

Course Title	Code	Semester	Theoretical (hours/week)	Practice (hours/week)	Laboratory (hours/week)	ECTS
<b>Molecular Microbiology</b>	<b>MIK 517</b>	<b>1./2. Semester</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>5</b>
<b>Prerequisites</b>	None					
<b>Course Language</b>	Turkish					
<b>Course Type</b>	Elective					
<b>Teaching Methods</b>	Lecture, question- answer, demonstration, practice-exercise					
<b>Instructor(s)</b>						
<b>Course Objective</b>	The aim of this course is to teach the molecular structure of microorganisms and molecular methods.					
<b>Course Learning Outcomes</b>	1- Describes the genomic structures of microorganisms. 2- Learns the molecular methods used in the diagnosis of microorganisms. 3- Explains molecular techniques and their principles.					
<b>References</b>	1- Molecular Microbiology, Diagnostic Principles and Practice. (Eds: Persing DH, Tenover FC, Versalovic J, Tang Y, Unger ER, Relman DA, White TJ). ASM Press, Washington DC, 2004.					

## WEEKLY COURSE TOPICS

Weeks	DISCUSSION TOPICS TO BE PROCESSED
1.	Genetics of Microorganisms
2.	Genetics of Microorganisms
3.	Nucleic Acid Extraction
4.	Polymerase Chain Reaction (PCR)
5.	Qualitative PCR Methods
6.	Quantitative PCR Methods
7.	General Principles and Types of Electrophoresis
8.	<b>Midterm exam</b>
9.	Molecular Typing
10.	Hybridization Methods
11.	DNA Sequence Analysis
12.	Molecular Phylogenetic Analysis
13.	Mutation Detection Methods
14.	Advantages and Disadvantages of Molecular Methods
15.	<b>Final Exam</b>

## ECTS / WORK LOAD TABLE

Activities	Number	Duration	Total Work Load
Course	14	2	28
Laboratory			
Practice	14	2	28
Field Study			
Outclass course work hours ( Self working / Teamwork / Preliminary work)	14	2	28
Presentations (Video preparation / Poster preparation / Oral presentation / Focus group discussion / Applying questionnaire/ Observation and report writing)	4	6	24
Seminars			
Project			
Case study			
Role playing, dramatization			
Preparing and criticizing article			
Semester midterm exams	1	7	7
Semester final exams	1	10	10
<b>Total Work Load ( hour ) / 25(s)</b>	<b>125/25</b>		
<b>ECTS</b>	<b>5</b>		

## EVALUATION SYSTEM

<b>Midterm Studies</b>	<b>Number</b>	<b>Contribution</b>
Midterm exam	1	%30
Quiz		
Laboratory		
Practice		
Field Study		
Specific practical training (If exists)		
Homework assignment		
Presentation and seminar	4	%20
Projects		
Other evaluation methods		
<b>Total of Midterm Studies</b>		<b>%50</b>
<b>Final Studies</b>		
Final	1	%50
Homework assignment		
Practice		
Laboratory		
<b>Total of Final Studies</b>		<b>%50</b>
Contribution of midterm studies to course grade		%50
Contribution of final studies to course grade		%50
<b>Total Grade</b>		<b>100</b>

## RELATIONSHIPS BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM QUALIFICATIONS

Program Qualifications	Learning Outcomes		
	LO1	LO2	LO3
1. Gains scientific knowledge and skills at the level of expertise in the field of medical microbiology.	5	4	4
2. Uses the research resources adequately to reach scientific knowledge.	5	5	5
3. Reaches new information in the field of medical microbiology and synthesizes the information obtained from different sources and evaluates it from a scientific point of view.	5	5	5
4. Gains awareness about the ethics of scientific work and fulfills ethical responsibilities.	2	2	2
5. Learns and applies the basic principles of research methods.	3	5	5
6. Describes the morphological and physiological characteristics of microorganisms.	5	3	3
7. Works in the laboratory in accordance with biosafety rules.	3	4	5
8. Have knowledge about the devices and tools that are specific to the field and use them.	3	4	4
9. Learns and applies laboratory techniques used in the field of medical microbiology.	3	5	5
10. Knows and applies the basic methods for microbiological examination.	3	5	5
11. Conducts studies related to the field individually or in a team. Performs the tasks given in scientific studies.	5	5	5
12. Plans and conducts scientific research by using the knowledge learned in the field of medical microbiology, analyzes and evaluates the results.	5	5	5
13. Gains the ability to present the information obtained or information related to his / her studies orally and visually.	5	5	5
14. Follows scientific developments and current studies.	5	5	5
15. Gains the ability of lifelong learning.	5	5	5

**Contribution to the level of proficiency: 1: Low 2: Low/Moderate 3: Moderate 4: High 5: Excellent**