

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
ADVANCED MICROBIOLOGY-I	MKBD1167840	Fall Semester	2+0	2	10
<b>Prerequisites Courses</b>					
<b>Recommended Elective Courses</b>					
<b>Language of Instruction</b>	Turkish				
<b>Course Level</b>	Third Cycle (Doctorate Degree)				
<b>Course Type</b>	Required				
<b>Course Coordinator</b>	Assist.Prof. Özlem GÜVEN				
<b>Name of Lecturer(s)</b>	Prof.Dr. Ayşegül ÇOPUR ÇİÇEK, Assist.Prof. Özlem GÜVEN				
<b>Assistant(s)</b>					
<b>Aim</b>	The course focuses on mastering advanced concepts, diagnostic techniques, disease pathogenesis and strategies to deal with challenges such as antimicrobial resistance.				
<b>Course Content</b>	This course contains; Microbial diversity and Bacterial Classification /Domains of Bacteria/Human microbiota,Bacterial Cell Structure and Function, growth, and energy production pathways ,Microbial genomic structure, genome evolution and antibiotic resistance mechanisms,Host-pathogen bacteria interactions ,Selected discussions of Gram positive and Gram negative pathogenic bacteria ,Disinfection and sterilization methods and important concepts ,Typing methods of microorganisms ,Discussions on recent scientific articles .				
<b>Course Learning Outcomes</b>			<b>Teaching Methods</b>	<b>Assessment Methods</b>	
1. Knows the diversity of the microbial world and its contribution to ecocide 2. Explains how the microbiome can affect human physiology and the role of the microbiome in infectious diseases. 3. Describes the methods used in the taxonomic classification of microorganisms 4. Describes the pathways of bacterial metabolism and energy production 5. Explains the mechanisms of bacterial gene expression and protein biosynthesis and describe the relationship between genome evolution and antibiotic resistance in bacteria 6. Explains the transmission routes of microorganisms with examples. 7. Explains the virulence factors of pathogenic bacteria and the mechanisms of protection from the immune system 8. Explains the immune systems of the host against microorganisms. 9. Explains the virulence factors and infection mechanisms of Gram positive and Gram negative pathogenic bacteria that frequently cause infection. 10. Defines disinfection antiseptis sterilization methods 11. Explains the principles of culture-based and molecular typing methods 12. Compiles the latest scientific articles on a selected topic and writes them in systematic review format					
<b>Teaching Methods</b>					
<b>Assessment Methods</b>					
<b>Lecture Schedule</b>					
<b>Sequenc e</b>	<b>Topics</b>	<b>Preliminary Preparation</b>			
1	Microbial diversity and Bacterial Classification /Domains of Bacteria/Human microbiota				
2	Bacterial Cell Structure and Function, growth, and energy production pathways				
3	Microbial genomic structure, genome evolution and antibiotic resistance mechanisms				
4	Host-pathogen bacteria interactions				
5	Selected discussions of Gram positive and Gram negative pathogenic bacteria				
6	Disinfection and sterilization methods and important concepts				
7	Typing methods of microorganisms				
8	Discussions on recent scientific articles				
<b>Evaluation Methods</b>		<b>Weight(%)</b>			
Midterm Exam		50			
General Exam		50			

Resources	
1.	Microbiology: An Introduction (11th Edition), Gerard J. Tortora et al.
2.	Medical Microbiology (7th Edition), Patrick Murray et al.
3.	Preselected scientific articles