



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Molecular Techniques in Microbiology								
Course Code	MİK649		Course Level		Third Cycle (Doctorate Degree)				
ECTS Credit	3	Workload	77 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	The objective of this course is to give information about molecular techniques in microbiology.								
Course Content	Purification and separation of nucleic acids, cutting and joining DNA, Electrophoresis, analysis of gene expression, Northern Blots, RNase protection assay, Real Time PCR, Reverse transcription PCR, In situ hybridization, Translational analysis, Western Blots, analysis of gene function, manipulating gene expression.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Discussion, Case Study								
Name of Lecturer(s)	Assoc. Prof. Hafize Tuğba YÜKSEL DOLGUN								

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Assignment	4	20
Quiz	2	20
Midterm Examination	1	20
Final Examination	1	40

Recommended or Required Reading

1	Temel Mikrobiyoloji
2	Biyoteknoloji
3	Advances in Veterinary Medicine - Vol 40 Molecular Genetics , Gene Transfer, and Therapy
4	Early, rapid and sensitive veterinary molecular diagnostics - real time PCR applications

Week Weekly Detailed Course Contents & Teaching Methods

1	Theoretical & Practice	Purification of nucleic acids
2	Theoretical & Practice	Separation of nucleic acids
3	Theoretical & Practice	Cutting and joining DNA
4	Theoretical & Practice	Cutting and joining DNA
5	Theoretical & Practice	Electrophoresis
6	Theoretical & Practice	Analysis of gene expression
7	Theoretical & Practice	Analysis of gene expression
8	Theoretical & Practice	Discussion
9	Theoretical & Practice	Analysis of Northern Blots and RNase protection
10	Theoretical & Practice	Real time PCR
11	Theoretical & Practice	Reverse transcription PCR
12	Theoretical & Practice	In situ hybridization
13	Theoretical & Practice	Translational analysis
14	Theoretical & Practice	Analysis of gene function and gene expression manipulations

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	4	0	1	4
Quiz	2	1	1	4
Midterm Examination	1	5	1	6



Final Examination	1	5	2	7
	Total Workload (Hours)			77
	[Total Workload (Hours) / 25*] = ECTS			3
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	1. Having information about molecular techniques in microbiology
2	2. Having information about diagnostic ways of molecular techniques in microbiology
3	3. Having information about hybridisation techniques
4	4. Having information about amplification techniques
5	5. Providing ability to use these informations

Programme Outcomes (Microbiology (Veterinary Medicine) Doctorate)

1	Department has the ability to identify and apply information about bacteriology, virology, mycology and has the ability to recognize diseases about veterinary medicine.
2	Department has the ability to take the advantage of technology and has the ability to diagnose, treat and prevent the diseases by using appropriate equipments.
3	Department has the ability to analyze the epidemiological compounds of an animal population and has the ability to get precautions.
4	Department has the ability to test or analyze the diseases and has the ability to evaluate the results.
5	Department has the ability to perform, produce and conclude projects for scientific researches.
6	Department has the ability to donate theoretical and practical knowledge about postgraduate students in the are of microbiology.
7	Graduate students has the ability to perform scientific researches.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P1	4	5	4	4	5
P2	5	4	5	5	4
P3	4	4	4	3	4
P4	5	4	5	5	5
P5	4	4	4	4	4
P6	5	5	5	5	4
P7	4	4	4	5	4

