



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

Course Title	Soil Organic Matter								
Course Code	ZTO526	Course Level			Second Cycle (Master's Degree)				
ECTS Credit	8	Workload	205 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	The importance and function of soil organic matter for soil microorganisms. The role and importance of soil microorganisms for decomposition of soil organic matter. Emphasizing the relationship between global warming and organic matter.								
Course Content	Sources, formation, chemical structure, classification and importance respect of soil fertility of soil organic matter. The importance of soil organic matter for sustainable soil management and soil organisms.								
Work Placement									
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study, Problem Solving								
Name of Lecturer(s)	Lec. Selçuk GÖÇMEZ								

#### Assessment Methods and Criteria

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

#### Recommended or Required Reading

1	Soil organic matter dynamics and crop residue management. 1993. JL Smith, RI Papendick, DF Bezdicek, JM Lynch, FB - Marcel Dekker, Inc: New York.
2	Soil organic matter and its role in crop production. Allison, F.E. 1973. Elsevier Science Publishing, New York.
3	Soil organic matter and its dynamics. Jenkinson, D.S. 1988. pp. 564-707. In A.Wild (ed.) Russell's soil conditions and plant growth. 11th ed. John Wiley and Sons, New York.
4	Soil organic matter. Biological and ecological effects. Tate, R.L. 1987. John Wiley and Sons, New York.

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition and importance of organic matter
	Preparation Work	Literature research
2	Theoretical	Sources of soil organic matter and classification of organic substances
	Preparation Work	Literature research
3	Theoretical	Formation of soil organic matter
	Preparation Work	Literature research
4	Theoretical	Humic substances, Fulvo acids, Himatomelan acid, Humic acids
	Preparation Work	Literature research
5	Theoretical	Properties of soil organic matter
	Preparation Work	Literature research
6	Theoretical	Create shapes of humic substance; Biological huminification, Abiological huminification
	Preparation Work	Literature research
7	Theoretical	Function in terms of hummus; Nutritious hummus, Permanent humus substances
	Preparation Work	Literature research
8	Intermediate Exam	MIDTERM EXAM
9	Theoretical	Decomposition of soil organic matter
	Preparation Work	Literature research
10	Theoretical	Decomposition activity of soil microorganisms
	Preparation Work	Literature research
11	Theoretical	Progression of decay in satges: Microbial succession
	Preparation Work	Literature research
12	Theoretical	Humification, Mineralization
	Preparation Work	Literature research



13	Theoretical	Determining decomposition rates
	Preparation Work	Literature research
14	Theoretical	Importance of soil organic matter respect of soil quality
	Preparation Work	Literature research
15	Theoretical	PRACTICE EXAMINATION
16	Final Exam	FINAL EXAMINATION

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Assignment	2	0	35	70
Term Project	1	0	35	35
Midterm Examination	1	0	14	14
Final Examination	1	0	30	30
Total Workload (Hours)				205
[Total Workload (Hours) / 25*] = ECTS				8

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	To be able to define importance of soil organic matter.
2	To be able to comprehend and explain the soil quality and soil organic matter.
3	To be able to comprehend the relation between soil quality and soil organic matter
4	To be able to define the role of soil organic matter in soil-plant relations
5	To be able to apply soil organic matter analyses and evaluate the 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	2	2	3	2	2
P2	2	2	3	2	2
P3	2	2	3	2	2
P4	2	3	2	2	2
P5	2	3	2	2	3
P6	2	3	2	2	3
P7	2	3	2	2	3
P8	2	3	2	2	3
P9	2	3	2	2	3
P10	2	3	2	2	3

