

MOLECULAR DIAGNOSTIC TECHNIQUES IN MICROBIOLOGY

1	Course Title:	MOLECULAR DIAGNOSTIC TECHNIQUES IN MICROBIOLOGY	
2	Course Code:	TMK6010	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	5.00	
8	Theoretical (hour/week):	1.00	
9	Practice (hour/week):	2.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. Cüneyt ÖZAKIN	
15	Course Lecturers:	Prof Dr Beyza Ener, Doç Dr Melda Sınırtaş	
16	Contact information of the Course Coordinator:	ozakin@uludag.edu.tr 0224 295 4115 Uludağ Üniversitesi Tıp Fakültesi Tıbbi Mikrobiyoloji Anabilim dalı 16059 Görükle Bursa	
17	Website:		
18	Objective of the Course:	To learn molecular diagnostic methods used in microbiology and select method suitable for purpose, basic molecular methods applied and evaluated results.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To classify main molecular diagnostic methods used in microbiology
		2	To select method suitable for the purpose of molecular
		3	To apply main molecular methods
		4	To analyze the results of molecular tests
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	DNA, RNA and gene organisation	DNA extraction	
2	Replication, Transcription and protein synthesis	DNA extraction	

3	Gene mutation and re-arranging, Recombination	RNA extraction
4	Protein-base molecular diagnosis	RNA extraction
5	Nucleic acid base molecular diagnosis	Amplification
6	DNA sequencing	Amplification
7	Chromosomal and extra-chromosomal DNA restriction	Imaging
8	Plasmid analysis	Imaging
9	Hybridization techniques	Restriction
10	Pulse-field gel electrophoresis	Restriction
11	PCR-base typing; PCR-RFLP	Imaging
12	PCR-base typing; RAPD	Imaging
13	PCR-base typing; AP-PCR	Analysis
14	Comparison of molecular typing methods	Analysis

22	Textbooks, References and/or Other Materials:	1- Persing DH, Smith TF, Tenover FC, White TJ (Eds) Diagnostic Molecular Microbiology, Principles and Applications ASM Washington DC, 1993. ISBN1-55581-056-X 2- Decker J, Reischl U (Eds) Molecular Diagnosis of Infectious Diseases 2nd Ed. Humana Pres USA, 2004 ISBN : 1-59259-679-7. 3- Murray PR, Baron EJ, Jorgensen JH, Pfaller MA, Tenover FC, Tenover MC (Eds). Manual of Clinical Microbiology 8th Edition ASM Press Washington DC, 2003.
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Activites		Number	Duration (hour)	Total Work Load (hour)
TERM LEARNING ACTIVITIES		NUMBER	WEIGHT	
Theoretical		14	1.00	14.00
Practicals/Labs		14	2.00	28.00
Self study and preparation	0	0	4.00	56.00
Homeworks		1	10.00	10.00
Project Exam	1	5	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exam		5	15.00	15.00
Contribution of Term (Year) Learning Activities to Total Work Load		50	100	148.00
Others		0	0.00	0.00
Contribution of Final Exam to Success Grade		5	25.00	25.00
Total Work Load				148.00
Total work load/30hr				4.93
Measurement and Evaluation Techniques Used in the				
ECTS Credit of the Course				5.00

24 ECTS / WORK LOAD TABLE

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	0	0	1	1	0	1	4	5	2	2	0	0	0	0
ÖK2	0	0	0	0	0	2	0	2	4	5	1	1	0	0	0	0
ÖK3	0	0	0	0	0	2	0	2	3	5	2	1	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	3	4	3	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications					
Contrib ution Level:	1 very low	2 low	3 Medium	4 High	5 Very High