PLANT PHYSIOLOGY

1	Course Title:	PLANT PHYSIOLOGY	
2	Course Code:	TPR1902	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	1	
6	Semester:	2	
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. A.VAHAP KATKAT	
15	Course Lecturers:	Doç.Dr. Hakan ÇELİK	
16	Contact information of the Course Coordinator:	vahap@uludag.edu.tr, 0 224 2941530, Uludağ Üniversitesi Ziraat Fakültesi Toprak Bilimi ve Bitki Besleme Bölümü	
17	Website:		
18	Objective of the Course:	To explain the occurrence of physiological events in plants, maintenance and termination of basic problems by the laws of physics and chemistry for training of superior quality and quantity of plants. To examine the physiological processes of each in plants.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Can explain the events during the lifes of plants and changes in the active substances that effects these events.
		2	Can explain the problems of germination, growth and development in a plant. a result of changes in substances.
		3	Can explain the interest of encountered problems and plant physiology in plant breeding.
		4	Can evaluate the effectiveness of various agricultural practices
		5	Can explain the uptake and trasportation of the water in plants
		6	Can explain the ways of losing water in plants.
		7	Can explain the uptake methods of plant nutrients.
		8	Can explain the mechanisms of transportation of plant nutritients in the plant.
		9	Can explain the kinds of photosynthesis metabolisms.
		10	Can explain the transportation of photosynthesis products in the plants.
21	Course Content:		
	Course Content:		
Week	Theoretical	Practice	

1	General information about plant cells and the cell structures, structures of cell organels and their functions in cell.	
2	Structure and quantities of water, events that took place in the transport of water.	
3	Water potential, factors of forming the water potential of the cell, water potential difference and water input and output in cell, relation between turgor pressure and volume changes in cell.	
4	Water in soil and water availability in soil. Rooth system which plays role in collection and transportation of water, rooth structure, transportation of photosyntetic products to the rooth system, water uptake and its transportation to the rooth system. Structure of xylem and the mechanisms of transportation of the water into xylem.	
5	Transpration mechanisms, transpration rate, unit and speed, stomatal structure, size and distributions in plants, opening and closing mechanisms of stomata and influence factors of these machanisms.	
6	Transpiration determination methods, reduction methods of transpiration and losing water in liquid form.	
7	Soil and plant relations, ion absorbsion and changes in soil, soil pH , rooth growth and nutrient availability, nutient absorbsion sites of rooth and transportation of the nutrients to the rooth domain.	
8	General evaluation of the course and Midterm exam.	
9	Absorpsion of nutrients by rooths, basic principles of nutrient absorpsion, the effectiveness of mycorrhiza fungus in absorption of nutrients.	
10	Transport of nutrients in cell membranes radial transport of nutrients to xylem and looding to xylem, taking nutrients by plant leaves.	
11	Definition of photosyntesis, the importance and history, pigmets which play role in the formation of photosyntesis, light energy and properties which play roles in photosyntesis.	
12	Principal reactions that occur in photosyntesis cyclic and acyclic phosphorilation, carbondioxide assimilation in C3,C4 and CAM plants, the synthesis of starch and saccarose, affecting factors of photosyntesis.	
13	Transport of the products of photosyntesis phloem transport mechanisms, the distribution of photosyntetic products in plants.	
14	Respiration in plants and its significance, comparison of respiration and photosyntesis, factors that affect respiration.	

22	Textbooks, References and/or Other Materials:	Kacar, B., Katkat, A.V. ve Öztürk, Ş. 2010. BitkiFizyolojisi. Nobel Yayın No: 848, 4. Baskı, s.556, Ankara. Salisbury, F.B. and C.W. Ross (1992). Plant Physiology. 4th ed. pp. 1-682. Wadsworth Publishing Company, Belmont, California, U.S.A. Taiz, L. and E. Zeiger (1998). Plant Physiology. 2nd ed. pp. 1-792. Sinauer Associates, Inc., Publishers, Sunderland, Massachusetts, U.S.A
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	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		

24 ECTS / WORK LOAD TABLE

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	1	24.00	24.00
Others	0	0.00	0.00
Final Exams	1	24.00	24.00
Total Work Load			114.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

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	5	0	2	0	0	0	0	2	2	5	0	0	2	0	0	0
ÖK2	5	0	2	2	0	0	2	2	2	5	0	0	2	0	0	0
ÖK3	5	0	2	2	0	0	2	2	2	5	0	0	2	0	0	0

ÖK4	5	0	2	2	0	0	2	2	2	5	0	0	2	0	0	0
ÖK5	5	0	2	3	0	0	2	2	2	5	0	0	2	0	0	0
ÖK6	5	0	3	3	0	0	2	2	2	5	0	0	0	0	0	0
ÖK7	5	0	0	0	0	0	0	2	2	5	0	0	2	0	0	0
ÖK8	5	0	0	0	0	0	0	2	2	5	0	0	2	0	0	0
ÖK9	5	0	0	0	0	0	0	3	2	5	0	0	2	0	0	0
ÖK10	5	0	0	0	0	0	0	2	2	5	0	0	2	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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