GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Food Processing and Environmental Protection Machinery, PG_00039907		
Field of study	Mechanical Engineering, Mechanical Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Energy and Industrial Apparatus -> Faculty of Mechanical Engineering and Ship Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Bartosz Dawidowicz	
	Teachers	dr inż. Bartosz Dawidowicz	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	0.0	0.0	0.0	30

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	30	6.0	14.0	50

Subject objectives

Overview of selected basic unit processes in the food industry and environmental protection. Presentation of the trends in the construction of machines in the food industry and environmental protection.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_K02] understands ex-technical aspects of the activities included in the profession of a mechanical engineer, among others its social impact and influence on the condition of an environment; is aware of the responsibility connected with the decisions made in connection with engineering activity	The student is able to reduce or eliminate the negative impact on the environment resulting from processing processes through the use of appropriate technical solutions.	[SK5] Assessment of ability to solve problems that arise in practice
[K6_U11] is able to analyse the operation of devices and compare the construction solutions applying usage, safety, environmental, economic and legal criteria	Based on the technical data of devices, processes and technologies, the student selects the appropriate solution to the given problem, meeting the safety, environmental, economic and legal criteria.	[SU3] Assessment of ability to use knowledge gained from the subject
[K6_W08] possesses basic knowledge including the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, with the lifetime cycle	The student is able to design the device and propose a number of solutions to increase the efficiency and effectiveness of the device.	[SW1] Assessment of factual knowledge
[K6_W06] possesses elementary knowledge on automatics and robotics of mechanical systems	The student is able to select / apply the appropriate control and process control system.	[SW1] Assessment of factual knowledge

Subject contents

Presentation of basic unit processes and operations, comminution, sedimentation, separation of suspensions in the field of centrifugal forces, etc. Presentation of machines and devices used in the food industry and environmental protection. Presentation of sample production lines.

Prerequisites and co-requisites

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	grade from the project	56.0%	50.0%
	grade from the lecture	56.0%	50.0%
Recommended reading	Basic literature	1. Fellows P.J., Food Processing Technology. Principles and Practice, Woodhead Publishing Ltd., Cambridge 1996. 2. Grandison A.S., Lewis M.J., Separation process in the food and biotechnology industries. Principles and applications, Woodhead Publishing Ltd., Cambridge 1996. 3. Lewicki P., Inżynieria procesowa i aparatura przemysłu spożywczego, WNT, Warszawa 1999.	
	Supplementary literature	1. Lewis M.J., Physical properties of foods and food processing systems, Woodhead Publishing Ltd., Cambridge 1996. 2. Ling-Min Cheng, Food Machinery for the production of coreal foods..., Ellis Horwood Ltd., Chichester 1992.	
	eResources addresses	Adresy na platformie eNauczanie: Urządzenia przemysłu spożywczego i ochrony środowiska - Moodle ID: 29689 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29689	
Example issues/ example questions/ tasks being completed	1. What is fluidization, application examples in environmental protection engineering.2. Construction and operation of a sedimentation centrifuge.3. Principle of operation as well as advantages and disadvantages of a chamber press.		
Work placement	Not applicable		