



Subject card

Subject name and code	Tissue Cultures, PG_00037414						
Field of study	Biotechnology						
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				2.0	
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 hab. Ewa Augustin				
	Teachers		dr hab. Ewa Augustin dr inż. Monika Pawłowska dr inż. Agnieszka Potęga Jolanta Kulesza Michał Kosno				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	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		2.0	50
Subject objectives	The aim of the course is to familiarize students with the basic aspects of in vitro culture of plant and animal cells.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W08		The student understands the basic aspects of in vitro cultivation of plant and animal cells.		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	K6_U06		The student knows the basic techniques for establishing in vitro culture.		[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment		

Subject contents	<p>Types of in vitro cultures.</p> <p>Secondary metabolites.</p> <p>Establishing in vitro plant and animal breeding.</p> <p>Stem cells and their use.</p> <p>Determination of biological activity of chemotherapeutic agents.</p> <p>Plant and animal tissues.</p> <p>Isolation of DNA and chlorophyll from plant cells.</p> <p>Basic immunocytochemical techniques.</p>											
Prerequisites and co-requisites	Knowledge of cell biology, biochemistry, general biotechnology.											
Assessment methods and criteria	<table border="1" data-bbox="448 781 1477 882"> <thead> <tr> <th data-bbox="448 781 794 815">Subject passing criteria</th> <th data-bbox="794 781 1141 815">Passing threshold</th> <th data-bbox="1141 781 1477 815">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 815 794 848">laboratory</td> <td data-bbox="794 815 1141 848">60.0%</td> <td data-bbox="1141 815 1477 848">40.0%</td> </tr> <tr> <td data-bbox="448 848 794 882">lecture</td> <td data-bbox="794 848 1141 882">60.0%</td> <td data-bbox="1141 848 1477 882">60.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	laboratory	60.0%	40.0%	lecture	60.0%	60.0%
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laboratory	60.0%	40.0%										
lecture	60.0%	60.0%										
Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. S. Malepszy. Plant biotechnology. PWN 2001. 2. S. Stokłosowa. Cell and tissue culture. PWN 2004. 3. E. Augustin. Selected aspects of plant and animal cell culture. Group work. Gdańsk, 2010. 										
	Supplementary literature	<ol style="list-style-type: none"> 1. B. Alberts et al. Fundamentals of cell biology. Introduction to molecular biology. PWN 1999, 2005. 2. W. Sawicki. Histology. PZWL Medical Publishing House 2000. 3. R.I. Freshney. Culture of animal cells. 5th edition. Wiley-Liss, 2005. 										
	eResources addresses											
Example issues/ example questions/ tasks being completed	<p>List the types of in vitro plant cultures.</p> <p>Methods of obtaining plant secondary metabolites.</p> <p>How to start an in vitro culture of animal cells?</p> <p>Basic composition of in vitro plant and animal culture media.</p> <p>List the methods of determining the biological activity of chemotherapeutic agents.</p>											
Work placement	Not applicable											