The University of Jordan

School of Engineering

Chemical Engineering Department

1. **SEMESTER:** First semester 2025 - 2026

2. **COURSE INFORMATION**
   - Code and Name: **0905563 Separation Processes Laboratory**
   - Compulsory
   - Perquisites: 0935442 - Heat and Mass Transfer Operation
   - Credit Hours: 1 credit (3 h Practical)

3. **COURSE DESCRIPTION**

   Perform experiments related to courses (0935442-Heat and Mass Transfer Operations) and (0935441- Mass Transfer Operations) covering separation processes such as diffusion, sorption–desorption, absorption, humidification, distillation, extraction, drying, and evaporation.

4. **INSTRUCTORS**
   - ***Titles and Contacts***

Instructor	Title	Email	Office location
Dr. Hatem Alsyouri	Associate Professor	alsyouri@ju.edu.jo	CHE Department
Prof. Motasem Saidan	Professor	m.saidan@ju.edu.jo	CHE Department
Eng. Rula Mustafa	Lab Instructor	rula.mustafa@ju.edu.jo	CHE Labs
Eng. Amal Al-Labani	Lab Instructor	a.al-labani@ju.edu.jo	CHE Labs

   - ***Office Hours***

Instructor	Sunday	Monday	Tuesday	Wednesday	Thursday
Dr. Hatem Alsyouri	9:30 – 10:30 13:00 – 14:00		9:30 – 10:30		9:30 – 10:30 11:30 – 12:30
Prof. Motasem Saidan					
Eng. Rula Mustafa	10:00-11:00	10:00-11:00	10:00-11:00		
Eng. Amal Al-Labani					

5. **CLASS SCHEDULE**
   - ***Lab location*****:** *Experimental sessions will be run in the chemical Engineering Labs*

Section	Instructor	Sunday	Monday	Tuesday	Wednesday	Thursday
1	Dr. Hatem Alsyouri Eng. Rula Mustafa		13:00 – 16:00			
2	Dr. Hatem Alsyouri Eng. Amal Al-Labani				13:00 – 16:00	
3	Prof. Motasem Saidan Eng. Rula Mustafa	13:00 – 16:00				

6. **TEXTBOOK**
   - Teaching materials comprise **Experimental Lab Manuals** prepared by the course instructors. It will be provided through the course's E-learning platform.
   - **Additional Reference(s):** Refer to textbooks of the pre-requisite course: 0935442 - Heat and Mass Transfer Operation
   - **Website: E -learning account** (https://elearning.ju.edu.jo/)

7. COURSE LEARNING OUTCOMES (LOs)

Upon successful completion of the course, the student should be able to:

1. Conduct experiments and operate laboratory equipment to collect reliable data. (SO6)
2. Follow established experimental procedures and maintain proper documentation of test conditions and observations. (SO6)
3. Analyze and interpret experimental data to draw valid engineering conclusions supported by theoretical understanding. (SO6, SO1)
4. Identify laboratory hazards and apply appropriate health, safety, and environmental procedures during experiments. (SO4)
5. Recognize and evaluate sources of error and uncertainty in experimental results using sound engineering judgment. (SO1)
6. Function effectively as a member of a team by contributing actively, assuming shared responsibilities, and supporting team goals. (SO5)
7. Communicate experimental objectives, methods, and results effectively through written reports and oral presentations. (SO3)

Related Chemical Engineering Program Student Outcomes (SOs) - ABET

SO1. An ability to apply engineering, science, and mathematics to identify, formulate, and solve complex engineering problems.
SO3. An ability to communicate effectively with a range of audiences.
SO4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
SO5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
SO6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

8. LAB EXPERIMENTS

No.	EXPERIMENT
1	Gas absorption
2	Distillation
3	Cooling tower
4	Liquid-liquid extraction
5	Diffusion
6	Wetted wall column
7	Adsorption
8	Soxhlet Extraction
9	Convection Drying

9. ASSESSMENT & GRADING

Assessment	*Weight*
Lab Evaluation	10%
Short Reports (x8)	20%
Full Report (x1)	10%
Midterm	20%
Final exam	40%
Total	**100%**

10. POLICIES AND EXPECTATIONS

a. **Attendance:** Students must attend all lab sessions and are responsible for any material or announcements made. The university attendance policy will be strictly followed.
b. **Classroom conduct in:** Phones and laptops must be turned off unless used for instructional purposes. Professional and respectful behavior is expected at all times.
c. **Academic Integrity:** All forms of academic dishonesty will be handled according to university regulations.
d. **Announcements**: Announcements related to this course are uploaded to the course e-learning portal.
e. **Software:** Use of Excel and Aspen HYSYS is encouraged for calculations, process simulation, data analysis, and graphical presentation.
f. **Assignments**: Experimental Reports must be submitted on time; late work is not accepted. The midterm and final exams are designed to evaluate students' understanding and application of topics learned in the lab.
g. **Safety Operations:**
   - Students must strictly adhere to all laboratory safety rules and procedures at all times. Proper personal protective equipment (PPE) — including lab coats, safety goggles, gloves, and closed-toe shoes — must be worn while present in the lab.
   - Students should handle all chemicals carefully, follow the instructor's safety instructions, and use the safest possible procedures during experiments. The use of hazardous or reactive materials must be performed only under supervision and with prior approval.

11. RELATIONSHIP TO PROGRAM STUDENT OUTCOMES (SOs)

SO1	SO2	SO3	SO4	SO5	SO6	SO7
✓		✓	✓	✓	✓	

12. RELATIONSHIP TO CHEMICAL ENGINEERING PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1	PEO2	PEO3	PEO 4
✓	✓	✓	

Note: The instructors have the right to amend the content of this syllabus and keep students informed about the updates.

V2 Revised on: 10-11-2025