



Jordan University of Science and Technology
Faculty of Pharmacy
Pharmaceutical And Biological Manufacturing Department

MANU223 Pharmaceutical Analysis Lab - JNQF Level: 7

First Semester 2025-2026

Course Catalog

1 Credit Hours. This is a practical course in pharmaceutical analytical chemistry and instrumental analysis, which introduces quantitative analysis to determine the concentration of a given solution by using the titration technique. Various quality control methodologies are considered standards in pharmaceutical literature. Analysis of raw materials as well as formulated preparations will be performed using standard analytical techniques.

Teaching Method: On Campus

Text Book

Title	Analytical chemistry
Author(s)	Gary D. Christian
Edition	7th Edition
Short Name	Ref#1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref#2	British Pharmacopoeia	Anthony C. Cartwright	4th Edition	
Ref#3	Pharmaceutical Analysis: A text book for pharmacy students and pharmaceutical chemists	David Watson	5th Edition	
Ref#4	Pharmacognosy by Trease and Evans	William Charles Evans	15th Edition	

Instructor

Name	Dr. RUFAlDA AL ZOUBI
Office Location	P2 - L-2 room 106
Office Hours	Mon : 10:30 - 12:30 Tue : 08:00 - 08:30 Wed : 10:30 - 12:30 Thu : 08:00 - 09:30
Email	rmaalzoubi1@just.edu.jo

Instructor

Name	Dr. SUZAN QAWAGZEH
Office Location	PH4 (Physics department)

Office Hours	Sun : 11:00 - 12:00 Sun : 13:00 - 14:00 Mon : 09:00 - 10:00 Tue : 11:00 - 12:00 Tue : 13:00 - 14:00 Wed : 09:00 - 10:00
Email	saqawagzeh@just.edu.jo

Class Schedule & Room
Section 4: Lecture Time: Mon : 14:00 - 16:00 Room: LAB
Section 6: Lecture Time: Tue : 14:00 - 16:00 Room: LAB

Prerequisites		
Line Number	Course Name	Prerequisite Type
322210	MANU221 Instrumental Analysis	Pre./Con.

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction	From Ref#1
Week 2	Quantitative analysis of vitamin C effervescent tablet	From Ref#1, From Ref#2
Week 3	Quantitative analysis of Aspirin tablet	From Ref#2, From Ref#3
Week 4	Potentiometric acid-base titration	From Ref#1, From Ref#2, From Ref#3
Week 5	Quantitative estimation of Metformin HCl using UV-Visible spectrophotometry (1)	From Ref#1, From Ref#2, From Ref#3
Week 6	Column Chromatography small size (Relaxon)	From Ref#1, From Ref#2, From Ref#3
Week 7	Quantitative Analysis of Paracetamol in tablet using HPLC	From Ref#1, From Ref#2, From Ref#3
Week 8	Determination of log p for compounds of different polarity using HPLC	From Ref#1, From Ref#2, From Ref#3
Week 9	Limit test	From Ref#1, From Ref#2, From Ref#3
Week 10	Identification of raw materials using IR	From Ref#2, From Ref#3
Week 11	Detects residual solvents in API?s using GC-MS	From Ref#3

Week 12	Paper Chromatography of Amino Acids/ Karl Fischer titration	From Ref#1, From Ref#2, From Ref#3
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Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Demonstrate quantitative analytical skills required to perform accurate chemical analyses and independently operate each laboratory technique introduced. [1PLO MANU1.1] [1L7S1]	25%	
Apply analytical skills to solve specific problems by selecting appropriate techniques, performing measurements, analyzing data, and presenting results in a concise scientific report. [1PLO MANU1.2] [1L7S1]	25%	
Demonstrate knowledge and skills in preparing and separating pharmaceutical components using chromatographic techniques [1PLO MANU1.2] [1L7S1, 1L7S2]	25%	
Apply analytical techniques such as IR spectroscopy, limit tests, and paper chromatography to assess the quality and identity of pharmaceutical raw materials [1PLO MANU1.1] [1L7S1, 1L7S2]	15%	
Demonstrate qualitative analytical skills required to perform accurate chemical analyses and independently operate each laboratory technique introduced [1PLO MANU1.1] [1L7S1]	10%	

Relationship to Program Student Outcomes (Out of 100%)											
PLO MANU1.1	PLO MANU1.2	PLO MANU2.1	PLO MANU2.2	PLO MANU3.1	PLO MANU3.2	PLO MANU3.3	PLO MANU4.1	PLO MANU4.2	PLO MANU4.3	PLO MANU4.4	PLO MANU4.5
50	50										

Relationship to NQF Outcomes (Out of 100%)	
L7S1	L7S2
80	20

Evaluation	
Assessment Tool	Weight
Mid-term exam	25%
In-Lab evaluation	5%
Reports	15%
Products and Results	5%
Final exam	50%

Policy	
Exams	All exams are closed book and notes. The final exam is comprehensive (covers all the material). Incomplete exams need approval from the dean
Cheating	Prohibited; The commitment of the acts of cheating and deceit such as copying during examinations, altering examinations for re-grade, plagiarism of homework assignments, and in any way representing the work of others as your own is dishonest and will not be tolerated. Standard JUST policy will be applied المادة 7: إذا ضُبط الطالب أثناء الامتحان أو الاختبار متلبسا بالعث فتوقع على ?? العقوبات التالي؟ مجتمعة: أ- اعتباره راسبا في ذلك الامتحان أو الاختبار. ب- الغاء تسج?ل? في بق?ة المسابقات المسجل ل? في ذلك الفصل. ??- فصل? من الجامعة لمدة فصل دراسي واحد، و? الفصل التالي للفصل الذي ضبط ف.

Attendance	Excellent attendance is expected. JUST policy requires the faculty member to assign ZERO grade (35) if a student misses 10% of the classes that are not excused. If you miss class, it is your responsibility to find out about any announcements or assignments you may have missed.
Participation	Excellent participation is expected
Withdraw	Last day of courses withdrawal (without reimbursement of tuition fees) is 2nd of January 2026
Classroom Cell Phone Policy	The use of cell phones, smart phones, or other mobile communication devices is disruptive, and is therefore prohibited during class without permission. Except in emergencies, those using such devices must leave the classroom for the remainder of the class period.

Date Printed: 2025-10-13