PLANT NUTRITION AND FERTILIZATION

1	Course Title:	PLANT NUTRITION AND FERTILIZATION
2	Course Code:	SBYZ204
3	Type of Course:	Compulsory
4	Level of Course:	Short Cycle
5	Year of Study:	1
6	Semester:	2
7	ECTS Credits Allocated:	2.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	-
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Öğr. Gör. Dr. YILMAZ DORUK
15	Course Lecturers:	Öğr.Gör.Dr.Yılmaz DORUK
16	Contact information of the Course Coordinator:	yzdoruk@uludag.edu.tr, 02242942374, U.Ü.Teknik Bilimler Meslek Yüksekokulu B Blok-Görükle Kampüsü/Bursa
17	Website:	
18	Objective of the Course:	To learn the basic principles of plant nutrition, to get detailed informations on plant nutrients ,their functions on plants , interactions with each others.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Explaining effects of factors to fertilization and finding relationships among them
	2	Identification of symptoms on defienciency and eccess of plant nutrition elements in hort and greenhouse plants, gaining ability on how to get precaution incase of defienciency and excess stıations.
	3	Learning Application forms, timing, and amount of fetilization, and gaining ability on application of fertilization of plants.
	4	Data collection, calculation, and interpretation for preperation of fertilization program
	5	Preperation of specific fertilization program for hort and greenhouse plant
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice

1	Introduction The history of plant nutrition. Essential plant nutrients Basic principles on plant nutrient uptakes. Concept of Plant nutrition and fertilization, Classification of fertilizers	
2	Compost, urban waste, blood dust, leather dust, powder horns and nails, guano, green manure, green manure crops and cultivation systems	
3	Effective factors on organic matter and nitrogen amount in the green manuring. The effect of green manuring on the soil physical, chemical and biological properties. Biological fertilizer, the classification of biological fertilizers,-application methods, biological N fixation and related species of bacteria, mycorrhizal fungi	
4	Nitrogen uptake on plant nutrition Its metabolism Its interactions with the other plant nutrients , deficiency, toxicity and their eliminations	
5	Phosphorus uptake on plant nutrition Its metabolism Its interactions with the other plant nutrients , deficiency, toxicity and their eliminations	
6	Potassium uptake on plant nutrition Its metabolism Its interactions with the other plant nutrients , deficiency, toxicity and their eliminations	
9	Iron and Magnesium uptake on plant nutrition Its metabolism Its interactions with the other plant nutrients , deficiency, toxicity and their eliminations	
10	Copper, Molibdenium, Boron Chlore and Zinc interactions with the other plant nutrients , deficiency, toxicity and their eliminations	
11	Irrigation and application advantages / disadvantages	
12	fertilization program, timing of fertilizatin in fiort and greenhose plant	
14	Methods of fertilization	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	1.00	14.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	2	6.00	12.00
Others	0	0.00	0.00
Final Exams	1	8.00	8.00
Total Work Load			62.00
Total work load/ 30 hr			2.07
ECTS Credit of the Course			2.00

22	Textbooks, References and/or Other Materials:	Güneş, A., Alpaslan, M. ve İnal, A. 2004. Bitki Besleme ve Gübreleme. A.Ü. Ziraat Fakültesi yayın No: 1539, Ders Kitabı: 492. Kacar, B. ve Katkat, V. 2006. Bitki Besleme. Nobel Yayın Kacar, B. ve Katkat, V. 1999. Gübreler ve Gübreleme Tekniği. Vipaş A.Ş. Bursa
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	2	50.00
Quiz	0	0.00
Home work-project	0	0.00

Final Exam	1	50.00
Total	3	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**

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	0	0	5	0	0	0	2	0	0	4	0	0	3	0	1	0
ÖK2	0	0	5	0	0	0	2	0	0	4	0	0	3	0	1	0
ÖK3	0	0	5	0	0	0	2	0	0	4	0	0	3	0	1	0
ÖK4	0	0	5	0	0	0	2	0	0	4	0	0	3	0	1	0
ÖK5	0	0	5	0	0	0	2	0	0	4	0	0	3	0	1	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**				**4 High**			**5 Very High**			