



Subject card

Subject name and code	Selected aspects of pharmaceutical techniques, PG_00024946						
Field of study	Medical and Mechanical Engineering, Mechanical and Medical 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			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. Wiesław Sawicki				
	Teachers		prof. Wiesław Sawicki				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	15.0	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		3.0		7.0	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_K02	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_W12	Student has elementary knowledge of the issues of pharmacokinetics and biopharmacy.			[SW1] Assessment of factual knowledge		
	K6_U10	Student has a basic knowledge of solid dosage forms technology necessary for the study of IMM			[SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	Technology of oral solid formulations and related biopharmaceutical aspects: <ul style="list-style-type: none">• basic operations (granulation, tableting, coating, drying); types of tableting machines, construction and operation of laboratory tableting machine XP1 from Korsch company, drum coating - apparatus and the process, fluidbed granulation, drying and coating, coating excipients;• granules characteristics, methods of production, excipients, tests;• pellets characteristics, methods of production;• tablets (oral, for oral cavity, for solutions and suspensions, coated and uncoated, excipients);• gelatin capsules soft and hard, of modified release, multiparticulate delivery formulations;• modified drug release oral formulations: enteric coated and prolonged release methods of production, role of the excipients;• methods of quality control for tablets and capsules.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		term with credit	60.0%
Recommended reading	Basic literature	Janicki St., Fiebig A., Applied Pharmacy. Manual for Students of pharmacy, PZWL, Warszawa 2002.	
	Supplementary literature	Łunio R., Sawicki W. : Tablets - methods and mechanism of manufacturing. Part I. Pol. Pharm., 2008; 64, nr 6, 265-275. Sawicki W. , Krasowska M.: Methods and mechanism of tablets production. Part II. Pol. Pharm., 2009; 65, nr 1, 59-68.	
	eResources addresses	Adresy na platformie eNauczenie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		