

Course Description Form

1. Course Name:					
Advance pharmaceutical analysis (Theoretical+ Practical)					
2. Course Code:					
Phcls24_528--					
3. Semester / Year:					
2 nd Semester/5 th year					
4. Description Preparation Date:					
22/1/2025					
5. Available Attendance Forms:					
Students' signature on attendance sheet					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours Theoretical + 2 hours Practical (75)/4 units					
7. Course administrator's name					
Theoretical					
Name: Assist. Prof Dr.MoathKahtanBashir Email: moathkahtan@uomosul.edu.iq Assist. Prof Dr. Ahmed Abdul-Jabaar Mahmood Email: ahmedsot@uomosul.edu.iq					
Practical					
Lec. Dr. Aws M. Nejres Email: aws.m.nejres@uomosul.edu.iq Lec. Dr. Wallada H. Ibrahim Email: wallada.h@uomosul.edu.iq Lec. Nada Ahmed Email: nadaahmed199238@uomosul.edu.iq Lec. Raghad Riyadh Khalil Email: raghadalbarhawi@uomosul.edu.iq					
8. Course Objectives					
Course Objectives					
Identify the most common pharmaceutical analysis techniques that used for the identification of drugs or chemical compounds.		<u>Ultraviolet spectroscopy</u> UV:presence of the conjugated electron system <u>Infrared spectroscopy</u> IR: identify the presence of the functional groups <u>Nuclear magnetic resonance</u> NMR: identify the carbon hydrogen framework <u>Mass spectrometry</u> : identify the molecular weight and formula of the drugs or chemicals			
9. Teaching and Learning Strategies					
Strategy		Lecturing Homework Quiz Practical laboratory demonstrations			
10. Course Structure					
Week	Hours	Theoretical Required Learning Outcomes	Practical Required Learning Outcomes	Learning method	Evaluation method
1	3+2	UV / visible spectroscopy	Introduction & demonstration to	Theoretical lectures	Paper-based exams

			visible spectrophotometry	Laboratory experiments	
2	3+2	UV / visible spectroscopy	Determination of KMnO ₄ / Beers law	Theoretical lectures Laboratory demonstration	Paper-based exams
3	3+2	UV / visible spectroscopy	Unknown of KMnO ₄ + Quiz	Theoretical lectures Laboratory demonstration	Paper-based exams
4	3+2	Mass Spectrometry	Colorimetric assay tetracycline using FeCl ₃	Theoretical lectures Laboratory demonstration	Paper-based exams
5	3+2	Mass Spectrometry	Unknown of tetracycline using FeCl ₃ method + Quiz	Theoretical lectures Laboratory experiments	Paper-based exams
6	3+2	Infrared Spectrometry	Determination of tetracycline in acidic medium	Theoretical lectures Laboratory demonstration	Paper-based exams
7	3+2	Infrared Spectrometry	Determination of tetracycline in basic medium	Theoretical lectures Laboratory demonstration	Paper-based exams
8	Mid-term exam				
9	3+2	Infrared Spectrometry	Colorimetric assay of streptomycin by maltol method	Theoretical lectures Laboratory demonstration	Paper-based exams
10	3+2	Infrared Spectrometry	Colorimetric assay of streptomycin by maltol method	Theoretical lectures Laboratory demonstration	Paper-based exams
11	3+2	Proton NMR Spectrometry	Unknown of streptomycin maltol method + Quiz	Theoretical lectures Laboratory demonstration	Paper-based exams
12	3+2	Proton NMR Spectrometry	IR chart tutorial	Theoretical lectures	Paper-based exams

				Laboratory demonstration	
13	3+2	C13 NMR Spectrometry	IR chart tutorial	Theoretical lectures Laboratory demonstration	Paper-based exams
14	3+2	C13 NMR Spectrometry	IR chart tutorial	Theoretical lectures Laboratory demonstration	Paper-based exams
15	Students' seminars				
11. Course Evaluation					
<ul style="list-style-type: none">• 20 M Theoretical assessment; (paper-based mid-term exam + quiz + attendance + seminar)• 20 M practical assessment (attendance + quiz + practice)• 60 M paper-based theoretical final exam <hr/> <p>100 M total</p>					
12. Learning and Teaching Resources					
Required textbooks			Spectrometric Identification of Organic Compounds by Silverstein, Bassler and Morrill; Latest edition.		
Main references (sources)			Applications of absorption spectroscopy of organic compounds by Dyer JR; Latest edition. Organic Chemistry by McMurry; Thomason learning CA, USA; Latest edition.		
Percentage of update			1 % change in theoretical lectures		