ISHIK UNIVERSITY
FACULTY OF ENGINEERING
Department of CIVIL ENGINEERING,
2018-2019 Fall
Course Information for CE 315 HYDRAULICS I

	Course Name:	HYDRAULICS I					

Code	Course type	Regular Semester	Theoretical	Practical	Credits	ECTS
CE 315	2	5	3	-	3	

Name of Lecturer(s)-Academic Title:	Barham Haydar - MSc karwan ali - MSc
Teaching Assistant:	-
Course Language:	English
Course Type:	Main
Office Hours	2
Contact Email:	barham.haydar@ishik.edu.iq eng.karwan@gmail.com Tel:07705042603 07701931624
Teacher's academic profile:	MSc holder in construction materials Msc
Course Objectives:	he course is deal mainly with required revision of static forces exerted by liquids on gates ,such as vertical sluice gate ,inclined surfaces convex and concave gates. Flow in pipes which is based upon the major equations of flow are represent the significant start of topics . The flow in simple ,compound pipes systems are considered and covered with wide rang of cases .The teaching method will depend upon the white board with the presentation of topics using the smart board. class and home works should be achieved by students and several quizzes beside the mid and final exam will be held to asset the performance of students throughout the semester.
Course Description (Course overview):	Flow in pipes: basic principles, types of flow, basic equations, solving the problems of flow in the pipe using the equations and the outline of Stanton and method of trial and error, solving the problems of flow in the pipe using the direct solution method, pipe-related pumps and turbines, Flow through branched pipes, Flow through pipes in series and parallel, analysis and design of networks pipe using the Hardy Cross, Unsteady flow through pipes, Water hammer, Pumps: Types of pumps, the basic curves of pumps, pumps, respectively, and parallel systems, pumps and pipelines.

COURSE CONTENT

Week	Hour	Date	Topic
1	3	2-4/10/2018	Introduction
2	3	7-11/10/2018	Flow through pipes
3	3	14-18/10/2018	Major and minor losses
4	3	21-25/10/2018	Flow in simple and Compound pipes (pipes in series)
5	3	28/10-1/11/2018	Applications
6	3	4-8/11/2018	Pipes in parallel
7	3	11-15/11/2018	Applications
8	3	18-22/11/2018	Midterm Exam
9	3	25-29/11/2018	Pipes in branch
10	3	2-6/12/2018	Applications
11	3	9-13/12/2018	Multi-tanks connections

12	3	16-20/12/2018	Applications
13	3	23-24/12/2018	Dimensional Analysis
14	3	2-3/1/2019	Applications
15	3	7-10/1/2019	Turbulent flow in pipes
16	3	13-17/1/2019	Final Exam
17	3	20-24/1/2019	Final Exam

COURSE/STUDENT LEARNING OUTCOMES

1 Flow in Simple Pipes
2 Flow in Compound Pipes
3 Minor and Major losses
4 Pipes in branch
5 multi-tanks and dimensional analysis

COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES
(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced)

	Program Learning Outcomes	Cont.
1	An ability to apply knowledge of mathematics, science, and engineering	I
2	An ability to design and conduct experiments, as well as to analyze and interpret data	P
3	An ability to design a system, component, or process to meet desired needs	P
4	An ability to identify, formulate and solve engineering problems	I
5	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	I
6	Skills in project management and recognition of international standards and methodologies	P
7	An ability to function on multi-displinary teams	I
8	An understanding of professional and ethical responsibility	P
9	An ability to communicate effectively	P
10	The broad education necessary to understand the impact of engineering solutions in a global and social context	P
11	A recognition of the need for and ability to engage in, lifelong learning	P
12	A knowledge of contemporary issues	I

Prerequisites (Course Reading List and References):	1-Engineering Mechanics/Statics 2-Fluid Mechanics
Student's obligation (Special Requirements):	The students should have a well known of the basics and principles of statics and fluid mechanics which are both required to make an active connection with main topics of hydraulics.
Course Book/Textbook:	Hydraulics of Civil Engineering By NILLURI
Other Course Materials/References:	Fluid Mechanics, Hydraulics and Hydraulic Machines
Teaching Methods (Forms of Teaching):	Lectures, Excersises, Assignments, Case Studies

COURSE EVALUATION CRITERIA

Method	Quantity	Percentage (%)
Attendance	1	10
Participation	1	5
Quiz	3	5
Midterm Exam(s)	1	30
Final Exam	1	40
Total		**100**

Examinations: Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Short Answers, Matching

Extra Notes:

ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD

Activities	Quantity	Duration (Hour)	Total Work Load
Course Duration (Including the exam week: 16x Total course hours)	48	3	144
Hours for off-the-classroom study (Pre-study, practice)			0
Assignments Mid-terms			0
Final examination			0
Other			0
Total Workload			**144**
ECTS Credit (Total workload/25)			**5.76**

Peer review

Signature: Signature: Signature:
Name: Name: Name:
Lecturer Head of Department Dean