

COURSE DESCRIPTION (SYLLABUS)

1.	Course: Cell Culture Techniques
2.	Language of instruction: English
3.	Faculty: Faculty of Biotechnology
4.	Course/module code: 29-BT-S1-E6-EnCCT
5.	Course/module type (<i>mandatory or elective</i>): mandatory
6.	Programme: Biotechnology
7.	Study cycle (<i>1st/2nd</i>): 1st cycle
8.	Year: 3rd
9.	Semester (<i>autumn or spring</i>): spring
10.	Form of tuition and number of hours: Lecture: 15 h
11.	Coordinator(s): Antonina Mazur, PhD
12.	Initial requirements (<i>knowledge, skills, social competences</i>): Basic knowledge about biology and biochemistry at first years of bachelor studies level and basic skills in laboratory work.
13.	Objectives: Acquiring basic information about work with animal cells and tissues cultures.
14.	Content: Attending the lecture will give the students an opportunity to get familiar with specificity of working in the laboratory where animal cells are cultured. During the lectures following topics are mentioned and discussed: <ul style="list-style-type: none"> • safety of work with animal cells and tissue cultures and genetically modified microorganisms; • organization of animal cell culture laboratory; • preservation of sterile conditions during work with animal cells;

	<ul style="list-style-type: none"> • cells' authentication; • cells' media; • sources of cells and tissues; • characterization of primary cell cultures and cell lines; • modern applications employing animal cell cultures in researches aiming to solve scientific problems raised in biology, pharmacology, biotechnology and medicine. 	
15.	<p>Learning outcomes</p> <p>Knowledge:</p> <ul style="list-style-type: none"> • Student has knowledge of the basic techniques and research tools used in biochemistry, molecular biology and biotechnology. • Student is be familiar with the basic principles of health and safety and ergonomics procedures in the laboratory, know procedures of work with genetically modified organisms. <p>Skills:</p> <ul style="list-style-type: none"> • Student applies basic physical, chemical and biochemical techniques necessary for studying biological processes. • Student has skills to grow cell cultures and genetic modification of microorganisms and cells of higher organisms. • Student reads and understands scientific literature in the field of biochemistry, biotechnology, molecular biology and microbiology in English. • Student uses professional scientific language in discussions. <p>Social competence:</p> <ul style="list-style-type: none"> • Student understands the need for continuing education throughout the whole life, including broadening knowledge in biotechnology. • Student recognizes the importance of knowledge and expert opinions in solving cognitive and practical problems. • Student understands the need for careful planning of tasks and scientific experiments. • Student knows and follows the rules of health and safety at work. 	<p>Outcome symbols:</p> <p>K1_W08</p> <p>K1_W10</p> <p>K1_U01</p> <p>K1_U02</p> <p>K1_U03</p> <p>K1_U09</p> <p>K1_K01</p> <p>K1_K02</p> <p>K1_K03</p> <p>K1_K05</p>
16.	<p>Recommended literature:</p> <ul style="list-style-type: none"> • <u>Culture of Animal cells - a manual of basic techniques and specialized applications, R.I. Freshney, Willey-Blackwell, 7th edition, 2016.</u> 	
17.	<p>Methods of verification of the assumed learning outcomes:</p> <p>written examination</p>	

18.	Conditions of earning credits: passing the written exam	
19.	Student's workload:	
	Activity	Number of hours for the activity
	Hours of instruction (as stipulated in study programme) : • Lecture: 15 h	15 h
	Student's own work: • reading literature • preparing for written exam	20 h
	Total number of hours:	35 h
	Number of ECTS:	2 ECTS