

Theoretical and practical course plan form - Ilam University of Medical Sciences

School: Health

Introduction to the lesson

Department: Environmental Health

Course Title: Hydraulics of students:

Environmental Health Engineering Prerequisite Courses: Fluid mechanics Venue:

School of Health in charge of the course (teacher):Dr. Moayed Adiban

Number of units: 2

Teaching time:

Second semester 2020-2021

Degree of students: Bachelor

Email address: Adiban-m@medilam.ac.ir

General Objective of the lesson: Familiarity of Dashoya with the first hydraulic

1. Ven Te chow, open channel hydraulics, New York- McGraw-Hill Book Company Inc., 1959
2. R. V. Giles., Fluid mechanics and hydraulics, McGraw-Hill. 1977
3. Hamill L. Understanding Hydraulic, Macmillan Presses. 1995
4. Open channel hydraulics, Dr. Seyed Mahmoud Hosseini and Jalil Abrishami, Imam Reza University Press, 2004.
5. Fluid and hydraulic mechanics, Hassan Madani, Jihad Daneshgahi Publications, 1985

Student Exam Resources:

1. Ven Te chow, open channel hydraulics, New York- McGraw-Hill Book Company Inc., 1959
2. R. V. Giles., Fluid mechanics and hydraulics, McGraw-Hill. 1977
3. Hamill L. Understanding Hydraulic, Macmillan Presses. 1995
4. Open channel hydraulics, Dr. Seyed Mahmoud Hosseini and Jalil Abrishami, Imam Reza University Press, 2004.
5. Fluid and hydraulic mechanics, Hassan Madani, Jihad Daneshgahi Publications, 1985
6. Fluid Mechanics, Straight, translated by Alireza Eftekhari.

How to evaluate a student during the course:

- Methods and time of assessment and evaluation of the student and the bar related to each assessment:

Method	Score	Date	Time
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solve problems	4	During semester	Scheduled training hours
End of term exam	16	End semester	
Total	20		

Student assignments during the course:

- Solve the exercises presented in class
- Participate in answering course questions
- Participate in the evaluations of each session and solve assignments

Teaching methods and teaching aids used

The teaching method in this course will be in the form of group discussion, problem solving, questions and answers, using magic and whiteboards, as well as the use of other educational media.

Lesson rules and expectations from students

- 1- Attending the class on time and based on the set time
- 2- Observance of education and disciplinary regulations
- 3- Studying the contents of the previous session and preparing to attend the class
- 4- Solve problems at home and answer on the due date
- 5- According to the educational regulations, unjustified absence in the final exam will be considered as a score of zero and justified absence will cause the removal of that course.

Schedule of presenting the hydraulic curriculum for the second semester of the 2020-2021 academic year

Session	Specific Objectives (Outline)	Specific behavioral goals	Lecturer	Necessary preparation of students before the start of the class
1	Fluid properties	The student should be able to describe fluids, types of fluids, and properties of fluids	Dr.adiban	
2	viscosity	The student should be able to describe viscosity, types of viscosity and viscometer		
3	Types of pressures in fluids	The student should be able to describe absolute pressure, relative pressure, and pressure measurement		
4	Hydrostatic	The student should be able to understand the principles of hydrostatics, the relevant basic equations Explain		

5	Water at rest	The student should be able to describe the forces acting on the surfaces caused by the fluid		
6	Conversion of units in fluids	The student should be able to dimensional analysis, how to convert units		
7	Fluid motion	The student should be able to describe the principles of fluid motion, layer and membrane flows, and continuous flows		
8	Flow rate	The student should be able to explain the calculations related to the pressure due to the Reynolds number velocity		
9	Bernoulli relationship	The student should be able to explain the application of the Bernoulli relation to the Bernoulli theory for incompressible fluids		
10	Flow and velocity measurements	The student should be able to describe different methods of measuring flow, ventimeter, overflow, orifice, partial flow and siphon		
11	Flow in Orifice	Describe the flow in orifices, the types of orifices and the corresponding formulas		
12	Overflow	The student should be able to describe flows in overflows, types of overflows, and related formulas		
13	Flow in pipes	The student should be able to describe the flow in pipes, the types of problems in flow design in pipes		
14	Flow in pipes	The student should be able to describe the flow in series and parallel tubes		
15	Flow in open ducts	Flow in open ducts Explain the general principles of fluid movement in open ducts		
16	Flow in open ducts	The student should be able to describe the characteristics of channels to generate maximum current or velocity, specific energy and critical depth, and related calculations.		
17	Lesson summarization	Lesson summarization, student problem fixes		