

# AGRIGULTURAL BIOTECHONOLGY

1	Course Title:	AGRIGULTURAL BIOTECHONOLGY	
2	Course Code:	TOHZ225	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	3.00	
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. AYDIN TÜRKEÇ	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Doç.Dr. Aydın Türkeç Uludağ Üniversitesi Mustafakemalpaşa Meslek Yüksekokulu Mustafakemalpaşa/BURSA aturkec@uludag.edu.tr 0224 613 3102	
17	Website:		
18	Objective of the Course:	Learning of the latest techniques in plant molecular biology and its effect in agricultural structure of Turkey	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Know about history and defination of agricultural biotechnology and its use
		2	Understand the importance of agricultural biotechnology in Turkey
		3	Study about molecular structure of DNA
		4	Know about princibles of gen isolation and cloning
		5	Know about fundamentals of plant transformation methods
		6	Know about transgenic plants
		7	Know about plant transformation technigues
		8	Learn about molecular markers and their applications
		9	
		10	
21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	Aims of lesson, introduction to agricultural biotechnology definitions, applications	Study on application of agricultural biotechnology	
2	Production of Global transgenic crops and improvement	Equipments and and instruments and their use	

3	DNA izolasyon tekniklerinin verilmesi	Molecular structure of the DNA and chromosomes		
4	Molecular structure of the gene and protein biosynthesis	DNA and protein biosynthesis		
5	methods of DNA isolation	Gene isolation methods		
6	Steps involved in gene cloning	components of gene cloning and their functions		
7	Aplication of agricultural biotechnology- advantages and limitations	Vectors for gene transfer		
8	Polymerase Chain Reaction (PCR) – procedure and applications	Applications of PCR		
9	Gene cloning and manipulation techniques	Preparation of plazmid DNA, restriction enzymes and electrophoresis		
10	Principles of gene transformation	Gene transformation thecniques		
11	Methods of gene transfer – indirect method of gene transfer	Agrobacterium - mediated gene transfer method		
12	Methods of gene transfer – direct methods of transformation	Particle bombardment /chemical method, electroporation, microinjection		
13	Transgenic plants- applications in crop improvement	Genetic engineering for insect , dieases and herbicide resistance		
14	Molecular markers and their applications	Applications of molecular markers		
22	Textbooks, References and/or Other Materials:	Bitki Biyoteknoloji (Genetik mühendisliği ve uygulamaları) Selçuk Üniversitesi Vakfı Yayınları 2001 Editörler: S		
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	3.00	42.00
Practicals/Labs		14	2.00	28.00
Self study and preperation		ISBN: 81-85167-63-5 B.	2.00	8.00
Homeworks		0	0.00	0.00
Projects		0	0.00	0.00
23	Assesment	0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		R 1	18.00	18.00
Others		0	0.00	0.00
Quiz		0	0.00	0.00
Final Exams		1	24.00	24.00
Total Work Load				120.00
Final Exam		1	60.00	4.00
Total work load/ 30 hr				4.00
ECTS Credit of the Course				4.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00		
Contribution of Final Exam to Success Grade		60.00		
Total		100.00		
Measurement and Evaluation Techniques Used in the Course				
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	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
ÖK2	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
ÖK3	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
ÖK4	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
ÖK5	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
ÖK6	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
ÖK7	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
ÖK8	4	3	2	2	5	3	3	3	3	3	2	2	4	3	2	3
LO: Learning Objectives    PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			