DESCRIPTION OF THE COURSE OF STUDY

Course code	0512.6.BIOT2.B/C.MM	
Name of the course in	Polish	***Mikrobiologia Medyczna***
	English	***Medical Microbiology***

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

1.1. Field of study	BIOTECHNOLOGY
1.2. Mode of study	STATIONARY
1.3. Level of study	Second-cycle master's studies
1.4. Profile of study*	General academic
1.5. Person/s preparing the course description	Dr Paulina Żarnowiec
1.6. Contact	Paulina.zarnowiec@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1. Language of instruction	Polish, English
2.2. Prerequisites*	Basics of general microbiology. Possessing the ability to inoculate bacteria and cultivate microorganisms

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes		Lecture: 30 h Laboratory exercises: 30h
3.2. Place of classes		D4
3.3. Form of assessment		Lecture - final exam with grade Laboratory exercises - colloquium, practical examination
3.4. Teaching methods		In: exposing (show, film, experience), presenting (informative), problem-atic L: laboratory exercises
3.5. Bibliography	**Required reading**	Irving W., Boswell T., Dlawer A., Medical microbiology, PWN Scientific Publishing House, 2008
	Further reading	Szewczyk E.M. Microbiological diagnostics. PWN Scientific Publishing House, 2013 Zaremba M.L., Borowski J. Medical microbiology. PZWL Medical Pu-blishing House, 2004

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1. Course objectives ***(including form of classes)***

Lectures:

C1 Understanding the mechanisms of antimicrobial defense
C2 Understanding basic definitions related to infections
C3 Understanding the basic factors of microbial pathogenicity
C4 Presentation of the general characteristics and clinical significance of key pathogenic bacterial groups
C5 Fundamentals of diagnostics and therapy of infections

Laboratories:

C1 Identification of etiological factors and mechanisms of pathogenesis of infections caused by microorganisms
C2 Selection of microbiological/serological tests depending on the type of infection and potential etiological factors
C3 Practical knowledge of the principles of collecting, storing, and transmitting materials for microbiological studies
C4 Acquisition of skills in interpreting microbiological and serological test results
C5 Practical presentation of clinically important mechanisms of microbial resistance to antibiotics
C6 Acquisition of practical skills in proper hand disinfection
C7 Acquisition of skills to distinguish between hospital-acquired and community-acquired infections

4.2. Detailed syllabus ***(including form of classes)***

Lectures:

- Etiopathogenesis and epidemiology of infections (sources of infections, transmission routes, susceptible popu-lations, risk factors)
- Detailed microbiology
- Microbiological diagnostics
- Basic groups of antimicrobial drugs – mechanism of action, spectrum
- Clinically important mechanisms of microbial resistance to antibiotics

- Fundamentals of virology
- Vaccines

Laboratories:

- Disinfection, sterilization, and aseptic procedures
- Microbiological diagnostics
- Antibiotic susceptibility testing (antibiogram)

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of **KNOWLEDGE:**		
W01	Has an in-depth knowledge of selected facts and phenomena as well as methods in the field of medical microbiology, and theories explaining the relationships between them in the area of medical biotechnology.	BIO2A_W03
W02	Knows and understands in depth the principles of designing and the course of various biotechnological processes related to the design of new diagnostic methods and therapeutics, as well as the potential hazards arising from their use.	BIO2A_W06
W03	Is familiar with the possibilities of using microorganisms in medicine and the main developmental directions in medical biotechnology, especially in designing new therapies.	BIO2A_W05
within the scope of **ABILITIES:**		
U01	Is able to critically assess the results of experiments, observations, and theoretical calculations related to research work in the field of medical biotechnology.	BIO2A_U06
U02	Is capable of working individually as well as collaborating with others and taking a leading role in teams within the scope of research projects in the field of medical biotechnology.	BIO2A_U04
within the scope of **SOCIAL COMPETENCE:**		
K01	Is aware of the importance of their knowledge in solving cognitive and practical problems related to medical biotechnology.	BIO2A_K01
K02	Is prepared to fulfill social obligations and share acquired specialized knowledge in the areas of infections, antibiotic therapy, vaccinations, or epidemiology.	BIO2A_K02
K03	Critically evaluates their knowledge and is aware of the need for its continuous deepening.	BIO2A_K04

4.4. Methods of assessment of the intended learning outcomes

Teaching outcomes *(code)*	Method of assessment (+/-)														
	Exam oral /written*			Test*			Project*			Group work*			Others* e.g. standardized test used in e-learning		
	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*	*...*
W01	+														
W02	+														
W03	+														
U01					+										
U02					+										
K01								+							
K02								+							
K03								+							

delete as appropriate

4.5. Criteria of assessment of the intended learning outcomes		
Form of classes	**Grade**	**Criterion of assessment**
Lecture (L) * (including e-learning)	**3**	51-60% of the maximum number of points from the exam.
	3,5	61-70% of the maximum number of points from the exam.
	4	71-80% of the maximum number of points from the exam.
	4,5	81-90% of the maximum number of points from the exam.
	5	91-100% of the maximum number of points from the exam.
Classes (C) * (including e-learning)	**3**	51-60% of the maximum number of points from the exam.
	3,5	61-70% of the maximum number of points from the exam.
	4	71-80% of the maximum number of points from the exam.
	4,5	81-90% of the maximum number of points from the exam.
	5	91-100% of the maximum number of points from the exam.

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

Category	**Student's workload**	
	Full-time studies	**Extramural studies**
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/	***90***	
*Participation in lectures**	***45***	
*Participation in classes, seminars, laboratories**	***45***	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	***60***	
*Preparation for the lecture**	***30***	
*Preparation for the classes, seminars, laboratories**	***30***	
TOTAL NUMBER OF HOURS	***150***	
ECTS credits for the course of study	***6***	

delete as appropriate

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

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