

Subject card

Subject name and code	Fundamentals of pharmacokinetics for chemists, PG_00179587						
Field of study	Chemistry						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2027/2028		
Education level	Master's studies	Subject group			Optional subject group		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			2.0		
Learning profile	academic	Assessment form			credit		
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Aleksandra Dąbrowska				
	Teachers						
Lesson types	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: 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		5.0		15.0	50
Subject objectives	The aim of the course is to introduce students to the fundamental concepts and mechanisms of pharmacokinetics, with a particular focus on the relationship between the chemical properties of compounds and their behavior in the body. The course aims to develop students skills in analyzing pharmacokinetic data and applying modern measurement techniques and theoretical models to describe pharmacokinetic processes.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEMMU2_W04] Applies the acquired knowledge to an in-depth description of the properties of chemical connections, methods of their synthesis and analysis.	The student applies chemical knowledge to an in-depth description of the relationship between chemical structure and pharmacokinetic properties (absorption, metabolism, elimination).	[SW4] test/exam - oral or written [SW5] implementation of a problem task
	[CHEMMU2_K05] Understands the need for independent search of information in scientific literature and popular science magazines.	The student independently searches for and analyses information from scientific and popular science literature related to pharmacokinetics.	[SK4] test/exam - oral or written [SK5] implementation of a problem task
	[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	The student applies knowledge of chemistry and related disciplines (biology, physiology) to describe and analyse pharmacokinetic processes: absorption, distribution, metabolism, and excretion of active substances.	[SU4] test/exam - oral or written [SU5] implementation of a problem task
	[CHEMMU2_W03] Demonstrates extended knowledge in the field of modern measuring techniques used in chemical analysis.	The student demonstrates advanced knowledge of modern measurement techniques used in pharmacokinetics and chemical analysis of active substances.	[SW4] test/exam - oral or written [SW5] implementation of a problem task
	[CHEMMU2_U02] Critically assesses the results of conducted, performed observations and theoretical calculations and discusses errors.	The student critically interprets pharmacokinetic data, identifies possible sources of error in parameter calculations, and draws conclusions regarding the reliability of results.	[SU4] test/exam - oral or written [SU5] implementation of a problem task
	[CHEMMU2_U03] Finds necessary information in specialist literature, databases and other sources, lists basic scientific journals in chemistry.	The student independently searches for information on pharmacokinetic processes in scientific literature and databases, and identifies key journals in chemistry and pharmacology.	[SU4] test/exam - oral or written [SU5] implementation of a problem task
	[CHEMMU2_W05] Has extended knowledge in the field of the specialisation studied.	The student demonstrates advanced knowledge in pharmacokinetics, particularly regarding the influence of chemical properties on the fate of compounds in the body.	[SW4] test/exam - oral or written [SW5] implementation of a problem task
	[CHEMMU2_W07] Selects experimental and theoretical techniques to the extent necessary to understand the description and modelling of medium complexity chemical processes.	The student identifies and selects basic theoretical models and analytical techniques used to describe and analyse pharmacokinetic processes of medium complexity.	[SW4] test/exam - oral or written [SW5] implementation of a problem task
[CHEMMU2_K01] Knows the limitations of her/his own knowledge; understands the need for further education and can inspire other people to do so.	The student recognizes the limits of their pharmacokinetic knowledge and identifies the need for further learning; actively participates in discussions and encourages others to seek knowledge.	[SK4] test/exam - oral or written [SK5] implementation of a problem task	
Subject contents	Introduction to Pharmacokinetics. Chemical Properties and Pharmacokinetics. Pharmacokinetic Models. Measurement Methods in Pharmacokinetics. Pharmacokinetic Data Analysis. Application of Pharmacokinetics in Drug Design.		
Prerequisites and co-requisites	<p>Additional Requirements: Basic knowledge of general and organic chemistry; Fundamental understanding of chemical analytics; Ability to use scientific literature and databases.</p> <p>Additional Desirable Skills: Basic knowledge of biology and biochemistry is an advantage; Ability to work independently and think analytically; Interest in pharmacokinetics and pharmacology topics.</p>		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test 1	51.0%	25.0%
	test 2	51.0%	25.0%
	exam	51.0%	50.0%

Recommended reading	Basic literature	1. E. Wyska: Farmakokinetyka Podstawy i znaczenie praktyczne, 2. T. W. Herman: Farmakokinetyka
	Supplementary literature	publications and scientific studies
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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