

School of Health Sciences / Nursing

2023 - 2024 Academic Year

MICROBIOLOGY

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
MICROBIOLOGY	HEM2131800	Fall Semester	2+0	2	3
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Prof.Dr. Ayşegül ÇOPUR ÇİÇEK				
Name of Lecturer(s)	Prof.Dr. Ayşegül ÇOPUR ÇİÇEK				
Assistant(s)					
Aim	The aim of this course is to mention the importance of microorganisms and microbiology, to teach prokaryotic cell biology (metabolism and genetic), define nutrient and other physical needs of microorganisms, modes of transmission, infection control, host-microorganism interaction, properties of the immune system, and how clinical samples are taken from patients and processed in the laboratory.				
Course Content	This course contains; 1.Morphology of microorganisms, Microbial genetics,2.Modes of transmission of microorganisms,3.Sterilization and disinfection methods,4.Immunologic properties of the host and microorganisms,5.Nonspecific and specific defense mechanisms of the host,6.Hypersensitivity, immunodeficiency and vaccines,7.Medically important bacteria,9.Importantly bacterial infections,9.Medically important viruses,10.Importantly viral infections,11.Importantly properties of fungi and parasites,12.Importantly infections caused by fungi and parasites,13.Healthcare associated infections,14.General principles of the microbiology laboratory.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
Explains the morphology, genetics, physiology and transmission routes of microorganisms			10, 13, 9	A	
Define prokaryotic and eukaryotic cells			9	A	
Defines bacteria, fungi, parasites, viruses and prions			9	A	
Explains the relationship between microorganism and host			10, 13, 9	A	
Explains the defence systems of the host against microorganisms			10, 13, 16, 9	A	
Recapitulates innate and adaptive immune responses			10, 16, 9	A	
Explains vaccines and vaccine-acquired immunity			10, 13, 9	A	
Define medically important bacteria and bacterial infections			10, 13, 9	A	
Explain virulence factors of bacteria and pathogenesis of bacterial infections			10, 13, 9	A	
Define medically important viruses and viral infections			10, 13, 16, 9	A	
Explain virus genetics and types of viral infections			10, 13, 16, 9	A	
Describe medically important fungi, parasites and their infections			10, 13, 16, 9	A	
Explain transmission routes of microorganisms with examples			10, 13, 9	A	
Define classification and nomenclature of microorganisms			9	A	
Explains microbiota			10, 9	A	
Explains general principles in antimicrobial therapy			10, 16, 9	A	
Categorizes antimicrobials			16, 9	A	
Explains antimicrobial resistance mechanisms			10, 16, 9	A	
Defines the concepts of sterilization, disinfection and antiseptics			10, 13, 16, 9	A	
Summarizes strategies for preventing healthcare-associated infections			10, 13, 9	A	
Explains laboratory methods used in the detection and identification of microorganisms			9	A	
Teaching Methods	10: Discussion Method, 13: Case Study Method, 16: Question - Answer Technique, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	1.Morphology of microorganisms, Microbial genetics	Lecture notes, chapter in the source book: 1			
2	2.Modes of transmission of microorganisms	Lecture notes, chapter in the source book: 1			
3	3.Sterilization and disinfection methods	Lecture notes			
4	4.Immunologic properties of the host and microorganisms	Lecture notes, chapter in the source book: 2			
5	5.Nonspecific and specific defense mechanisms of the host	Lecture notes, chapter in the source book: 2			
6	6.Hypersensitivity, immunodeficiency and vaccines	Lecture notes, chapter in the source book: 2			
7	7.Medically important bacteria	Lecture notes, chapter in the source book: 3			
8	9.Importantly bacterial infections	Lecture notes, chapter in the source book: 3			
9	9.Medically important viruses	Lecture notes, chapter in the source book: 4			
10	10.Importantly viral infections	Lecture notes, chapter in the source book: 4			
11	11.Importantly properties of fungi and parasites	Lecture notes, chapter in the source book: 5,6			
12	12.Importantly infections caused by fungi and parasites	Lecture notes, chapter in the source book: 5,6			
13	13.Healthcare associated infections	Lecture notes			
14	14.General principles of the microbiology laboratory	Lecture notes, chapter in the source book: 7			
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			

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Resources

1. Jawetz, Melnick ve Adelberg Tıbbi Mikrobiyoloji. Geo. F. Brooks, Karen C. Carroll, Janet S. Butel, Stephen A (eds.) Çeviri editörü: Osman Şadi Yenen, Nobel Tıp Kitabevi, 2014 2. Özlem Güven. Tıbbi Mikrobiyoloji ders notları.1. Sağlık Bilimlerinde Mikrobiyoloji. Doç. Dr. Özgül Kısa (edt.), Nobel Tıp Kitabevi, 2014.