AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Optimization Applications in Culturtechnique								
Course Code	ZTY611		Couse Level	Third Cycle (Doctorate Degree)					
ECTS Credit	6	Workload	150 *(Hours)*	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	Introducton to optimization software in culturtechnique								
Course Content	Approaches the optimal solution to the problems of soil and water resources, linear programming techniques, optimization in conditions of uncertainty, constrained and unconstrained optimization methods, multi-objective optimization problems, presentation of optimization software, optimization with MATLAB and GAMS								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Demonstration, Discussion, Project Based Study, Individual Study, Problem Solving								
Name of Lecturer(s)	Assoc. Prof. Ersel YILMAZ								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Mathematical and Control Applications in Agriculture and Horticulture 1997 A. Munack and H.-J. Tantau

Week	Weekly Detailed Course Contents	
1	Theoretical	Optimal solution approachs in land and water resources problems
2	Theoretical	Lineer programming techniques
3	Theoretical	Optimization under uncertainity
4	Theoretical	Optimization under restricted conditions
5	Theoretical	Optimization under non-restricted conditions.
6	Theoretical	Multi- purposed optimization techniques
7	Theoretical	Introduction to optimization softwares
8	Intermediate Exam	Midterm exam
9	Theoretical	Optmization with Excel
10	Theoretical	Optmization with MATLAB
11	Theoretical	Optmization with GAMS
12	Theoretical	Writing scenarios and solutions
13	Theoretical	Solution of integer linear programming problems
14	Theoretical	Solution of linear programming of water resources problems
15	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*] = **ECTS**	6
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Introducton to optimization software in culturtechnique
2	Teaching alternatively rethinking supported by optimization in land and water resources management

3	To be able to apply lineer programming techniques
4	Learning constrained and unconstrained optimization methods
5	Optimization with MATLAB and GAMS

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	5	5	4	5	5
P2	4	4	4	4	5
P3	5	4	4	4	4
P4	3	2	3	3	4
P5	4	5	3	3	4
P6	5	5	3	2	3
P7	2	2	3	3	3
P8	2	1	3	2	3