

DESCRIPTION OF THE COURSE OF STUDY

Course code	12.6-3LEK-F-BioM	
Name of the course in	Polish	Biotechnologia Medyczna
	English	Medical Biotechnology

1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

1.1. Field of study	medicine
1.2. Mode of study	full-time
1.3. Level of study	uniform Master's study
1.4. Profile of study*	practical
1.5. Specialization*	lack
1.6. Unit running the course of study	Faculty of Medicine and Health Sciences
1.7. Person/s preparing the course description	Prof. dr. hab. n. med. Robert Bucki
1.8. Person responsible for the course of study	Prof. dr. hab. n. med. Robert Bucki
1.9. Contact	buckirobert@gmail.com

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Affiliation with the module	optional – faculty
2.2. Language of instruction	English
2.3. Semesters in which the course of study is offered	Between 2nd/9th semester
2.4. Prerequisites*	Anatomy, Histology, Genetics,

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes	Lectures: 15, classes: 20	
3.2. Place of classes	Lecture /classes - Courses in the teaching rooms of the JKU	
3.3. Form of assessment	LECTURE– E, CLASSES – credit with grade	
3.4. Teaching methods	Practical classes, conversational lecture, discussion	
3.5. Bibliography	Required reading	Medical Biotechnology, ISBN: 9780195699609
	Further reading	

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED TEACHING OUTCOMES

<p>4.1. Course objectives (<i>including form of classes</i>)</p> <p>Medical biotechnology- integration of natural and engineering sciences to the use of cells or parts as well as molecular analogues for the purpose of obtaining medical products.</p> <p>The aim of the course is:</p> <ol style="list-style-type: none"> 1. Understanding the ethical aspects of medical biotechnology. 2. Molecular mechanisms of biological processes. 3. Acquaintance with the basics of medical biotechnology with particular emphasis on gene and cell therapy. 4. Knowledge of the full range of examples presenting the use of biotechnology in medicine. 5. Gaining theoretical knowledge in the scope of medical biotechnology as well as practical skills of entrepreneurship <p>This is accomplished by:</p> <ol style="list-style-type: none"> 1. Assimilation of theoretical knowledge <p>Evaluation and interpretation of the results conducted by the students experience and practical exercises</p>
<p>4.2. Detailed syllabus (<i>including form of classes</i>)</p> <ol style="list-style-type: none"> 1. Differentiation and reprogramming of cells. 2. Plasmid vectors, adenoviral, AAV, retroviral, and - construction and application in experimental gene therapy. 3. The use of transgenic mice for the study. 4. Gene therapy and cellular dysfunction of cardiovascular, respiratory and central nervous system. 5. Medical biotechnology in cancer therapy. 6. Practical classes: ELIS, simulated test HIV, test GMO, transformation of bacteria GFP, plasmid purification, electrophoretic analysis, WB.
<p>4.3 Education outcomes in the discipline</p>

Code	A student, who passed the course	Relation to teaching outcomes
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within the scope of KNOWLEDGE:		
W01	knows the basic trends of therapy development, in particular the possibility of applying cell therapy, gene therapy as well as targeted therapy in specific diseases;	C.W41.
W02	knows the possibilities of modern cancer therapy (including multimodal therapy), the prospects for cell and gene therapies and their adverse effects;	E.W25.
within the scope of ABILITIES:		
U01	conducts a review of medical history of the child and its family;	E.U2.
U02	collects blood for toxicological studies and secures the material for hemogenetic research in accordance with given principles.	G.U7.
within the scope of SOCIAL COMPETENCE:		
...K01		
...		

4.4. Methods of assessment of the intended teaching outcomes

Teaching outcomes (code)	Method of assessment (+/-)																				
	Exam oral/written*			Test*			Project*			Effort in class*			Self-study*			Group work*			Others*		
	Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes		
	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...
W01																					
W02																					
U01																					
U02																					
...K01																					
...																					

*delete as appropriate

4.5. Criteria of assessment of the intended teaching outcomes

Form of classes	Grade	Criterion of assessment
lecture (L)	3	61% -68% correct answers
	3,5	69% - 76% correct answers
	4	77% - 84% correct answers
	4,5	85 % -92% correct answers
	5	93-100
classes (C)*	3	61% -68% correct answers
	3,5	69% - 76% correct answers
	4	77% - 84% correct answers
	4,5	85 % -92% correct answers
	5	93-100
others (...)*	3	
	3,5	
	4	
	4,5	
	5	

5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

Category	Student's workload
	Full-time studies
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/	35
Participation in lectures*	15
Participation in classes, seminars, laboratories*	20
Preparation in the exam/ final test*	
Others*	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	15

<i>Preparation for the lecture*</i>	
<i>Preparation for the classes, seminars, laboratories*</i>	10
<i>Preparation for the exam/test*</i>	5
<i>Gathering materials for the project/Internet query*</i>	
<i>Preparation of multimedia presentation</i>	
<i>Others*</i>	
TOTAL NUMBER OF HOURS	50
ECTS credits for the course of study	2

Accepted for execution (date and signatures of the teachers running the course in the given academic year)

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