



Jordan University of Science and Technology
Faculty of Engineering
Chemical Engineering Department

CHE565 Unit Operations Lab - JNQF Level: 7

First Semester 2023-2024

Course Catalog

1 Credit Hours. Packed and tray distillation, packed-column gas absorption, liquid-liquid extraction, humidification/dehumidification in cooling towers, spray drying, tray drying, evaporation, fluidization, screen analysis and size reduction.

Text Book

Title	Laboratory Manual for ChE 565
Author(s)	Rami Jumah
Edition	1st Edition
Short Name	Text Book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
REF # 1	Unit operations of Chemical Engineering	W.L. McCabe, J.C. Smith, and P. Harriot	7th Edition	
REF # 2	Transport Processes and Separation Process Principles	Geankoplis C.J	4th Edition	
REF # 3	Chemical Engineering; Volume 2	Coulson J.M., Richardson J.F., Backhurst J.R. and J.H. Harker	4th Edition	
REF # 4	Chemical Engineers' Handbook	Perry J. H. (ed.)	6th Edition	
REF # 5	Principles of Unit Operations	Foust A.S., Wenzel L.A., Clump C.W., Maus L. and L. B. Andersen	2nd Edition	

Instructor

Name	Prof. Mohammed Osama Azzam
Office Location	CH2 L2
Office Hours	
Email	azzam@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun : 14:30 - 17:30 Room: LAB Section 2: Lecture Time: Tue : 14:30 - 17:30 Room: LAB

Prerequisites		
Line Number	Course Name	Prerequisite Type
224630	CHE463 Separation Processes	Prerequisite / Study
223621	CHE362 Unit Operations	Prerequisite / Study
224450	CHE445 Heat & Mass Transfer Lab	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 2	Tray Dryer	From Text Book
Week 3	Fluidization	From Text Book
Week 4	Extraction	From Text Book
Week 5	Evaporation	From Text Book
Week 7	Spray Dryer	From Text Book
Week 8	Cooling Tower	From Text Book
Week 9	Distillation	From Text Book
Week 10	Absorption	From Text Book

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 unit operations [1SO1] [1L7K1]	40%	

Gain experience on operating and collecting data accurately from chemical processes [1SO6] [1L7S2]	5%	
Monitor the operation behavior of different unit operations from transient to steady-state [1SO6] [1L7S3]	3%	
Enhance students technical writing skills [1SO3] [1L7C3]	30%	
Gain experience on delivering oral presentations [1SO3] [1L7C3]	20%	
Train students on safe operation of chemical processes [1SO2] [1L7C3]	2%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
40	2	50			8	

Relationship to NQF Outcomes (Out of 100%)			
L7K1	L7S2	L7S3	L7C3
40	5	3	52

Evaluation	
Assessment Tool	Weight
Midterm	10%
Performance	15%
Final Exam	40%
Reports	35%

Policy	
Grouping	The class will be divided into groups where each group will perform one experiment/week. In the first week of the semester the members of each group will be assigned by the instructor(s).
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.
Lab. Reports	Laboratory reports will be due one week after the scheduled experiment. This DEADLINE WILL BE STRICTLY ENFORCED. Reports should be submitted to the instructor during the scheduled lab session.
Quizzes	Quizzes will be part of this course. No make-up quizzes will be conducted except in the case of a documented emergency
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.

