



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Introduction to Biotechnology							
Course Code		ZBK521		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of the course is to inform students about the general principles and historical development of biotechnology, basic concepts in molecular biology, gene transfer methods and modern methods including recombinant DNA technology.							
Course Content		Gene cloning techniques used in agriculture, industrial and environmental biotechnology, and special examples of transgenic applications are discussed and students are informed about biotechnology applications.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Project Based Study, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	10
Final Examination	1	60
Assignment	2	10
Term Assignment	1	20

Recommended or Required Reading

1	Barnum, S. R. 2004. Biotechnology: An Introduction. Brooks Cole, ISBN: 0534492967
2	Brown T. (Çeviri) 2009. Gen Klonlama ve DNA Analizi-ISBN-978605-395-234-3
3	Özcan, S., E. Gürel, M. Babaoğlu, 2004. Bitki Biyoteknolojisi, Cilt II, Genetik Mühendisliği ve Uygulamaları. Selçuk Üniversitesi Yayınevi, Konya.

Week	Weekly Detailed Course Contents	
1	Theoretical	Biotechnology and application areas, historical development
2	Theoretical	Biotechnology in the world and Turkey
3	Theoretical	Tissue and cell culture methods and applications in living organisms
4	Theoretical	DNA isolation, cloning and manipulation techniques
5	Theoretical	Gene cloning vectors
6	Theoretical	Cloning application in gene analysis
7	Theoretical	Gene, genome structure and gene expression
8	Intermediate Exam	Midterm
9	Theoretical	Polymerase chain reaction techniques in biotechnology
10	Theoretical	Quantitative Real Time PCR Techniques
11	Theoretical	Protein production from cloned genes
12	Theoretical	DNA insertion into living cells
13	Theoretical	Recombinant DNA techniques in plants
14	Theoretical	Recombinant DNA techniques in animals
15	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	2	84
Assignment	2	30	1	62
Midterm Examination	1	20	1	21



Final Examination	1	32	1	33
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	
2	
3	
4	
5	

Programme Outcomes (Plant Protection Master)

1	To develop knowledge and abilities that gained during undergraduate education
2	To gain ability to search and pursue current literature
3	To gain ability to plan and write projects that help solving problems in field of study.
4	To gain ability to conduct research, analyze data, evaluate research results scientifically and prepare reports and thesis writing.
5	Students will be able to learn and apply the laboratory test and analysis methods
6	To recognize occupational and ethical responsibility

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	4	5	5	5
P2	5	5	4	4	4
P3	5	5	4	4	5
P4	5	4	5	5	5
P5	5	4	5	5	5
P6	4	4	5	5	4

