GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	FOUNDATIONS OF PHARMACOLOGY, PG_00038907		
Field of study	Chemistry		
Date of commencement of studies	February 2023	Academic year of realisation of subject	2023/2024
Education level	second-cycle studies	Subject group	Optional subject group
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Pharmaceutical Technology and Biochemistry -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marcin Serocki	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	15.0	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	40.0	75

Subject objectives

The aim of this subject is to give the elemental knowledge on th mode of action of drugs on the human organism Pharmacokinetic process describes absorption, distribution, metabolism and elimination of the drug from the human body. Pharmacodynamic process describes the interaction of the drug with the receptor , ie. explains the pharmacological effect observed after administration of the drug.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_U01	Student is able to collect information and present the synthesis pathways of known drugs and their impact on the human body (pharmacokinetics and pharmacodynamics). Student understands the problems of drug synthesis and can propose an alternative way to obtain active substances.	[SU5] Assessment of ability to present the results of task
K7_K02	Student has a knowlage and understand the stages of implementing new medicines. Is aware of the scale of synthesis of the implemented drugs and is able to optimize and/or propose a less onerous method of synthesis of implemented/existing drugs.	[SK5] Assessment of ability to solve problems that arise in practice
K7_W02	Student based on the chemical structure of the compound can propose compartment of distribution of the drug in the body and/or cell and can propose a mechanism of detoxification (metabolism) of a given molecule.	[SW1] Assessment of factual knowledge

Subject contents

Basic consideration. Drug action. Pharmaceutical phase. Pharmacokinetic phase. Routes of drug administration. Absorpion of drugs. Barriers of absorpion. Mechanism od absorpion - diffusion, active transport, phagocytosis. Distribution of drug. Biotransformation. Phase I reactions. Cytochrome P450. Phase II - conjugation reactions. Excretion. ABC transporters. Pharmacokinetics. Pharmacokinetic parameters. Bioavailability. Therapuetic concentration. Toxic concentration. Pharmacokinetic models. Pharmacodynamics. Definition of receptor. Interaction drug -receptor. Agonists and antagonists. Dose effect curves. Allergic reactions. Undresirable and toxic effects of drug action. Design and testing of new drugs. Clinical tests. Gene and antisense therapy.

Prerequisites and co-requisites

Knowledge of Biochemistry is recommended

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Multimedial presentation on a given subject during seminar</td><td>60.0%</td><td>34.0%</td></tr>
<tr><td>Written exam - 90 minutes .</td><td>60.0%</td><td>66.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>"Farmakologia i Toksykologia". Praca zbiorowa pod redakcją E.Muchler. Wydawnictwo Medyczne Urban & Partner. Wrocław 2004 "Toksykologia". Pod redakcją W. Seńczuka. Wydawnictwo Lekarskie PZWL. Warszawa 1999 "Farmacja stosowana. Pod redakcją S.Janickiego, A.Fiebiga i M.Sznitowskiej. Wydawnictwo Lekarskie PZWL. Warszawa 2005</td></tr>
<tr><td>Supplementary literature</td><td>No requirements</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">In what compartment of the body / cells will be located medicines with high lipophilicity? How to improve the solubility of organic active substances in the aqueous solutions?</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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