



AYDIN ADNAN MENDERES UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
FIELD CROPS
FIELD CROPS
FIELD CROPS MASTER
COURSE INFORMATION FORM

Course Title	Stress Physiology in Field Crops and Selection Criterias								
Course Code	ZTB524	Course Level			Second Cycle (Master's Degree)				
ECTS Credit	7	Workload	176 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	The response of field crops to abiotic stress conditions and the evaluation of resistant mechanisms in terms of plant morphology and physiology. To determine breeding methods and selection criteria used for improving stress tolerant cultivar varieties.								
Course Content	The definition of abiotic stress factors and the effect of stress on plant growth and photosynthesis, the cellular perception of the stress, the response and adaptation mechanisms of plants against abiotic stress, plant breeding methods and selection criterias to improve stress tolerant varieties.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Project Based Study, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Pessaraki, M. 2002. Physiological responses of Cotton (<i>Gossypium hirsutum</i> L.) to salt stress. In: Handbook of plant and Crop Physiology, 2nd Edition, Revised and Expanded. Ed. By M. Pessaraki. Pp. 681-696.
2	Kacar, B., Katkat, V., Öztürk, Ş. 2002. Bitki Fizyolojisi. Vıpaş AŞ Yayın No: 74. Bursa.
3	Taiz, L. And Zeiger, E. 1987. Plant Physiology. The Benjamin /Cummings Publishing Company, Inc.
4	Nilsen, E.T., and Orcutt, D.M. 1996. The physiology of plants under stress. John Wiley & Sons Inc. New York

Week	Weekly Detailed Course Contents	
1	Theoretical	The definition of abiotic stress factors and the effect of stress on plant growth
2	Theoretical	Plant water relationship, water transport in plant
3	Theoretical	The effect of water stress on photosynthesis
4	Theoretical	Adaptation mechanisms of plants against water stress
5	Theoretical	Cellular perception of water stress and function of drought stress inducible genes.
6	Theoretical	The production of key enzymes for Osmolyte and Antioxidant biosynthesis against to water stress.
7	Theoretical	The selection criterias used for improving drought stress tolerant varieties.
8	Theoretical	The plant breeding methods to improve water stress tolerant varieties
9	Intermediate Exam	Midterm
10	Theoretical	The effects of salt stress on plants
11	Theoretical	Tolerance mechanisms developed by plants against to salt stress, the mechanisms of Na ⁺ influx and efflux in plants.
12	Theoretical	The selection criterias and breeding methods used for improving salt stress tolerant varieties.
13	Theoretical	The effect of high and low temperature on plants
14	Theoretical	Term Project presentation
15	Theoretical	Term Project presentation
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Assignment	2	24	0	48
Term Project	3	0	20	60



Quiz	2	0	1	2
Midterm Examination	1	8	1	9
Final Examination	1	14	1	15
Total Workload (Hours)				176
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To be able to comprehend the basic information about stress physiology
2	To be able to comprehend the effect of abiotic stress on plant growth
3	To be able to comprehend the effect of abiotic stress on photosynthesis
4	To be able to comprehend the adaptation mechanisms of plants against abiotic stress
5	To be able to comprehend the plant breeding methods and selection criteria to improve stress tolerant varieties, the interpretations of results

Programme Outcomes (Field Crops Master)

1	To be able to improve and deepen the level of expertise in field crops on the basis of the departments licenses qualifications.
2	To be able to recognize the subjects related to field crops, to be able to solve these and make interpretation.
3	To be able to have the skills of acting independently, to have power to decide and to create.
4	To be able to work in teams between departments
5	To be able to give briefing about latest information of Field Crops in written, oral and visual ways.
6	To be able to take responsibility for developing the new approaches and to formulate a solution facing unforeseen complex situations of applications,
7	To be able to defend the original opinions in both Turkish and in foreign languages by using these languages and communicating effectively.
8	To be able to contribute to science by producing knowledge for the aim of improving quality, efficiency and sustainability
9	To be able to apply breeding methods in order to improve new varieties for Field Crops.
10	To be able to maintain and select the appropriate statistical methods within the framework of the study, evaluation of scientific ethics; to convert the results into a report/dissertation and to offer them by producing scientific publications.

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

	L1	L2	L3	L4	L5
P1	3	5	5	4	5
P2	3	5	4	4	5
P3	5	5	4	3	5
P4	5	5	4	4	4
P5	5	5	5	5	5
P6	5	5	5	5	5
P7	5	5	5	5	5
P8	5	5	5	5	5
P9	5	5	5	5	5
P10	5	5	5	5	5

