Syllabus 2020/2021															
Description of the course															
Module/Course				hnique ional c		lolecula	ar Med	icine	e –		Gro	up of de ults	etailed	educat	ion
											Gro	up	Grou	ıp namı	e
											cod	le		ntific Ba	
											В			edicine clinical	•
											С		scier		
													Sciel	ices	
Faculty			Me	dicine											
Major			Medicine												
Specialties			_	t applic											
Level of studies				iform n	_		ies X *								
				degree											
4)				degree											::
				degree											
			-	stgradu											
Form of studies			X f	ull-tim	e 🗆	part-ti	me								
Year of studies			Semes				neste	r	□Wint						
				X Summer											
Type of course			□ obligatory												
			☐ limited choice												
			X free choice / elective												
Course			major X basic												
Language of instruc			ЦΡ	□ Polish X English □ other											
* mark 🗆 with an)	Κ				Nive		C la								
							f hours								
					FORM	Tor ea	ucatior T	1	-					-	
12				<u>a</u>				ent		ţe.	(FLC)	tony		_	
			(AC)	clinic		9	_	h Pat		magis	ourse	phliga	(VP)	S OWN	
Unit teaching the			Auditorium classes (AC)	Major Classes – not clinical (MC)	(33)	Laboratory Classes (LC)	Classes in Simulated Conditions (CSC)	Practical Classes with Patient	1	Specialist Classes – magister studies (SCM)	Foreign language Course (FLC)	Physical Education obligatory (PE)	Vocational Practice (VP)	Self-Study (Student's own work)	
course:	3	Seminars (SE)	Jm ck	asses	Clinical Classes (CC)	ry Cla	Classes in Simula Conditions (CSC)	Class		t Class	angns	Educa	al Pra	y (Stu	E-learning (EL)
	Lectures (L)	ninar	ditori	jor ()	Cal	orato	sses in	ctical	<u>.</u>	Specialist Clas studies (SCM)	eign l	rsical)	ation	F-Stud	sarnin
	ĕ	Ser	Ă.	ΣΣ	ō	Lab	- 5 S	Pra	<u>a</u>	Spustu	Fo	Ph (PE	Š	Se o ∧	T.
Winter Semester															
21															
Summer Semester															
Molecular						20			,\.					6	
Techniques Unit						ļ,									
TOTAL per year:				2 I											



Molecular			20				6	
Techniques Unit								

Educational objectives (max. 6 items)

- C1. Mastering the basic techniques of molecular medicine by the student
- C2. Orientation in various issues and techniques of molecular medicine
- C3. Learning basic techniques of genetic material visualization in agarose gel electrophoresis.

Education result matrix for module/course in relation to verification methods of the intended education result and the type of class

Number of course education result	Number of major education result	Student who completes the module/course knows/is able to	Methods of verification of intended education results (forming and summarising)	Form of didaction class **enter the abbreviation
K01	B.W13.	- knows the function of nucleotides in cell, I- and II- dary structures of DNA and RNA	Essay, discussion	LC, SK
K02	B.W14,	- knows the function of genome, transcriptome and proteome of human body and basic methods used for its study		
K03	C.W1.	- knows the basic concepts of genetic		
K04	C.W9.	- knows the basic methods for genomic mutation diagnosis		
S01	B.U8.	- uses basic laboratory techniques such as: qualitative analysis, nucleic acids electrophoresis	Discussion, assessment of student's activity	LC, SK
S02	B.U9.	- supports simple measuring instruments and evaluates the accuracy of measurements	and skills during laboratory classes	
S03	B.U10	uses databases, including web databases, and searches for the necessary information using the available tools		
S04	B.U13.	- plans and performs simple research and interprets its results and draws conclusions.		

^{**} L - lecture; SE - seminar; AC - auditorium classes; MC - major classes (non-clinical); CC - clinical classes; LC - laboratory classes; SCM - specialist classes (magister studies); CSC - classes in simulated conditions; FLC - foreign language course; PCP 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: 5

Skills: 4

Student's amount of work (balance of ECTS points)

Student's workload Student Workload (h)
(class participation, activity, preparation, etc.)



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

Class I: Taking a blood sample. Separation of lymphocytes from whole blood by Gradisol gradient. Collection and storage of isolated cells. Preparing of stains from saliva on the tissue papers.

Class II: Isolation of DNA from lymphocytes using phenol-based method. DNA extraction from bloodstain using a Chelex method.

Class III: Total RNA isolation on-column method. The reaction of reverse transcription.

Class IV: PCR and its application in the example of detection of polymorphisms in the CCR5 gene.

Class V: RFLP that is PCR and RESTRICTION ENZYMES: Restriction enzymes in the example of hemochromatosis diagnosis.

Class VI: ELECTROPHORESIS: Agarose gel electrophoresis of products obtained in during previous exercises. Databases (NCBI, USCS): where to find information about genes, what we can find, searching for the DNA, mRNA sequence.

Class VII: Introduction into gene therapy.

Other

Basic literature (list according to importance, no more than 3 items)

- 1. McLennan, AG, Bates, AD, Turner, PC, White, MRH Instant Notes in Molecular Biology. Published by Springer-Verlag (1997-09-01)
- 2. Genomes, T.A. Brown, Garland Science Publishing, 2007

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

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

The laboratory equipped with a basic laboratory devices: thermocyclers, centrifuges, thermomixer, authomated pipettes, the multimedia projector.

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

Sign up for the list. Basic knowledge of genetic

Conditions to receive credit for the course:

Each absence must be made up, including rector's days or dean's hours.

To receive credit for the course student is obligated to be present at 100% of classes or any absence must be made up by preparing assay discussing the topic chosen by the student.

The course is ended by a one-choice test. The mark received at the end of the course will be estimated based on a number of positive answers as presented in the table below.

Grade:	Criteria for course	
Very Good (5.0)	100%-93%	
Good Plus (4.5)	92,9%-85%	
Good (4.0)	87,9%-78%	
Satisfactory Plus (3.5)	77,9%-70%	
Satisfactory (3.0)	69,9%-60%	

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:	Molecular Techniques Unit
Address	Ul. M. Skłodowskiej-Curie 52
Phone	71 478-15-88
E-mail	anna.karpiewska@umed.wroc.pl

Person responsible for course:	Dr Małgorzata Małodobra-Mazur
Phone	71 784-15-95
E-mail	malgorzata.malodobra-mazur@umed.wroc.pl

List of persons conducting specific classes:	degree/scientific or professional title	Discipline	Performer profession	Form of classes
Aneta Cierzniak	Mgr	Molecular highory	Medicine laboratory	Laboratory classes

Date of Syllabus development

Syllabus developed by

22.05.2020

Dr Małgorzata Małodobra-Mazur

Uniwersytet Medyczny we Wrociawiu
Signature of Head of teaching unit
ZAKLAD TECHNIK MOLEKULARNYCH
p.o. KIEROWNIKA
ork Med. Malgorzata Malodobra-Mazur

Wroclaw Medical University

Signature of Faculty Dean

Faculty of Medicine ce-Dean Condish Atudies