

COURSE INFORMATION					
Course Title	Code	Semester	L+P+L Hour	Credits	ECTS
Clinical Microbiology	MED 554	Phase 5/9-10	24	2	2*

* ECTS credits are the university credits of the courses in Yeditepe University, Faculty of Medicine, Undergraduate Medical Education Program

Prerequisites	Students apply to this course in their 5th year of faculty of medicine
----------------------	--

Language of Instruction	English
Course Level	Second Cycle including First Cycle Degree (One Tier Programme)
Course Type	Area Elective
Course Coordinator	Güner Söyletir, Pınar Çıragil
Instructors	Güner Söyletir, Pınar Çıragil, Aynur Eren Topkaya
Assistants	
Goals	To develop a deep understanding of the rational and effective use of microbiology tests
Content	Clinical use of rapid diagnostic tests and syndromic panels in the diagnosis of infectious diseases, Clinical approach to antimicrobial susceptibility test results, Clinical importance of blood cultures, effective and timely evaluation of results, Interpretation of serological tests in infectious diseases.

Learning Outcomes	Programme Learning Outcomes	Teaching Methods	Assessment Methods
After participating in this clerkship program, students should be able to 1) Have knowledge about how to use rapid diagnostic tests and syndromic panels in the clinic in the diagnosis of infectious diseases.	1.1.1,1.1.3,1.1.4,1.1.6,1.1.7,2.1.1,2.1.2,2.2.1,2.2.3,2.3.2,2.5.3,3.1.1,3.1.2,3.1.3	1,2,3	A
2) Can interpret how to use those tests in a cost effective manner	1.1.1,1.1.4,1.1.3,1.1.6,1.1.7,2.1.1,2.1.2,2.2.1,2.2.3,2.3.2,2.5.3,3.1.1,3.1.2,3.1.3	1,2,3	A
3)Can interpret antimicrobial susceptibility test results and select antibiotics according to resistance mechanisms.	1.1.1,1.1.3,1.1.6,1.1.7,2.1.1,	1,2,3	A

	,2.5.3, 3.1.1, 3.1.2,3.1.3		
4)Have knowledge about intrinsic resistance mechanism	1.1.1, 1.1.3,1.1.61. 1.7,2.1.1, ,2.5.3, 3.1.1, ,3.1.2,3.1.3	1,2,3	A
5) Knows when to order blood cultures	1.1.1, 1.1.3,1.1.61. 1.7,2.1.1, 2.2.3,2.3.2, 3.1.1, ,3.1.2	1,2,3	A
6) Knows how to collect blood samples for culture and able to interpret the results of blood cultures	1.1.1, 1.1.3,1.1.61. 1.7,2.1.1, 3.1.1, 3.1.2,3.1.3	1,2,3	
6) In the diagnosis of infectious diseases, can distinguish in which cases serological tests can be diagnostic and in which cases they can be helpful.	1.1.1, 1.1.3,1.1.61. 1.7,2.1.1, ,2.5.3, 3.1.1, 3.1.2,3.1.3	1,2,3	A
7)Selects most appropriate microbiological test/s for diagnosis of a given infectious disease step by step	1.1.1, 1.1.3,1.1.4,1. 1.6, 1.1.7,2.1.1, ,2.5.3, 3.1.1, ,3.1.2,3.1.3	1,2,3	
8) Can present the evaluation of antimicrobial test results of patient samples as a report.	1.1.1, 1.1.3, 1.1.61.1.7,2. 1.1, ,2.5.3, 3.1.1, 3.1.2, ,3.1.3	1,2,3	B,C

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Discussion
Assessment Methods:	A: Testing B: Presentation C: Assignment

Day	Topics
1	Lecture: The importance of clinical microbiology laboratory in the diagnosis of infectious diseases
1	Lecture: Pros and cons of rapid diagnostic tests
1	Practice: Evaluation of clinical samples in the clinical microbiology laboratory
1	Practice: Evaluation of clinical samples in the clinical microbiology laboratory
1	Practice: Evaluation of clinical samples in the clinical microbiology laboratory
1	Practice: Evaluation of clinical samples in the clinical microbiology laboratory

2	Lecture: Clinical significance and correct interpretation of syndromic panels
2	Lecture: Proper use of serological tests in the diagnosis of infectious diseases
2	Practice: Examination of syndromic panels in the clinical microbiology laboratory
2	Practice: Examination of syndromic panels in the clinical microbiology laboratory
2	Practice Evaluation of serological tests with patient samples
2	Practice Evaluation of serological tests with patient samples
3	Lecture: Clinical reflection of antimicrobial resistance mechanisms
3	Lecture: Antimicrobial susceptibility testing: when, how?
3	Practice: Interpretation of susceptibility test results in the clinical microbiology laboratory
3	Practice: Interpretation of susceptibility test results in the clinical microbiology laboratory
3	Practice: Interpretation of susceptibility test results in the clinical microbiology laboratory
3	Practice: Interpretation of susceptibility test results in the clinical microbiology laboratory
4	Lecture The place and importance of blood cultures in the diagnosis of infectious diseases
4	Lecture: The place and importance of blood cultures in the diagnosis of infectious diseases
4	Practice: Blood culture collection technique and its correct application (bedside training)
4	Practice: Blood culture collection technique and its correct application (bedside training)
4	Practice: Blood culture collection technique and its correct application (bedside training)
4	Practice: Blood culture collection technique and its correct application (bedside training)
5	Presentation of antimicrobial test results of patient samples as a report

RECOMMENDED SOURCES	
Textbook	Medical Microbiology, Patrick R. Murray PhD, Ken S. Rosenthal
Additional Resources	Lecture notes

MATERIAL SHARING	
Documents	Google Classroom
Assignments	Google Classroom

ASSESSMENT		
IN-TERM STUDIES	NUMBER	PERCENTAGE
Presentation	1	100
Total		100
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		100

COURSE CATEGORY	Expertise/Field Courses
------------------------	-------------------------

COURSES CONTRIBUTION TO PROGRAM					
COMPETENCE AREA-1 / Professional Practices	Contribution				
COMPETENCE 1.1. Health Service Provider	1	2	3	4	5
Competency 1.1.1. Integrates knowledge, skills, and attitudes acquired from basic and clinical medical sciences, behavioral sciences, and social sciences to provide health services.					X
Competency 1.1.2. Demonstrates a biopsychosocial approach that considers the individual's sociodemographic and sociocultural background without discrimination based on language, religion, race, or gender in patient management.					
Competency 1.1.3. Prioritizes the protection and improvement of individuals' and community's health in the delivery of healthcare services.			X		
Competency 1.1.4. Performs the necessary actions in the direction of maintaining and improving the state of health as considering the individual, social, social and environmental factors affecting health.			X		
Competency 1.1.5. Provides health education to healthy/ill individuals and their families, as well as to other healthcare professionals, by recognizing the characteristics, needs, and expectations of the target audience.					
Competency 1.1.6. Demonstrates a safe, rational, and effective approach in the processes of protection, diagnosis, treatment, follow-up, and rehabilitation in health service delivery.					X
Competency 1.1.7. Performs interventional and/or non-interventional procedures safely and effectively for the patient in the processes of diagnosis, treatment, follow-up, and rehabilitation.				X	
Competency 1.1.8. Provides healthcare services considering patient and employee health and safety.					
Competency 1.1.9. Considers changes related to the physical and socio-economic environment at both regional and global scales that affect health, as well as changes in the individual characteristics and behaviors of those who seek healthcare services.					

COMPETENCE AREA-2 / Professional Values and Approaches	Contribution				
COMPETENCE 2.1. Adopting Professional Ethics and Principles	1	2	3	4	5
Competency 2.1.1. Considers good medical practices while performing the profession.					X
Competency 2.1.2. Fulfills duties and obligations within the framework of ethical principles, rights, and legal responsibilities required by the profession.					
Competency 2.1.3. Demonstrates determined behavior in providing high-quality healthcare while considering the patient's integrity.				X	
Competency 2.1.4. Evaluates own performance in professional practices by considering own emotions and cognitive characteristics.					
COMPETENCE 2.2. Health Advocate					
Competency 2.2.1. Advocates for the improvement of healthcare service delivery by considering the concepts of social accountability and social responsibility in the protection and enhancement of community health.			X		
Competency 2.2.2. Plans and implements service delivery, education, and counseling processes related to individual and community health, in collaboration with all stakeholders, for the protection and improvement of health.				X	
Competency 2.2.3. Evaluates the impact of health policies and practices on individual and community health indicators and advocates for the improvement of healthcare quality.			X		
Competency 2.2.4. Gives importance to protecting and improving own physical, mental, and social health and takes necessary actions for it.					
COMPETENCE 2.3. Leader-Manager					
Competency 2.3.1. Demonstrates exemplary behavior and leadership within the healthcare team during service delivery.					
Competency 2.3.2. Utilizes resources in a cost-effective, socially beneficial, and compliant manner with regulations in the planning, implementation, and evaluation processes of healthcare services as the manager in the healthcare institution.			X		
COMPETENCE 2.4. Team Member					
Competency 2.4.1. Communicates effectively within the healthcare team and takes on different team roles as necessary.					
Competency 2.4.2. Displays appropriate behaviors while being aware of the duties and responsibilities of healthcare workers within the healthcare team.					
Competency 2.4.3. Works collaboratively and effectively with colleagues and other professional groups in professional practice.				X	
COMPETENCE 2.5. Communicator					
Competency 2.5.1. Communicates effectively with patients, their families, healthcare professionals, and other occupational groups, institutions and organizations.					
Competency 2.5.2. Communicates effectively with individuals and groups who require a special approach and have different sociocultural characteristics.					
Competency 2.5.3. Demonstrates a patient-centered approach that involves the patient in decision-making mechanisms during the diagnosis, treatment, follow-up, and rehabilitation processes.					X
COMPETENCE AREA-3 / Professional and Personal Development	Contribution				

COMPETENCE 3.1. Scientific and Analytical Approach	1	2	3	4	5
Competency 3.1.1. Plans and implements scientific research, as necessary, for the population it serves, and utilizes the results obtained, as well as those from other research, for the benefit of the community.					X
Competency 3.1.2. Accesses and critically evaluates current literature related to their profession.					X
Competency 3.1.3. Applies evidence-based medicine principles in the clinical decision-making process.					X
Competency 3.1.4. Uses information technologies to enhance the effectiveness of healthcare, research, and education activities.				X	
COMPETENCE 3.2. Lifelong Learner					
Competency 3.2.1. Manages effectively individual study processes and career development.			X		
Competency 3.2.2. Demonstrates skills in acquiring, evaluating, integrating new information with existing knowledge, applying to professional situations, and adapting to changing conditions throughout professional career.				X	
Competency 3.2.3. Selects the right learning resources to improve the quality of health care and organizes the learning process.				X	

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Lecture	4	2	8
Practice	4	4	16
Hours for off-the-classroom study (Pre-study, practice, review/week)	5	1	5
Research	4	1	4
Presentation	1	6	6
Total Work Load			39
Total Work Load / 25 (h)			1.56
ECTS Credit of the Course			2