



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Applied Plant Physiology							
Course Code		TBY202		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	4	Workload	100 ( <i>Hours</i> )	Theory	2	Practice	0	Laboratory	2
Objectives of the Course		The main objectives of this course; • To have knowledge about the structure , physiology and metabolism of plants, • To have knowledge about growth and development of plants, • Laboratory of the course aids to establish a correlation among theoretical knowledge and agriculture.							
Course Content		Definition of Plant Physiology. Structure of the plant cells. Enzymes and their functions. Plant cell and water relations. Transpiration, Photosynthesis, Growth in plants.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion					
Name of Lecturer(s)		Assoc. Prof. Yelda EMEK							

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Final Examination	1	110

### Recommended or Required Reading

1	Kacar B, Katkat AV, Öztürk Ş (2008) Plant Physiology. Nobel Press
2	Türkan İ (2008) Plant Physiology. Palme Yayıncılık. (Taiz L. Zeiger E. translated from)
3	Sinha RK (2003) Modern Plant Physiology. Alpha International

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition of Plant Physiology, Structure of the plant cell
	Laboratory	Material introduction, laboratory rules
	Preparation Work	Course book, additional advised sources
2	Theoretical	Enzymes and their functions
	Laboratory	Diffusion
	Preparation Work	Course book, additional advised sources
3	Theoretical	Plant cell and water relations
	Preparation Work	Course book, additional advised sources
4	Theoretical	Uptake and transport of water in plant cells
	Laboratory	Elemental and water analysis on plants
	Preparation Work	Course book, additional advised sources
5	Theoretical	Transpiration
	Laboratory	Transpiration
	Preparation Work	Course book, additional advised sources
6	Theoretical	Plant nutrient elements and their uptake and transportation
	Laboratory	Ion selectivity
	Preparation Work	Course book, additional advised sources
7	Theoretical	Photosynthesis
	Laboratory	Photosynthesis and pigments
	Preparation Work	Course book, additional advised sources
8	Theoretical	Transport of photosynthesis products
	Laboratory	Organic substances (Carbohydrates)
	Preparation Work	Course book, additional advised sources
9	Theoretical	Nitrogen and sulfur assimilation
	Preparation Work	Course book, additional advised sources
10	Theoretical	Organic substances (Proteins)
	Laboratory	Organic substances (Proteins, Lipids)



10	Preparation Work	Course book, additional advised sources
11	Theoretical	Respiration in plants
	Laboratory	Respiration and fermentation
	Preparation Work	Course book, additional advised sources
12	Theoretical	Growth in plants
	Laboratory	Growth in plants
	Preparation Work	Course book, additional advised sources
13	Theoretical	Plant growth movements
	Laboratory	Plant movements
	Preparation Work	Course book, additional advised sources
14	Theoretical	Plant hormones and their functions
	Laboratory	Plant hormones
	Preparation Work	Course book, additional advised sources
15	Theoretical	Plant stress physiology
	Laboratory	Plant stress physiology
	Preparation Work	Course book, additional advised sources
16	Preparation Work	Course book, additional advised sources
	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	2	42
Laboratory	15	1	2	45
Final Examination	1	12	1	13
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	Having knowledge about plant cell structure and functions of the organelles.
2	Having knowledge about the importance of the enzymes that has a role in plant cell reactions.
3	Having knowledge about the importance of the water in plant life.
4	Learns the roles of plant nutrient elements.
5	Understands the importance of the photosynthesis for plants and other living organisms.
6	Understands the growth and growth movements of the plants.

### Programme Outcomes (Agricultural Biotechnology)

1	To be able to develop skills in identifying, modeling and solving problems in agricultural biotechnology
2	To be able to synthesize life and engineering sciences for the effective resource planning of agricultural biotechnology applications
3	To be able to interpret about living organisms structure, metabolic and physiological processes in order to propose biotechnological solutions to the agricultural problems
4	To be able to analyze genomic, metabolomic and proteomic information via bioinformatic tools.
5	To have the ability to analyze collected data and interpret the results.
6	To have the ability of individual working ability and to make independent decisions, to work in inter-disciplinary and interdisciplinary teamwork, to communicate by expressing their ideas orally and in writing, clearly and concisely
7	To have the awareness of professional liabilities and ethics
8	To be able to follow current national and international problems

### Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6
P1	5	5	5	5	5	5
P2	5	5	5	5	5	5
P3	5	5	5	5	5	5
P4	5	5	5	5	5	5



P5	3	3	3	3	3	3
P6	4	4	4	4	4	4
P7	5	5	5	5	5	5
P8	5	5	5	5	5	5

