AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Open Channel Hydraulics						
Course Code		ZTY527		Couse Level		Second Cycle (Master's Degree)		
ECTS Credit	7	Workload	175 *(Hours)*	Theory	3	Practice	0	Laboratory	0

Objectives of the Course	Open channel flow and its classification, open channel characteristics, energy and momentum concept, critical flow, uniform and non-uniform flow are explained in this course.
Course Content	Types of flow, states of flow, equations of motion; Energy principle in open-channel flow, transition problem, specific energy, Momentum equation in open-channel flow, hydraulic jump, specific force; Critical flow, critical flow applications, flow measurement; Uniform flow, formulae, Manning's n, uniform flow computations for prismatic and compound irregular cross-sections; Design of channels for uniform flow, nonerodible channels, erodible channels; Gradually varied steady flow, classification and computation of flow profiles, the discharge problem, computer applications; Flow around bridge piers and flow through culverts; Storm sewer design; Unsteady flow, equations of motion, numerical solutions, kinematic wave approximation, the method of characteristics.
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	Hydraulics of Open Channel Flow Sergio Montes
2	Environmental Hydraulics for Open Channel Flows, First Edition Hubert Chanson

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction of open channel flow
2	Theoretical	Introduction of flow types
3	Theoretical	Continuity, momentum and energy equations
4	Theoretical	Specifik energy and minimum energy
5	Theoretical	Flow regimes
6	Theoretical	Computations for prismatic and compound irregular cross-sections
7	Theoretical	Canal design and automation applications
8	Theoretical	Gradually varied flow and irregulat cross-sections
9	Intermediate Exam	Mid Term Exam
10	Theoretical	Classification and computation of flow profiles
11	Theoretical	Computation techniques for gradually varied flow
12	Theoretical	Back-water surface profile computation in EXCEL
13	Theoretical	Open channel flow models and HEC-2
14	Theoretical	Gates in open channels and automated radial gates
15	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	8	3	154
Midterm Examination	1	7	2	9

Final Examination	1	10	2	12
		Total Workload (Hours)		175
		[Total Workload (Hours) / 25*] = **ECTS**		7

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Open channel flow and its characteristics
2	Open channel design
3	Open channel classification
4	Flood routing in open channel
5	Interpretation of results of hydraulic characteristics

Programme Outcomes *(Agricultural Structures and Irrigation Master)*

1	Ability to use, evaluate and improve the knowledge gained from field of study at an expert level
2	Ability to reach necessary the knowledge
3	To able to conduct scientific studies (research) related to the field
4	Ability to consider academical and ethical values the studies
5	Ability to improve editing method and evaluate the results of researches
6	The studies, the ability to reach result and application, develop new approaches
7	A topic in the field of written, verbally and visually as the ability to express
8	Effective use of Turkish language and ability to communicate in a foreign language both written and verbal

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