Jordan University of Science and Technology

Faculty of Engineering

Chemical Engineering Department

CHE578 Chemical Process Safety - JNQF Level: 7
Second Semester 2023-2024

Course Catalog
2 Credit Hours. 2 Credit hours (2 hrs lectures). Safety in the industry, accident analysis, toxicology, industrial hygiene, chemicals release source models, toxic release and dispersion models, fires and explosions, design to prevent fires and accidents, reliefs and relief sizing, hazards identification, risk assessment.
Teaching Method: Blended

Text Book	
Title	Chemical Process Safety: Fundamentals with Applications
Author(s)	Daniel A. Crowl, Joseph F. Louvar
Edition	4th Edition
Short Name	Text Book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Reference_1	Chemical Process Safety: Fundamentals with Applications	Daniel A. Crowl, Joseph F. Louvar	3rd Edition	

Instructor	
Name	**Mrs. Rowaida Zoumot**
Office Location	CH1 L2
Office Hours	
Email	zmot@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Thu : 10:30 - 11:30
Room: قاعة الندوات/كيماوي

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2	Introduction	**Chapter 1** From **Text Book**
Week 3	Toxicology	**Chapter 2** From **Text Book**
Weeks 4, 5	Industrial Hygiene	**Chapter 3** From **Text Book**
Week 8	Toxic Release and Dispersion Models	**Chapter 5** From **Text Book**
Weeks 9, 10	Fire and Explosions	**Chapter 6** From **Text Book**
Week 11	Design to Prevent Fires and Explosions	**Chapter 8** From **Text Book**
Week 12	Risk Assessment	**Chapter 12** From **Text Book**
Weeks 6, 7	Source Models	**Chapter 4** From **Text Book**
Weeks 13, 14	Case Study Presentations	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
1. Describe the nature of accident process and methods used in accident investigation, inherently safer design strategies, and the various strategies and governmental regulations relevant to process safety management [20SO4] [20L7K1]	20%	
1. Explain toxicology, industrial hygiene, source models, dispersion models, flammability, reactivity, fires and fire prevention, explosion and explosion prevention, electrostatics, pressure relief systems, runaway reactions, and risk analysis as they apply to chemical process safety, and be able to solve corresponding problems [40SO2] [1L7S2]	40%	
3. Analyze data for determining flash points, flammability limits, runaway reaction potential, designing pressures relief systems, and for characterizing dust explosions and electrostatic charge accumulation and discharge [15SO6] [15L7S3]	15%	
4. Employ opportunities to future professional development through working on group assignment, studying professional ethics, practicing written, oral, and graphical communication skills [25SO5] [1L7C3]	25%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
	40		20	25	15	

Relationship to NQF Outcomes (Out of 100%)			
L7K1	L7S2	L7S3	L7C3
20	40	15	25

Evaluation	
Assessment Tool	**Weight**
MID EXAM	30%
Course activity + Presentation	20%
Final Exam	50%

Policy	
Policy	1- Attendance Attendance will be checked at the beginning of each class. University regulations will be strictly followed for students exceeding the maximum number of absences. 2- Homework Homework problems are assigned during lecture and usually due one week later. Late homework will not be accepted. Try to solve the problems independently. The assigned problems will be collected, graded, and returned to you in lecture. 3- Quizzes Quizzes will be part of this course. No make-up quizzes will be conducted except in the case of a documented emergency 4- Student Conduct It is the responsibility of each student to adhere to the principles of academic integrity. Academic integrity means that a student is honest with him/herself, fellow students, instructors, and the University in matters concerning his or her educational endeavors. Cheating will not be tolerated in this course. University regulations will be pursued and enforced on any cheating student. 5- Re-grades can be requested within one week of the return of a graded assignment. Document(s) will be re-graded in their entirety; the score may therefore increase or decrease. 6- Withdrawals Students will not receive an automatic drop for persistent absences or failure to complete assignments. Responsibility for withdrawal is entirely the responsibility of the student.

Date Printed: 2024-02-27