



Subject card

Subject name and code	Selected Aspects of Pharmaceutical Techniques, PG_00064143						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2024	Academic year of realisation of subject				2026/2027	
Education level	first-cycle studies	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				1.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. Wiesław Sawicki					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15		1.0		9.0	25
Subject objectives	Skills and competences: characterization and description of essential oral dosage forms. Skills and competences: quality assessment of drug formulation, selection of storage conditions for medicinal products.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U04] is able to utilize empirical, analytical, simulation, and computer-based methods to formulate and solve engineering tasks in the field of medical and mechanical engineering	The student is able to use the basic knowledge of solid dosage form technology necessary for the IMM course of study.			[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_K01] knows his/her proficiencies and his/her limitations in performing professional tasks, he/she is aware of needing to improve his/her skills through the whole life, he/she has entrepreneurship and innovation skills, he/she is aware of engineering skills from the society point of view	Student understands the non-technical aspects of drugs production, has a habit of documenting activities, understands the need of work with maintaining order and cleanliness, demonstrate attention in anticipating potential problems and mistakes.			[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_W06] has knowledge in specific areas related to the application of mechanical engineering in medicine or in the field of medical and rehabilitation devices	Student has elementary knowledge of the issues of pharmacokinetics and biopharmacy.			[SW1] Assessment of factual knowledge		

Subject contents	<p>Course content – lecture</p> <p>Solid dosage form technology and related pharmacokinetic and biopharmaceutical issues: unit processes (granulation, tableting, coating, drying); tablet press types, design and operation of the Korsch XP1 laboratory tablet press, coating and coating machines, granulation, drying and fluidized bed coating, coating agents;</p> <p>granulate characteristics, manufacturing methods, excipients, control methods;</p> <p>pellet characteristics, manufacturing methods;</p> <p>tablets (oral, for oral use, for preparing solutions and suspensions, coated and uncoated, excipients);</p> <p>basics of powder compression engineering;</p> <p>gelatin capsules: soft and hard, release modification, multi-compartment dosage forms;</p> <p>basics of capsule filling engineering with powders and granules;</p> <p>Oral modified-release drug forms: enteric-coated and extended-release - manufacturing methods, role of excipients;</p> <p>tablet and capsule inspection methods;</p> <p>basics of herb drying technology.</p>								
Prerequisites and co-requisites									
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 512 794 539">Subject passing criteria</th> <th data-bbox="799 512 1137 539">Passing threshold</th> <th data-bbox="1142 512 1481 539">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 546 794 571">term with credit</td> <td data-bbox="799 546 1137 571">60.0%</td> <td data-bbox="1142 546 1481 571">100.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	term with credit	60.0%	100.0%
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Recommended reading	Basic literature	Janicki St., Fiebig A., Applied Pharmacy. Manual for Students of pharmacy, PZWL, Warszawa 2002.							
	Supplementary literature	<p>Łunio R., Sawicki W.: Tablets - methods and mechanism of manufacturing. Part I. Pol. Pharm., 2008; 64, nr 6, 265-275.</p> <p>Sawicki W., Krasowska M.: Methods and mechanism of tablets production. Part II. Pol. Pharm., 2009; 65, nr 1, 59-68.</p>							
	eResources addresses								
Example issues/ example questions/ tasks being completed									
Practical activities within the subject	Not applicable								

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