

PLANT TISSUE CULTURE TECHNIQUES

1	Course Title:	PLANT TISSUE CULTURE TECHNIQUES
2	Course Code:	TAR3303-Z
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	5
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	2.00
10	Laboratory (hour/week):	0
11	Prerequisites:	----
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. NAZAN DAĞÜSTÜ
15	Course Lecturers:	---
16	Contact information of the Course Coordinator:	ndagustu@uludag.edu.tr, 224 2941518, U.U. Field Crops Department, Faculty of Agriculture 16059 Görükle Campus Bursa
17	Website:	
18	Objective of the Course:	The objectives of courses are; to follow the new technologies and applications on agricultural biotechnology, get enough information on biotechnolgy, get experience on applications of agricultural biotechnology
19	Contribution of the Course to Professional Development:	It will be realized that the students who will work in the plant tissue culture laboratory have knowledge and experience on the subject.
20	Learning Outcomes:	
	1	No sterilization problems in the plant tissue culture laboratory
	2	Have the knowledge of how to plan tissue culture laboratory
	3	Have technical knowledge and education degree in tissue culture
	4	Gains experience in preparing the fattening medium
	5	Have knowledge about plant tissue culture methods
	6	Knows how to choose the right method in plant tissue culture techniques applications
	7	Learns the rules and practices that need to be considered while working in the laboratory
	8	Gains experience in putting this new technique into practice in the current field.

		9	It can work without any difficulty in a commercial plant tissue culture laboratory.		
		10	Can work on any research project		
21	Course Content:				
	Course Content:				
Week	Theoretical		Practice		
1	The points to be considered in the laboratory studies, the introduction of the departments where the plant tissue culture laboratory studies are carried out, the introduction of the tools, equipment and materials used in the laboratory		Issues to be considered in laboratory studies		
2	Chemicals used in the laboratory, Stock solutions, Preparation of the nutrient medium		Laboratory accidents		
3	Sterilization		Demonstration of the instruments and equipment of the departments in the tissue culture laboratory		
4	Isolation, inoculation and incubation of plant material		Demonstration of chemicals used in the laboratory		
5	Somaklonal varyasyon		Preparation of stock solution		
6	Somatic embryogenesis		Solution preparation in various concentrations		
Activites			Number	Duration (hour)	Total Work Load (hour)
9	Theoretical		14		
	Midterm exam		Midterm exam	2.00	28.00
Practicals/Labs			14	2.00	28.00
11	Self study and preparation		4	6.00	24.00
	Rapid Breeding Anther culture and		Student presentation		
	Homeworks		2	4.00	8.00
12	Microtiter Culture		Student presentation		
	Projects		0	0.00	0.00
12	Field Studies		0	0.00	0.00
14	Secondary metabolite production		Student presentation		
	Midterm exams		1	1.00	1.00
Others			4	6.00	24.00
Final Exams			1	1.00	1.00
Total Work Load					114.00
Total work load/ 30 hr					3.80
ECTS Credit of the Course					4.00

22	Textbooks, References and/or Other Materials:	<p>1. Bitki Biyoteknolojisi I Doku Kültürü ve Uygulamaları, 2001. M. Babaoğlu, E. Gürel, S. Özcan. S. U. Vakfı Yayınları, Konya. pp.1-456.</p> <p>2. Bitki Biyoteknolojisi, 1999. R. Hatipoğlu, Ç.Ü. Ziraat Fakültesi Genel Yayın No: 190 Ders Kitapları Yayın No:A-58.</p> <p>3. Plant Propagation by Tissue Culture. Handbook and Directory of Commercial Laboratories, 1984. Eds. E.F. George and P.D. Sherrington, Exegetics Ltd., England.</p> <p>4. Handbook of Plant Cell Culture, Volume 1. Techniques for Propagation and Breeding, 1983. Eds. D.E. Evans, W.R. Sharp, P.V. Ammirato, Y. Yamada Macmillan Publishing Co. New York, pp. 1-970.</p> <p>5. Experiments in Plant Tissue Culture, 1982. J.H. Dodds and L.W. Roberts, Cambridge University Press, UK.</p> <p>6. Cell Culture and Somatic Cell Genetics of Plants, Volume 1 Laboratory Procedures and Their Applications, 1984. Ed. I.K. Vasil. Academic Press, Inc. New York, pp. 1-825.</p> <p>7. Plant Cell Culture A Practical Approach, 1985. Ed. R.A. Dixon, IRL Press Limited, England, pp. 1-236.</p> <p>8. Plant Cell and Tissue Culture A laboratory Manual, 1982. Eds. J.Reinert, M.M. Yeoman, Springer-Verlag, pp. 1-83.</p>
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23	Assesment
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	20.00
Quiz	0	0.00
Home work-project	1	20.00
Final Exam	1	60.00
Total	3	100.00
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	Bursa Uludağ University is evaluated according to the principles of the Associate and Undergraduate Education Regulation	

24	ECTS / WORK LOAD TABLE
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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	2	2	2	3	2	2	2	2	2	3	0	0	0	0	0	0
ÖK2	2	2	3	3	2	2	2	1	1	1	0	0	0	0	0	0
ÖK3	2	2	2	3	3	3	3	2	2	2	0	0	0	0	0	0
ÖK4	1	2	2	2	2	1	3	3	2	1	0	0	0	0	0	0

ÖK5	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
ÖK6	2	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0
ÖK7	2	2	2	2	3	1	2	2	2	2	0	0	0	0	0	0
ÖK8	2	2	2	2	2	1	2	1	1	1	0	0	0	0	0	0
ÖK9	1	1	1	2	2	2	2	1	1	1	0	0	0	0	0	0
ÖK10	2	2	2	1	1	1	2	2	2	2	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			