Jordan University of Science and Technology

Faculty of Engineering

Chemical Engineering Department

CHE583 Physical And Chemical Water Treatment - JNQF Level: 7

First Semester 2023-2024

Course Catalog
3 Credit Hours. Water quality, sedimentation, thickening and flotation, filtration and centrifugation, adsorption, membrane separation processes, chemical equilibria in aqueous systems, coagulation, ion exchange, oxidation and disinfection.
Teaching Method: On Campus

Instructor	
Name	**Dr. Lua"Y Zeatoun**
Office Location	CH2 L2
Office Hours	
Email	zeatoun@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue, Thu : 08:30 - 09:30 Room: CH2111

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
223621	CHE362 Unit Operations	Prerequisite / Study
223640	CHE364 Mass Transfer	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction	
Weeks 2, 3	8. Control of particulate pollutants.	

Weeks 4, 5, 6, 7, 8	9. Control of volatile organic compounds (VOC)	
Weeks 9, 10, 11, 12	Engine Problem	
Weeks 13, 14, 15, 16	Air pollutants and global climate	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Apply mass and energy balances, chemical engineering thermodynamics, heat transfer, and mass transfer concepts for analyses and design of separation units [1SO1] [1L7K1]	20%	1st, Quizes, final
Gain experience on operating and collecting data accurately from water treatment processes [1SO6] [1L7S2]	60%	1st, 2nd, Quizes, final
Train students on safe environment operation of chemical processes [1SO2] [1L7C3]	10%	1st, 2nd, Quizes, final
Monitor the operation behavior of different water-treatment separation operations from transient to steady-state [1SO6] [1L7S3]	10%	Quizes, final

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
20	10				70	

Relationship to NQF Outcomes (Out of 100%)			
L7K1	L7S2	L7S3	L7C3
20	60	10	10

Evaluation	
Assessment Tool	**Weight**
1st	30%
2nd	20%
Quizes	10%
final	40%

Policy

Policy	1. There will be problems at the end of each topic. Some of these involve hand calculations, derivations or proofs; other involves computer-problem assignments to reinforce the concepts discussed in lectures. 2. Cooperation in the homework and computer assignments should be limited to clarification of problem statements and questions concerning syntax and usage of programming tools. Anything else will be considered an academic offense and may result in failure of the course. 3. Computer final exam will be in the lab. 4. No late homework assignments will be accepted. 5. Quizzes will be planned and unplanned (pop-up). 6. University regulations will be followed strictly for absence (Students are responsible to count their no. of absences).

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