



**AYDIN ADNAN MENDERES UNIVERSITY**  
**GRADUATE SCHOOL OF HEALTH SCIENCES**  
**MEDICAL BIOLOGY**  
**MEDICAL BIOLOGY**  
**MEDICAL BIOLOGY MASTER**  
**COURSE INFORMATION FORM**

Course Title	Essentials of Geneticmanipulation								
Course Code	TIB505	Course Level			Second Cycle (Master's Degree)				
ECTS Credit	4	Workload	94 (Hours)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course									
Course Content									
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation)								
Name of Lecturer(s)	Assoc. Prof. Mehtap KILIÇ EREN								

#### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

#### Recommended or Required Reading

1	Molecular Cell Biology – Harvey Lodish, Arnold Berk, Chris A. Keiser, Monty Krieger, Anthony Bretscher, Hidde Ploegh, Angelika Amon, Mathew P. Scott - W. H. Freeman; Seventh Edition edition (May 2, 2012)
2	Molecular cloning: A laboratory manual – Michael Green and Joseph Sambrook – Cold Spring Harbor Laboratory Press (Fourth edition) 2012

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to genetic manipulation
2	Theoretical	Restriction endonucleases
3	Theoretical	DNA modification enzymes
4	Theoretical	Vectors
5	Theoretical	cDNA synthesis
6	Theoretical	Hybridization
7	Theoretical	Recombinant DNA libraries
8	Intermediate Exam	Midterm Exam
9	Theoretical	Promoters and their roles in gene expression
10	Theoretical	Restriction endonuclease digestion of DNA
11	Theoretical	in vitro mutagenesis
12	Theoretical	in vitro mutagenesis
13	Practice	Subcloning practice
14	Practice	Subcloning practice
15	Final Exam	Final Exam

#### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	1	1	26
Lecture - Practice	13	2	2	52
Midterm Examination	1	5	2	7
Final Examination	1	7	2	9
Total Workload (Hours)				94
[Total Workload (Hours) / 25*] = ECTS				4

\*25 hour workload is accepted as 1 ECTS

#### Learning Outcomes

1	
---	--



2	2. Learning molecular biology concepts
3	4. Learning gene manipulation and cloning techniques
4	Acquiring skills for conducting molecular biology techniques
5	

**Programme Outcomes (Medical Biology Master)**

1	To acquire fundamental knowledge on medical biology field
2	To gain expertise on molecular biology techniques
3	To utilize molecular biology techniques
4	To be able to construct and conduct a research project
5	To be able to follow and interpret scientific advancements

**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	5	5	2	2	2
P2	1	1	5	5	3
P3	1	1	5	5	3
P4	1	1	1	2	2
P5	3	3	3	3	5

