



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Introduction to Plant Biotechnology							
Course Code		ZBY503		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	7	Workload	175 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of plant biotechnology is to help learn about methods and methods for future work. Learning of the isolation of DNA, RNA, protein, enzymes and other biomolecules from plants, molecular markers and fields used in agriculture, molecular diagnosis of plant diseases and harmfulness, gene transfer techniques to plants and their use in agriculture, biotechnological methods for breeding and improvement of plants.							
Course Content		Morphological features of plants, biochemical characteristics of plants, DNA-RNA isolation techniques, application and development of markers, cloning techniques, disease diagnosis in plants.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Project Based Study					
Name of Lecturer(s)		Assoc. Prof. Emre SEVİNDİK							

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Plant Biotechnology and Genetics Book Nobel Academic Publishing
2	Plant Biotechnology- The genetic manipulation of plants, Adrian Slater, Nigel, Scott, Mark Fowler, Oxford University Press, 2004, ISBN: 0199254680 Plant Biotechnology and Development, Peter M. Gresshoff (Ed.), Current Topics in Plant Molecular Biology

Week	Weekly Detailed Course Contents	
1	Theoretical	The aim of plant biotechnology
2	Theoretical	Application areas of plant biotechnology
3	Theoretical	Structure of DNA, RNA, proteins and enzymes in plants
4	Theoretical	DNA, RNA, protein and enzyme purification techniques
5	Theoretical	Molecular markers and their use in agriculture
6	Theoretical	Molecular diagnosis of plant pathogens
7	Theoretical	Structure of genes, methods used in gene transfer
8	Intermediate Exam	Midterm
9	Theoretical	Gene expression, regulation of gene expression in plants
10	Theoretical	Introduction to plant transformation methods
11	Theoretical	Plasmid vectors and properties
12	Theoretical	Plant transformation vectors and their features
13	Theoretical	Markers used in plant transformation vectors
14	Theoretical	Transgenic plant analysis
15	Theoretical	Genetically modified plants are used to designate methods.
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	8	3	154
Midterm Examination	1	10	1	11



Final Examination	1	9	1	10
Total Workload (Hours)				175
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Learn genetic characteristics of plants
2	Learn DNA-RNA, enzyme and protein purification techniques from plants
3	Learn molecular marker development and application techniques
4	Learn gene expression and transformation in plants
5	Write academic papers in the field of plant biotechnology

Programme Outcomes (Agricultural Biotechnology Master)

1	Students learn various techniques and evaluates resources about agricultural biotechnology
2	Make the necessary projects in agricultural biotechnology and to conduct a study of the basic level independently
3	Students learns how to conduct a scientific research and prepares themselves for the scientists in the direction of their ideals.
4	Students may reveal new ideas in social and scientific issues and can benefit from the ideas and produce something new winning independent and teamwork skills.
5	Students can use its products for the benefit of humanity, they can produce technology and collaborate with industry

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	5	5	3
P2	5	5	5	5	4
P3	4	5	5	5	5
P4	4	4	5	5	3
P5	3	3	4	4	1

