COURSE PLAN

FIRST: BASIC INFORMATION

College

College	: Karak University College
Department	: Department of Basic and Informatics Sciences

Course

Course Title	: Sanitary Engineering
Course Code	:020112225
Credit Hours	: 3 (2 Theoretical, 1 Practical)
Prerequisite	: 020112182

Instructor

Name	:Majd Ali Al-Saraireh
Office No.	:-
Tel (Ext)	:-
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Office Hours	: -

Class Times

Text Book

- Title: Water Supply And Sanitary Engineering, RANGWALA , 2016, Charotar Publishing House Pvt. Ltd. 29th Edition.

References

- كتاب شبكات المياه والصرف الصحي/الصادر عن المؤسسة العامة للتعليم الفني والتدريب الفني

SECOND: PROFESSIONAL INFORMATION

COURSE DESCRIPTION

This course cover working knowledge about sanitary installations, drinking water network, and work for domestic heating in homes. And, It also covers major concepts related to sewage system including drainage, hydrology, and hydraulics.

COURSE OBJECTIVES

The objective of this course is to enable the student to do the following:

- Recognize key concepts and components of sanitary engineering.
- Recognize working knowledge of water networks and their classifications.
- Recognize the domestic hot water system and central heating approach.

- Recognize the major sanitary fittings, components and tools.
- Recognize the sanitary engineering systems categories
- Recognize sewerage systems and sewer networks.
- Explain drainage systems, types of sewerage systems, urban hydrology, and urban hydraulics.

COURSE LEARNING OUTCOMES

On successful completion of this course, students are expected to be able to:

CLO1. Recognize the sanitary engineering and what it includes
CLO2. Recognize the water networks and their types
CLO3. Recognize the hot water and central heating systems
CLO4. Recognize types and systems of sanitary fittings
CLO5. Recognize the sewerage systems
CLO6. Recognize the type and configuration of sewer pipes
CLO7. Recognize the primary wastewater treatment
CLO8. Recognize the secondary wastewater treatment

COURSE SYLLABUS

Week	Topic	Topic details	Related LO and Reference (Chapter)	Proposed assignments
1	Introduction	• Water resources • Wastewater treatment methods • Water physical and chemical properties • Water pollution reasons • Wastewater treatment main contribution	CLO1	
2	Water networks	• External water networks. • Methods used to provide clean drinking water. • Sewerage water tanks.	CLO2	
3	Water networks	• Internal (domestic) water networks. • Domestic water tanks. • Water valves, faucets, and mixers.	CLO2	
4	Water networks	• Network design principles • Water network components • Basic water networks design requirements	CLO2	
5	Domestic hot water and central heating	• Hot water supply for facilities • Local and domestic water heating	CLO3	
6	Domestic hot water and central heating	• Hot water network major components and key functions. • Central hot water heating	CLO3	
7	Domestic hot water and central heating	• Central Heating Units • Central Heating and Hot Water System	CLO3	
8	**Mid Exam**			
9	Sanitary fittings	• Fittings and sanitary components. • Water basins.	CLO4	

Week	Topic	Topic details	Related LO and Reference (Chapter)	Proposed assignments
		• Toilets.		
10	Sanitary fittings	• Toilets used in sewerage systems supplied by water network. • Flush tanks. • Siphon systems.	CLO4	
11	Sewerage systems	• Sewerage systems inside buildings • Sewerage network and piping system • Sewerage system connection between facilities and major sewerage network	CLO5	
12	Sewerage systems	• Inspection rooms of sewerage systems. • Rainwater drainage	CLO5	
13	Sewerage systems	• Sewerage pipes and their inclination and diameter • Sewerage network system classification • Sewerage network system organization	CLO6	
14	Wastewater Treatment	• Screening • Grit chamber • Primary sedimentation tank	CLO7	
15	Wastewater Treatment	• Biological treatment • Disinfection	CLO8	
16	**Final Exam**			

COURSE LEARNING RESOURCES

Teaching will be achieved using available resources including Lectures, data show and materials uploaded to the e-learning system and term projects.

ONLINE RESOURCES

A lot of references and learning videos and codes are available on the internet. The student could refer to them for more information.

ASSESSMANT TOOLS

ASSESSMENT TOOLS	%
Projects and Quizzes	20
Mid Exam	30
Final Exam	50
TOTAL MARKS	100

THIRD: COURSE RULES

ATTENDANCE RULES

Attendance and participation are extremely important, and the usual University rules will apply. Attendance will be recorded for each class. Absence of 10% will result in a first written warning. Absence of 15% of the course will result in a second warning. Absence of 20% or more will result in forfeiting the course and the student will not be permitted to attend the final examination. Should a student encounter any special circumstances (i.e. medical or personal), he/she is encouraged to discuss this with the instructor and written proof will be required to delete any absences from his/her attendance records.

GRADING SYSTEM
Example:

Grade	points
0-49	FAILED
50-100	PASSED

REMARKS

Use of Mobile Devices, Laptops, etc. During Class, unexpected noises and movement automatically divert and capture people's attention, which means you are affecting everyone's learning experience if your cell phone, laptop, etc. makes noise or is visually disturbing during class. For this reason, students are required to turn off their mobile devices and close their laptops during class.

Academic Integrity. Copying assignments, allowing assignments to be copied, will fail the assignment on the first offense. Cheat in tests, or copying assignments for the second time.

Cite all sources consulted to any extent (including material from the internet), whether or not assigned and whether or not quoted directly.

Project: Students will undertake a term project to study in detail one of the course topics. The project may involve a critical literature review or a case study. The students should consult at least five (5) references or journal articles. A written project report of 10 pages maximum will be submitted in nominated dates. Ten-minute presentation will be given to the rest of the class during the last two weeks of the semester.
Formats, Rules, Topics, submission and presentation dates are illustrated in project form.

COURSE COORDINATOR

Course Coordinator	**Department Head:**
Signature:	**Signature:**
Date:	**Date:**