



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Management of Micro-Irrigation Systems							
Course Code		ZTY603		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	6	Workload	150 ( <i>Hours</i> )	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		General description of a drip irrigation system Hydraulics of emitters, energy gradient line and pressure variation along a drip irrigation line, emitter flow variation and uniformity coefficient of emitter flow along a drip irrigation line, design of laterals, submains and main lines for uniform and non-uniform slopes for fixed and all pipe sizes, Development of simplified and general design charts, Distribution and application efficiency of drip irrigation systems.							
Course Content		General description of a drip irrigation system Hydraulics of emitters, energy gradient line and pressure variation along a drip irrigation line, emitter flow variation and uniformity coefficient of emitter flow along a drip irrigation line, design of laterals, submains and main lines for uniform and non-uniform slopes for fixed and all pipe sizes, Development of simplified and general design charts, Distribution and application efficiency of drip irrigation systems.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, 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	Nakayama, F.S., Bucks, D.A., " Trickle Irrigation for Crop Production ", Elsevier, (1986)
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Week	Weekly Detailed Course Contents	
1	Theoretical	Definition and importance of trickle irrigation systems
2	Theoretical	Trickle irrigation system components, their operating principles and usage,
3	Theoretical	Hydraulics of emitters and equations
4	Theoretical	Flow in pipes, basic concepts, velocity distributions and friction equations
5	Theoretical	Energy gradient in Trickle irrigation laterals
6	Theoretical	Flow variation along the laterals and uniformity coefficient
7	Theoretical	Design Criteria
8	Intermediate Exam	Mid Term Exam
9	Theoretical	Emitter or Lateral Line Selection
10	Theoretical	Lateral Line Design
11	Theoretical	Development of Design Charts
12	Theoretical	Submain Line Design
13	Theoretical	Main Line Design,
14	Theoretical	Irrigation Efficiency
15	Theoretical	Trickle Irrigation Scheduling
16	Final Exam	Final Exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	2	70
Lecture - Practice	14	2	2	56
Midterm Examination	1	8	2	10



Final Examination	1	12	2	14
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = <b>ECTS</b>				6
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	Understanding basics of a drip irrigation system
2	Ability to formulize the data needed for system design
3	Ability to make the neccessary sizing for the system
4	Ability to design a full drip irrigation system
5	Identifying the model for drip irrigation hydraulics.

### Programme Outcomes (Agricultural Structures and Irrigation Doctorate)

1	Ability to analyze, synthesize and evaluate different forms of scientific knowledge in the field of studies
2	Approach to information systematically, and gain skills related to their field the research methods
3	Innovative science to develop a scientific method or a method that is known to practice in their field
4	Ability to organize and manage the project and advanced scientific research
5	Advanced technologies, find solutions to engineering problems taking advantage of the software and model approaches
6	Creative, unbiased and critical thinking
7	A topic in the field of written, verbally and visually as the ability to express
8	Ability to publish in refereed journals National and international the results of studies

### 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	1	5	5	1	5
P2	5	1	4	5	5
P3	4	4	3	1	3
P4	4	4	4	1	4
P5	1	1	4	5	4
P6	5	5	1	1	5
P7	4	4	4	1	4
P8	1	1	1	1	1

