HYDROPONICS

1	Course Title:	HYDROPONICS	
2	Course Code:	GBUP221	
3	Type of Course:	Optional	
4	Level of Course:	Short Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. SERAP KIRMIZI	
15	Course Lecturers:	Dr. Hüseyin Can Alpsoy	
16	Contact information of the Course Coordinator:	Dr. Hüseyin Can Alpsoy hcan@uludag.edu.tr 0(224)7736069	
17	Website:		
18	Objective of the Course:	Fundamental information will be given on soilless agricultural practices developed in order to eliminate problems arising from soil in greenhouse cultivation and to obtain higher quality and higher yield under controlled conditions.	
19	Contribution of the Course to Professional Development:	To have information on new techniques.	
20	Learning Outcomes:		
		1	To have knowledge about past, present and future of soilless agriculture
		2	To know the definition, advantages and disadvantages of soilless agriculture
		3	To be able to learn the possibilities of soilless agriculture in greenhouses and the types of soilless agriculture
		4	Learning the preparation and calculation of nutrient solutions used in soilless agriculture
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21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	The definition of soilless culture, history and status in the world and Turkey	

2	Reasons why soilless agriculture finds wide use in greenhouse cultivation	
3	Advantages and disadvantages of soilless agriculture	
4	Soilless cultivation techniques and classification	
5	Media used in solid medium technique and their properties	
6	Preparation of greenhouse for soilless agriculture	
7	Water culture methods used in soilless agriculture	
8	Water culture methods used in soilless agriculture (cont.)	
9	Comparison of solid culture and water culture methods	
10	Definition of nutrients to be used in soilless agriculture	
11	Calculation of nutrient solutions to be used in soilless agriculture	
12	PH, EC, temperature and oxygen contents of nutrient solutions	
13	Future of soilless agriculture	
14	Video footage related to soilless agriculture	

22	Textbooks, References and/or Other	Sevgican A., 2003. Örtü Altı Yetiştiriciliği (Cilt II, Toprakız

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Midterm Exam	1	40.00	
Self study and preperation	14	2.00	28.00
Quiz	0	0.00	
Homeworks	0	0.00	0.00
Home work-project	0	0.00	
Projects	0	0.00	0.00
Final Exam	1	60.00	
Field Studies	0	0.00	0.00
Total	2	100.00	
Midterm exams	1	14.00	14.00
Contribution of Term (Year) Learning Activities to		40.00	
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Contribution of Final Exam to Success Grade		60.00	
Total Work Load			104.00
Total		100.00	
Total work load/ 30 hr			3.00
Measurement and Evaluation Techniques Used in the			
ECTS Credit of the Course			3.00

TERM LEARNING ACTIVITIES	**NUMBE**	**WEIGHT**

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	2	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0
ÖK2	2	1	3	2	1	2	2	2	3	2	0	0	0	0	0	0
ÖK3	2	1	1	1	1	2	2	2	3	1	0	0	0	0	0	0
ÖK4	1	1	0	0	0	1	2	1	1	4	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**