SOILLESS AGRICULTURAL

1	Course Title:	SOILLESS AGRICULTURAL	
2	Course Code:	SBYS416	
3	Type of Course:	Optional	
4	Level of Course:	Short Cycle	
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
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Comparison of soil and soilless growing, physical properties in preparation of growing media	Introduction to soilless culture laboratory.

2	Some basic concepts related to physical characterization of growing medias, certain properties of growing medias in physical characterization, indirect and direct physical properties affecting plant growth	Moisture determination in growing medias
3	Significance of air capacity in growing media, importance of oxygen in growing media, oxygen and propagation in plants	Ash and organic matter determination in growing medias
4	Meaning of salt content and pH value in growing media	Chemical extraction of growing medias, methods 1 and 2
5	Properties of organic substrates used as growing medias	Chemical extraction of growing medias, methods 3 and 4
6	Properties of organic substrates used as growing medias	Chemical extraction of growing medias and evaluation of the methods
7	Properties of organic substrates used as growing medias	Chemical extraction of growing medias and evaluation of the methods
8	Midterm exam and repeating courses	repeating courses
9	Properties of inorganic substrates used as growing medias	Chemical extraction of growing medias, evaluation of the methods
10	Properties of inorganic substrates used as growing medias	Sieve analysis and evaluation of the results
11	Hydroponic methods; fluid (non aggregate) hydroponic methods such as nutrient film technique (NFT), modified NFT, aeroponics	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 courses	Physical analysis of growing medias (density, volum weight, total pore volume, water and air distribution, amount of water retention at different suction values)

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	1.00	14.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	1.00	14.00
Homeworks	0	0.00	0.00
Projects	4	2.00	8.00
Field Studies	0	0.00	0.00
Midterm exams	2	10.00	20.00
Others	0	0.00	0.00
Final Exams	1	5.00	5.00
Total Work Load			89.00
Total work load/ 30 hr			2.97
ECTS Credit of the Course			3.00

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Quiz	0	0.00
Home work-project	1	15.00
Final Exam	1	50.00
Total	4	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

24	**ECTS / WORK LOAD TABLE**

method, perlite bag culture
Hydroponic Food Production. H.M. Resh. 5 th edition. Ltd. Preston, UK. 1988.

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	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																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**			**4 High**			**5 Very High**				