



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	October 2024	Academic year of realisation of subject			2025/2026		
Education level	second-cycle studies	Subject group			Optional subject group Specialty 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	2	Language of instruction			Polish		
Semester of study	3	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 Augustin				
	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.	[SK5] Assessment of ability to solve problems that arise in practice [SK3] Assessment of ability to organize work [SK1] Assessment of group work skills
	[K7_U12] is able, to an increased extent, to analyze the operation of components and systems related to the field of study, as well as to measure their parameters and study their technical characteristics, and to plan and carry out experiments related to the field of study, including computer simulations, interpret the 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.	[SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information
	[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.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
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
	sprawozdania	60.0%	25.0%
	kolokwium	60.0%	50.0%
	prezentacja	60.0%	25.0%
Recommended reading	Basic literature	R.A. Wienber. The biology of cancer. Garland 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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