



Syllabus 2018/2019														
Description of the course														
Module/Course	Molecular medicine techniques- clinical applications								Group of detailed education results					
									Group code B, C	Group name Scientific basis of medicine, Preclinical sciences				
Faculty	Medicine													
Major	Medicine													
Specialties	Not applicable													
Level of studies	Uniform magister studies X * 1 st degree studies <input type="checkbox"/> 2 nd degree studies <input type="checkbox"/> 3 rd degree studies <input type="checkbox"/> postgraduate studies <input type="checkbox"/>													
Form of studies	X full-time X part-time													
Year of studies	III-V						Semester		<input type="checkbox"/> Winter X Summer					
Type of course	<input type="checkbox"/> obligatory <input type="checkbox"/> limited choice X free choice / elective													
Course	<input type="checkbox"/> major X basic													
Language of instruction	<input type="checkbox"/> Polish X English <input type="checkbox"/> other													
* mark <input type="checkbox"/> with an X														
Number of hours														
Form of education														
Unit teaching the course	Lectures (L)	Seminars (SE)	Auditorium classes (AC)	Major Classes – not clinical (MC)	Clinical Classes (CC)	Laboratory Classes (LC)	Classes in Simulated Conditions (CSC)	Practical Classes with Patient (PCP)	Specialist Classes – magister studies (SCM)	Foreign language Course (FLC)	Physical Education obligatory (PE)	Vocational Practice (VP)	Self-Study (Student's own work)	E-learning (EL)
Winter Semester														
Summer Semester														
						20							6	
TOTAL per year:														



practical classes with patient; PE – physical education (obligatory); VP – vocational practice; SS – self-study, EL – E-learning .	
Please mark on scale 1-5 how the above effects place your classes in the following categories: communication of knowledge, skills or forming attitudes: Knowledge: 3 Skills: 5	
Student's amount of work (balance of ECTS points)	
Student's workload (class participation, activity, preparation, etc.)	Student Workload (h)
1. Contact hours;	20
2. Student's own work (self-study);	6
Total student's workload	26
ECTS points for module/course	1
Comments	
Content of classes (please enter topic words of specific classes divided into their didactic form and remember how it is translated to intended educational effects)	
Lectures 1. 2. 3.	
Seminars 1. 2. 3.	
Practical classes 1. Introduction to gene therapy. Stages of gene cloning. Working with gene databases, restrictive analysis, PCR primers designing (3 h) 2. Gene therapy application in oncology and cardio-vascular diseases. Construction of expression vector part 1. RNA isolation, RT-PCR (3 h) 3. Construction of expression vector part 2. Digestion of PCR product with restriction endonucleases, ligation, transformation (3 h). 4. DNA vaccines application. Construction of expression vector part 3. Plasmid DNA isolation from bacteria. Indication of DNA concentration (3 h). 5. Cellular therapy. Cell culture basic methods. Methods of DNA delivery into cells. Construction of expression vector part 4 Restrictive analysis of obtained DNA (3 h). 6. Epigenetic regulation of gene expression. microRNA application in gene therapy and diagnosis. Algorithms and calculation of gene expression in real-time PCR technique. Construction of expression vector part 5. Electrophoresis, summary of cloning results (3 h) 7. Pharmacogenetics. SNP detection methods and analysis of results. Summary of the course (2 h).	
Other 1. 2. 3. etc. ...	
Basic literature (list according to importance, no more than 3 items) 1. Herzog R.W., Zolotukhin S. <i>A guide to human gene therapy</i> . World Scientific Publishing Co, Singapore	



2010.

2. Lattime E.C, Gerson S.L. *Gene therapy of cancer*. Elsevier Academic Press, Third edition 2014
3. Barnes L.P. *New research on pharmacogenetics*. Nova Science Publishers, Inc, New York 2007

Additional literature and other materials (no more than 3 items)

1. Scientific articles- provided by the teacher
- 2.
- 3.

Didactic resources requirements (e.g. laboratory, multimedia projector, other...)

Laboratory, cell culture room, laminar chamber, incubator-CO₂, fluorescence microscope, multimedia projector, laptops, thermocycler, real-time thermocycler, centrifuge, thermoblok, UV-transiluminator

Preliminary conditions (minimum requirements to be met by the student before starting the module/course)

None

Conditions to receive credit for the course (specify the form, criteria and conditions of receiving credit for classes included in the module/course, admission terms to final theoretical or practical examination, its form and requirements to be met by the student to pass it and criteria for specific grades).

Positive grade for the project of expression plasmid vector construction into gene therapy application-prepared by the whole group.

Positive grade for all oral responses and analyzes of experimental results.

Proper execution of all designed experiments as well as active participation in discussion.

Each absence must be made up, including rector's days or dean's hours in the time and form specified by the teacher.

Grade:	Criteria for course
Very Good (5.0)	Educational and skills objectives achieved completely.
Good Plus (4.5)	Educational and skills objectives achieved almost completely with minor errors and inaccuracies.
Good (4.0)	Educational and skills objectives achieved except for some less important aspects and errors.
Satisfactory Plus (3.5)	Educational and skills objectives achieved except for some important aspects and inaccuracies.
Satisfactory (3.0)	Educational and skills objectives achieved with the exclusion of some essential aspects and significant inaccuracies.

Grade:	Criteria for exam (if applicable)
Very Good (5.0)	
Good Plus (4.5)	
Good (4.0)	
Satisfactory Plus (3.5)	
Satisfactory (3.0)	



Name of unit teaching course:	Zakład Techniki Molekularnych
Address	ul. M. Skłodowskiej-Curie 52 , 50-369 Wrocław
Phone	71 7841588
E-mail	anna.karpiewska@umed.wroc.pl

Person responsible for course:	Dr Małgorzata Małodobra-Mazur
Phone	71 7841595
E-mail	malgorzata.malodobra-mazur@umed.wroc.pl

<i>List of persons conducting specific classes:</i>	<i>degree/scientific or professional title</i>	<i>Discipline</i>	<i>Performer profession</i>	<i>Form of classes</i>
Małgorzata Małodobra-Mazur	PhD	molecular biology	laboratory diagnostician	laboratory classes

Date of Syllabus development

01.10. 2018

Syllabus developed by

Dagmara Baczyńska
and Małgorzata Małodobra-Mazur

Signature of Head of teaching unit

Signature of Faculty Dean

Wrocław Medical University
FACULTY OF MEDICINE
VICE-DEAN FOR STUDIES IN ENGLISH
Andrzej Handlich
Prof. Andrzej Handlich, PhD

Uniwersytet Medyczny we Wrocławiu
Katedra Medycyny Sądowej.....
ZAKŁAD TECHNIK MOLEKULARNYCH
kierownik
Tadeusz Dobosz
prof. dr hab. Tadeusz Dobosz

