SOILLESS AGRICULTURAL										
1	Course Title:	SOILLES	SS AGRICULTURAL							
2	Course Code:	SBYS41	6							
3	Type of Course:	Optional								
4	Level of Course:	Short Cy	vcle							
5	Year of Study:	2								
6	Semester:	4								
7	ECTS Credits Allocated:	3.00								
8	Theoretical (hour/week):	1.00								
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.	Birol Taş							
15	Course Lecturers:	Prof. Dr. Haluk BAŞAR								
16	Contact information of the Course Coordinator:	melik@uludag.edu.tr, 02242942352, U.Ü.Teknik Bilimler Meslek Yüksekokulu B Blok-Görükle Kampüsü/Bursa								
17	Website:									
18	Objective of the Course:	To have information and experience about how to manage and grow plants in soilless culture and hydroponics								
19	Contribution of the Course to Professional Development:									
20	Learning Outcomes:									
		1	To learn advantages and disadvantages of most common soilless culture methods used in all over the World.							
		2	To have general information about usually used methods such as NFT (Nutrient Film Technique) and rockwool.							
		3	To have information on nutrition of crops in soilless culture, preparation of nutrient solution and control of pH and EC							
		4	To prepare nutrient solutions containing certain amounts of nutrient elements							
		5								
		6								
		7								
		8								
		9								
		10								
21	Course Content:									
	Course Content:									
Week	Theoretical		Practice							
1	Comparison of soil and soilless grow physical properties in preparation of media		Introduction to soilless culture laboratory.							

2	Some basic concepts related to physicharacterization of growing medias, properties of growing medias in physicharacterization, indirect and direct properties affecting plant growth	certain sical	N	Moisture determination in growing medias							
3	Significance of air capacity in growin importance of oxygen in growing me oxygen and propagation in plants		A	Ash and organic matter determination in growing medias							
4	Meaning of salt content and pH value growing media	e in	С	Chemical extraction of growing medias, methods 1 and 2							
5	Properties of organic substrates use growing medias	d as	С	Chemical extraction of growing medias, methods 3 and 4							
6	Properties of organic substrates use growing medias	d as		Chemical extraction of gone methods	rowing medias and	d evaluation of					
7	Properties of organic substrates use growing medias	d as		Chemical extraction of gone methods	rowing medias and	d evaluation of					
8	Midterm exam and repeating course	S	re	epeating courses							
9	Properties of inorganic substrates us growing medias		С	Chemical extraction of gnethods	growing medias, eva	aluation of the					
10	Properties of inorganic substrates us growing medias	sed as	S	lieve analysis and eval	uation of the results	3					
11	Hydroponic methods; fluid (non aggr hydroponic methods such as nutrien technique (NFT), modified NFT, aero	t film	w	Physical analysis of growing medias ( density, volum weight, total pore volume, water and air distribution, amount of water retention at different suction values)							
12	Midterm exam and repeating course	S		Physical analysis of growing medias ( density, volum weight, total pore volume, water and air distribution,							
				NI b o "							
Activit	tes			Number	Duration (hour)	Load (hour)					
	tes  Regithod, perlite bag culture		I	number 14	1.00						
Theore			I		, ,	Load (hour)					
Theore	peathod, perlite bag culture		I I=	14	1.00	Load (hour)					
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Theore Practica Self stu Homew Project	pathod, perlite bag culture als/Labs dy and preperation vorks		I.	14 14 14 0	1.00 2.00 1.00 0.00	Load (hour)  14.00  28.00  14.00  0.00					
Theore Practica Self stu Homew Project Field S	pathod, perlite bag culture als/Labs dy and preperation vorks			14 14 0 Hydroponic Food Prod	1.00 2.00 1.00 0.00 2.000 1.00 Resh.	14.00 28.00 14.00 0.00 <b>B</b> @Oth edition					
Theore Practice Self stu Homew Project Field S Midtern	mathod, perlite bag culture  als/Labs  dy and preperation  vorks  tudies  exams	· · · · · · · · · · · · · · · · · · ·		14 14 14 0 Hydroponic Food Prod 0	1.00 2.00 1.00 0.00 2.00 0.00 2.00 0.00	14.00 28.00 14.00 0.00 800th edition					
Theore Practice Self stu Homew Project Field S Midtern Others	neathod, perlite bag culture als/Labs udy and preperation vorks tudies n exams			14 14 0 Hydroponic Food Proc 0 2. Preston, UK. 1988.	1.00 2.00 1.00 0.00 2.00ion. H.M. Resh. 0.00	Load (hour)  14.00  28.00  14.00  0.00  Booth edition  0.00  20.00					
Theore Practice Self stu Homew Project Field S Midtern Others Final E	neathod, perlite bag culture als/Labs udy and preperation vorks tudies n exams			14 14 0 Hydroponic Food Proc 0 2. Preston, UK. 1988.	1.00 2.00 1.00 0.00 2.000n. H.M. Resh. 0.00 10.00	Load (hour)  14.00  28.00  14.00  0.00  8.00th edition  0.00  20.00  0.00					
Theore Practica Self stu Homew Project Field S Midtern Others Final E Total W	mathod, perlite bag culture als/Labs dy and preperation vorks tudies exams			14 14 0 Hydroponic Food Proc 0 2. Preston, UK. 1988.	1.00 2.00 1.00 0.00 2.000n. H.M. Resh. 0.00 10.00	Load (hour)  14.00  28.00  14.00  0.00  5.00  5.00					
Theore Practic Self stu Homew Project Field S Midtern Others Final E Total W	als/Labs  Idy and preperation  Vorks  Studies  h exams  Vork Load	NUMBE		14 14 0 Hydroponic Food Prod 0 2. Preston, UK. 1988. 0	1.00 2.00 1.00 0.00 2.000n. H.M. Resh. 0.00 10.00	Load (hour)  14.00  28.00  14.00  0.00  Booth edition  0.00  20.00  0.00  5.00  89.00					
Theore Practica Self stu Homew Project Field S Midtern Others Final E Total W TERMW ECTS (	als/Labs  als/Labs  dy and preperation  vorks  tudies  exams  vork Load	R	_	14 14 0 Hydroponic Food Prod 0 2. Preston, UK. 1988. 0 1	1.00 2.00 1.00 0.00 2.000n. H.M. Resh. 0.00 10.00	Load (hour)  14.00  28.00  14.00  0.00  8.00th edition  0.00  20.00  0.00  5.00  89.00  2.97					
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Theore Practice Self stu Homew Project Field S Midtern Others Final E Total W ECTS ( Quiz Home v Final E Total Contrib Succes	mathod, perlite bag culture  als/Labs  dy and preperation  vorks  tudies  exams  vork Load  carrivities  Credit of the Course  work-project  xam  oution of Term (Year) Learning Activities  Grade	0 1 1 4 ees to	0 1 5 1 5	14 14 0 Hydroponic Food Prod 0 2. Preston, UK. 1988. 0 1 EIGHT .00 5.00 0.00 0.00 0.00	1.00 2.00 1.00 0.00 2.000n. H.M. Resh. 0.00 10.00	Load (hour)  14.00  28.00  14.00  0.00  8 00th edition  0.00  20.00  0.00  5.00  89.00  2.97					

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	2	0	0	0	3	0	0	0	0	0	0	5	3	0	0	0
ÖK2	2	0	0	0	3	0	0	0	0	0	0	5	3	0	0	0
ÖK3	2	0	0	0	3	0	0	0	0	0	0	5	3	0	0	0
ÖK4	2	0	0	0	3	0	0	0	0	0	0	5	3	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib 1 very low ution Level:			2 low			3 Medium			4 High			5 Very High				