <tr> <td data-bbox="453 1570 794 1601">Presence</td> <td data-bbox="799 1570 1141 1601">75.0%</td> <td data-bbox="1145 1570 1482 1601">20.0%</td> </tr> <tr> <td data-bbox="453 1608 794 1639">Questions for presentations</td> <td data-bbox="799 1608 1141 1639">60.0%</td> <td data-bbox="1145 1608 1482 1639">10.0%</td> </tr> <tr> <td data-bbox="453 1646 794 1677">Exercises</td> <td data-bbox="799 1646 1141 1677">60.0%</td> <td data-bbox="1145 1646 1482 1677">12.0%</td> </tr> <tr> <td data-bbox="453 1684 794 1715">Presentation</td> <td data-bbox="799 1684 1141 1715">60.0%</td> <td data-bbox="1145 1684 1482 1715">50.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	Activity	50.0%	8.0%	Presence	75.0%	20.0%	Questions for presentations	60.0%	10.0%	Exercises	60.0%	12.0%	Presentation	60.0%	50.0%
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Recommended reading	Basic literature	Szpakowska M., Marjańska E., Brodnicka E., Szpakowski W., Badania Jakości Wybranych Produktów, Wydawnictwo Politechniki Gdańskiej, Gdańsk 2020																			

	Supplementary literature	<p>1.Wandelt P., Technologia celulozy i papieru Technologia mas włóknistych, Tom I, Wydawnictwo Szkolne i Pedagogiczne, Warszawa 1996;</p> <p>2.Przybysz K., Technologia celulozy i papieru Technologia papieru, Tom II, Wydawnictwo Szkolne i Pedagogiczne, Warszawa 1997;</p> <p>3.Drzewińska E., Rogaczewski Z., Technologia celulozy i papieru Powierzchniowe uszlachetnianie papieru, Tom III, Wydawnictwo Szkolne i Pedagogiczne, Warszawa 1997;</p> <p>4.red. Ziajka S., Mleczarstwo zagadnienia wybrane, Tom I i II, ART, Olsztyn 1997;</p> <p>5.Pijanowski E., Dłużewski M., Dłużewska A., Jarczyk A., Ogólna technologia żywności, WNT, Warszawa 2004;</p> <p>6.Bortel E., Koneczny H., Zarys technologii chemicznej, PWN, Warszawa 1992;</p> <p>7.Kępiński J., Technologia chemiczna nieorganiczna, PWN, 1964;</p> <p>8.Wybrane NORMY dotyczące przygotowywanego zagadnienia z Biblioteki norm.</p>
	eResources addresses	<p>Adresy na platformie eNauczenie:</p> <p>Technologia Produktu niest. 2023/2024 - Moodle ID: 33756  <a href="https://enauczenie.pg.edu.pl/moodle/course/view.php?id=33756">https://enauczenie.pg.edu.pl/moodle/course/view.php?id=33756</a></p>
Example issues/ example questions/ tasks being completed	Standards, directives, characteristics of raw materials, types of packaging, material, unit operations and processes, block diagram, VSM, technological diagram, machines and devices, Lean Management tools, by-products, waste characteristics, waste management, quality systems, ecological aspects of the process, aspects economical process.	
Work placement	Not applicable	

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