



## Subject card

Subject name and code	Cancer cell biology, PG_00053381						
Field of study	Biomedical Engineering, Biomedical Engineering, Biomedical Engineering						
Date of commencement of studies	February 2024		Academic year of realisation of subject		2024/2025		
Education level	second-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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Pharmaceutical Technology and Biochemistry -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Ewa Augustyn				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	15.0	45
	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	45		3.0		27.0	75
Subject objectives	The aim of the course is to provide students with knowledge about the biology of cancer, in particular the causes of cancer diseases and the molecular mechanisms of the process of cancerogenesis.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_K01] is ready to create and develop models of proper behaviour in the work and life environment; undertake initiatives; critically evaluate actions of their own, teams and organisations they are part of; lead a group and take responsibility for its actions; responsibly perform professional roles taking into account changing social needs, including: - developing the achievements of the profession, - observing and developing rules of professional ethics and acting to comply to these rules		The student is able to take appropriate initiatives in the work and life environment, work in a team, take responsibility for their professional roles and comply with the principles of professional ethics.		[SK1] Assessment of group work skills [SK3] Assessment of ability to organize work [SK5] Assessment of ability to solve problems that arise in practice		
	[K7_W53] Knows and understands, to an increased extent, selected aspects of biomedical diagnostics.		The student has knowledge of selected aspects of biomedical diagnostics, in particular regarding cancer.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	[K7_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions		The student has skills in planning and conducting experiments related to the field of study, and is also able to properly interpret the obtained results and draw conclusions from them.		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task		

Subject contents	Phases of cancer development.Epidemiology of cancer diseases.Causes of cancer diseases.Oncogenes and tumor suppressor genes.Metastasis formation and angiogenesis.Tumor markers, targeted therapies.		
Prerequisites and co-requisites	Knowledge in the field of biochemistry and genetic engineering.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	prezentacja	60.0%	25.0%
	sprawozdania	60.0%	25.0%
	kolokwium	60.0%	50.0%
Recommended reading	Basic literature	R.A. Wienber. The biology of cancer. Gerland Science. Taylor & Francis Group, 2007, 2014.  L. Pecorino. Biologia molekularna nowotworów w praktyce klinicznej. Edra. 2018, 2023.	
	Supplementary literature	J. Bal. Biologia molekularna w zarysie. Elementy genetyki klinicznej. PWN, 2006.	
	eResources addresses	Adresy na platformie eNauczanie:	
	Example issues/ example questions/ tasks being completed	The role of oncogenes and tumor suppressor genes in cancer transformation.Mechanism and types of angiogenesis.Phases of metastasis.Causes of cancer diseases.	
Work placement	Not applicable		

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