



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Fertilizers and Fertilization							
Course Code		TBB304		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	4	Workload	100 (<i>Hours</i>)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		The objectives of the course are to give information about the concepts of fertilizer (chemical, organic) and fertilization. Additionally fertilizer types, their product methods, their raw materials used in production processes, calculations of applied fertilizer amounts and application methods are also subjects of the course							
Course Content		Introduction to fertilizer and fertilization concepts. Classification of organiz and chemical fertilizers. Production methods of fertilizers. Fertilization methods. Calculation of the amount of fertilizers applied.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study, Problem Solving					
Name of Lecturer(s)		Prof. Mehmet Ali DEMİRAL							

Prerequisites & Co-requisities

Prerequisite	TBB204
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Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading

1	Gübreler ve Gübreleme Tekniği. Burhan Kacar, Vahap Katkat. Vipaş A.Ş., 1999. ISBN. 975-564-084-3.
2	Gübre Analizleri, Burhan Kacar, Cihat Kütük. Nobel Yayıncılık. 2010. ISBN. 978-605-395-306-7.
3	Bitki Fizyolojisi. Burhan Kacar, Vahap Katkat, Şule Öztürk. 2002. Nobel Yayıncılık. ISBN. 978-975-591-833-4.
4	Bitki Besleme. Burhan Kacar, Vahap Katkat. 1998. Vipaş Yayınları. ISBN: 975-564-068-1.

Week	Weekly Detailed Course Contents	
1	Theoretical	Description of fertilizer and fertilization concepts. Effect of plantal factors affecting fertilization.
	Practice	Power point presentation.
2	Theoretical	Effects of environmental factors on fertilization.
	Practice	Power point presentation.
3	Theoretical	Production techniques of manure. Its maturation and storage.
	Practice	Power point presentation.
4	Theoretical	Production techniques of other organic materials used in agriculture.
	Practice	Daily visit to farm.
5	Theoretical	Green fertilizers and green fertilization concepts.
	Practice	Laboratory work.
6	Theoretical	Biofertilizers and their usage in agriculture.
	Practice	Laboratory work.
7	Theoretical	Introduction to chemical fertilizers.
	Practice	Laboratory work.
8	Intermediate Exam	Midterm Exam
9	Theoretical	Nitrogen containing chemical fertilizers.
	Practice	Daily visit to farm.
10	Theoretical	Phosphorus and potassium containing chemical fertilizers.
	Practice	Calculation of the amount of fertilizers applied.
11	Theoretical	Calcium and magnesium containing chemical fertilizers.



11	Practice	Calculation of the amount of fertilizers applied.
12	Theoretical	Sulphur containing chemical fertilizers.
	Practice	Calculation of the amount of fertilizers applied.
13	Theoretical	Micro element containing chemical fertilizers.
	Practice	Calculation of the amount of fertilizers applied.
14	Theoretical	Fertilization methods.
	Practice	Calculation of the amount of fertilizers applied.
15	Theoretical	
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	1	0	8	8
Midterm Examination	1	0	16	16
Final Examination	1	0	20	20
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to compare the factors which consisted of plantal, environmental and economic factors under optimum fertilization conditions
2	To be able to compare fertilization methods.
3	To be able to explain interactions among fertilizer, soil and plant.
4	To be able to identify organic and chemical fertilizers
5	To be able to use technical knowledge and data in fertilization suggestions

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
P1	4	4	4	3	4
P2	3	5	3	4	3
P3	4	4	3	5	4
P4	3	3	4	4	4
P5	4	3	3	3	3
P6	4	5	4	4	3
P7	5	4	3	3	3
P8	4	5	3	4	4

