



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		New Approaches in Soil Fertility							
Course Code		ZTO603		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	196 (<i>Hours</i>)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		Being able to learn new approaches in soil fertility							
Course Content		Soil properties and how they influence nutrient mobility and bioavailability; soil testing, interpretation, and making fertilizer recommendations to enhance plant growth and development, macronutrients: roles in plants, common deficiency symptoms, macronutrients in soils, important transformations and loss mechanisms, fertilizers, and their management practices will be held.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Discussion, Case 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	Toprak Verimliliği ve Gübreleme. 2002. Nuri Güzel, Kemal Yalçın Gülüt, Gökhan Büyük, ÇÜ, Ziraat fakültesi Genel Yayın No:A-80,
2	Soil Fertility Management for Sustainable Agriculture, 1997. Rajendra Prasad, James F. Power CRC Press. Boca Raton, Fla. US.
3	Soil Fertility, Henry D. Foth, Boyd G. Ellis, 1996 - Technology & Engineering
4	Marschner, H. 1995. Mineral Nutrition of Higer Plants, Academic Pres, Second Edition.
5	The Nature and Properties of Soils. 2002. Brady, Nyle C., 13th Ed. MacMillan Publishing Company

Week	Weekly Detailed Course Contents	
1	Theoretical	Historical aspects on plant nutrition and soil fertility
	Preparation Work	Literature research
2	Theoretical	Crop growth and development
	Preparation Work	Determination of homework
3	Theoretical	Growth and functioning of plant roots
	Preparation Work	Presentation and discussion
4	Theoretical	Soil pH, cation exchange capacity and availability of soil nutrients.
	Preparation Work	Presentation and discussion
5	Theoretical	interpret soil test reports and make recommendations
	Preparation Work	Presentation and discussion
6	Theoretical	Soil organic matter and its dynamics
	Preparation Work	Presentation and discussion
7	Theoretical	Soil acidity and alkalinity; determination of lime or sulphur requirement
	Preparation Work	Presentation and discussion
8	Theoretical	Outline the nitrogen cycle in soils and recognize forms of nitrogen in plant and soil and mobility of each form.
	Preparation Work	Presentation and discussion
9	Intermediate Exam	Midterm Exam
10	Theoretical	Recognize the need for fertilizer phosphorous and forms occurring in soil and plant
	Preparation Work	Presentation and discussion
11	Theoretical	Recognize the need of potassium fertilizers and the forms of potassium in the soil.
	Preparation Work	Presentation and discussion
12	Theoretical	Recognize the need of calcium fertilizers and the forms of calcium in the soil.
	Preparation Work	Presentation and discussion



13	Theoretical	Recognize the need of magnesium fertilizers and the forms of magnesium in the soil.
	Preparation Work	Presentation and discussion
14	Theoretical	Outline the nitrogen sulphur in soils and recognize forms of sulphur in plant and soil and mobility of each form
	Preparation Work	Presentation and discussion
15	Theoretical	Revision
	Preparation Work	Seasonal project
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	2	0	15	30
Term Project	1	0	25	25
Midterm Examination	1	0	35	35
Final Examination	1	0	50	50
Total Workload (Hours)				196
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Being able to make a conclusion on plant nutrition and soil fertility
2	Being able to learn new approaches in soil fertility
3	Being able to searching literature
4	Being able to learn new technics of soil analysis
5	Being able to learn the new technics of plant analysis

Programme Outcomes (Soil Doctorate)

1	To be able to apply the theoretical information achieved during the graduate study
2	To be able to collect data by scientific means, to evaluate and interpret
3	To be able to update himself continuously
4	To be able to assess the convenient analytical methods during the process of the scientific study
5	To be able to put forth solutions to soil use and plant development

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	5	5	4	4
P2	5	5	5	4	4
P3	5	5	5	5	5
P4	5	5	5	5	5
P5	4	5	5	4	4

