

NAME OF THE COURSE		SPECIAL MICROBIOLOGY				
Code	PMB282	Year of study	1			
Course teacher	Associate Professor Ana Maravić, PhD	Credits (ECTS)	2.3			
Associate teachers	Tomislav Rončević, PhD	Type of instruction (number of hours)	L	S	E	F
			15		15	
Status of the course	Mandatory	Percentage of application of e-learning				
COURSE DESCRIPTION						
Course objectives	Enabling students to understand basic knowledge of the biology of bacterial, viral, fungal and parasitic pathogens that cause infectious diseases, their mechanisms of spread and transmission, pathogenesis, control and prevention as well as to develop informatics and diagnostic skills, including the use and interpretation of laboratory tests in diagnosing pathogens diseases, and master the skills of determination and microscopic analysis.					
Course enrolment requirements and entry competences required for the course	Basics in Microbiology					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Interpretate microbial taxonomy, structure, physiology of functions.</li> <li>2. Critically analyze the basic knowledge about the pathogenesis of microorganisms and the occurrence of infectious diseases.</li> <li>3. Discuss the importance of ecology and evolution in the spread of infectious diseases.</li> <li>4. Apply skills of microscopic analysis, colonial morphology and biochemical characteristics in pathogen determination.</li> </ol>					
Course content broken down in detail by weekly class schedule (syllabus)	<p>Lectures:</p> <ol style="list-style-type: none"> <li>1. Gram-positive cocci - <i>Streptococcus</i>, <i>Staphylococcus</i>, <i>Enterococcus</i>. (1.5 hours)</li> <li>2. Gram-negative cocci - <i>Neisseria</i>, <i>Moraxella</i>, <i>Haemophilus</i>, <i>Bordetella</i>, <i>Legionella</i>, <i>Brucella</i>, <i>Pasteurella</i>, <i>Francisella</i>. (1.5 hours)</li> <li>3. Basic characteristics of Enterobacteriaceae (1.5 hours)</li> <li>4. <i>Vibrio</i>, <i>Helicobacter</i>, <i>Campylobacter</i>, <i>Pseudomonas</i>, <i>Acinetobacter</i> (1.5 hours)</li> <li>5. Acid-resistant bacteria, genus <i>Mycobacterium</i> and <i>Nocardia</i> and Gram-negative spiral bacteria Spirochaetaceae. (1.5 hours)</li> <li>6. Bacteria without cell wall, family Mycoplasmataceae. Obligatory intracellular bacteria Rickettsiaceae, Chlamydiaceae. (1.5 hours)</li> <li>7. Basic characteristics of the virus: Composition, structure and symmetry of virus (1.5 hours)</li> <li>8. Virus life cycle. Viral infections. (1.5 hours)</li> <li>9. Fungal cell structures. Variety of fungi: yeasts and molds. (1.5 hours)</li> <li>10. Introduction to medical parasitology. Intestinal protozoa. Blood and tissue parasites. (1.5 hours)</li> </ol> <p>Laboratory exercises include:  Identification of microorganisms based on micro and macromorphology, physiological, biochemical characteristics of the main groups of bacteria, fungi and protozoa. Gram positive cocci - genera <i>Streptococcus</i>, <i>Staphylococcus</i>, <i>Enterococcus</i>. Genus - <i>Neisseria</i>, <i>Moraxella</i>, <i>Haemophilus</i>. Characteristics of bacteria from the family Enterobacteriaceae. Gram-negative, coiled, rod-shaped bacteria — <i>Vibrio</i>, <i>Helicobacter</i>, <i>Campylobacter</i>. Gram-negative non-fermenting bacteria - genera <i>Pseudomonas</i>, <i>Acinetobacter</i>. Anaerobic bacteria-genera</p>					

	<p><i>Clostridium, Lactobacillus, Actinomyces</i>; family- Bacteroidaceae. Gram positive bacilli: genera <i>Bacillus, Corynebacterium, Listeria</i>. Acid-resistant bacteria, genus <i>Mycobacterium</i> and <i>Nocardia</i>. Gram-negative spiral bacteria, family Spirochaetaceae. Bacteria without cell wall, family Mycoplasmataceae. Obligatory intracellular bacteria: Rickettsiaceae, Chlamydiaceae. Dermatophytes. Dimorphic fungi. Mold and macromorphology of molds. Intestinal protozoa. Blood and tissue parasites. Helminthology. Cestode. Trematode. Nematodes.</p>					
Format of instruction	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> seminars and workshops <input checked="" type="checkbox"/> exercises <input type="checkbox"/> <i>on line</i> in entirety <input type="checkbox"/> partial e-learning <input type="checkbox"/> field work			<input type="checkbox"/> independent assignments <input type="checkbox"/> multimedia <input type="checkbox"/> laboratory <input type="checkbox"/> work with mentor <input type="checkbox"/> (other)		
Student responsibilities	Attendance at lectures in the amount of at least 70% of the scheduled hourly rate. All planned laboratory exercises performed.					
Screening student work (name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)	Class attendance	0.5	Research		Practical training	
	Experimental work		Report		(Other)	
	Essay		Seminar essay		(Other)	
	Tests		Oral exam		(Other)	
	Written exam	2.0	Project		(Other)	
Grading and evaluating student work in class and at the final exam	<p>The exam consists of a written, oral and practical part. The course material is divided into two parts that students take through partial written exams or by taking the entire exam at the end of the semester. A written exam is considered passed if students achieve at least 60% of the total number of points. Scoring: &lt;60% student failed; 60-69% sufficient (2); 70-79% good (3); 80-89% very good (4); 90-100% excellent (5). After passing the written part, the student acquires the right to take the oral part of the exam. The final grade is formed on the basis of grades from all the above parts of the exam.</p>					
Required literature (available in the library and via other media)	<b>Title</b>				<b>Number of copies in the library</b>	<b>Availability via other media</b>
	P. Murray, K. Rosenthal, M. Pfaller. Medical Microbiology, 8th Edition. Elsevier, 2016.				1	
Optional literature (at the time of submission of study programme proposal)						
Quality assurance methods that ensure the acquisition of exit competences	<p>Keeping records of attendance at classes; Annual analysis of exam performance; Student survey with the aim of teacher evaluation; Teacher self-evaluation. Feedback from students who have already graduated on the relevance of course content.</p>					
Other (as the proposer wishes to add)						