

School of Pharmacy / School of Pharmacy (English)

2024 - 2025 Academic Year

MICROBIOLOGY LABORATORY

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
MICROBIOLOGY LABORATORY	PHA2113078	Fall Semester	0+2	1	2
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. İlhan TAHRALI				
Name of Lecturer(s)	Assist.Prof. İlhan TAHRALI				
Assistant(s)					
Aim	The aim of this course is to define basic laboratory techniques of working with microorganisms, culture and stain techniques, with practical sessions in laboratory.				
Course Content	This course contains; Lab policies, Devices and materials used in the microbiology laboratory and the use of the microscope, Sterilization and Disinfection Methods, Preparation of Media, Inoculation Methods, Inoculation Methods, Preparation of Smear and Simple Staining, Antibiotic susceptibility testing, Microscopic examination of bacteria with Gram staining, Observation of yeasts under the microscope, Observation of moulds under the microscope, Identification tests of bacteria, Serological tests (Blood group determination), Microorganism Counting Methods, Microbiological Analysis of Pharmaceutical Products.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1. Establish the system in the microbiology laboratory.			14, 16, 17, 3, 6, 8, 9	A, H	
1.1. Define the equipments.			14, 16, 17, 3, 6, 8, 9	A, H	
1.2. Perform the culture techniques.			14, 16, 17, 3, 6, 8, 9	A, H	
1.3. Perform the staining techniques.			14, 16, 17, 3, 6, 8, 9	A, H	
2. Discuss the diagnostic tests of bacterial infections.			14, 16, 17, 3, 6, 8, 9	A, H	
2.1. Apply the bacterial identification tests.			14, 16, 17, 3, 6, 8, 9	A, H	
2.2. Explain to take the throat culture.			14, 16, 17, 3, 6, 8, 9	A, H	
2.3. Explain the antibiogram test for throat culture.			14, 16, 17, 3, 6, 8, 9	A, H	
3. Discuss the diagnostic tests of fungal infections.			14, 16, 17, 3, 6, 8, 9	A, H	
3.1. Apply the fungal identification tests.			14, 16, 17, 3, 6, 8, 9	A, H	
3.2. Explain to take the fungal culture.			14, 16, 17, 3, 6, 8, 9	A, H	
4. Correlate the microbiological tests of pharmaceutical products.			14, 16, 17, 3, 6, 8, 9	A, H	
4.1. Apply the microbiological tests of pharmaceutical products.			14, 16, 17, 3, 6, 8, 9	A, H	
4.2. Summarise the serological tests.			14, 16, 17, 3, 6, 8, 9	A, H	
4.3. Apply the blood screen tests.			14, 16, 17, 3, 6, 8, 9	A, H	
Teaching Methods	14: Self Study Method, 16: Question - Answer Technique, 17: Experimental Technique, 3: Problem Based Learning Model, 6: Experiential Learning, 8: Flipped Classroom Learning, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, H: Performance Task				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Lab policies, Devices and materials used in the microbiology laboratory and the use of the microscope	1			
2	Sterilization and Disinfection Methods	1			
3	Preparation of Media	1			
4	Inoculation Methods	1			
5	Inoculation Methods	1			
6	Preparation of Smear and Simple Staining	1			
7	Antibiotic susceptibility testing	1			
8	Microscopic examination of bacteria with Gram staining	1			
9	Observation of yeasts under the microscope	1			
10	Observation of moulds under the microscope	1			
11	Identification tests of bacteria	1			
12	Serological tests (Blood group determination)	1			
13	Microorganism Counting Methods	1			
14	Microbiological Analysis of Pharmaceutical Products	1			
Evaluation Methods			Weight(%)		
Midterm Exam			60		
General Exam			40		

Resources
1. Textbook will be given to the students