Jordan University of Science and Technology
Faculty/College of pharmacy
Department of Medicinal Chemistry and Pharmacognosy
2nd semester 2015/2016
Course Specifications

Title & Instructor	
Course Title	Analytical Chemistry and Pharmaceutical Instrumental Analysis Lab
Course Number	Phar 329
Prerequisites	
Instructor	Dua Saeed Alsinglawi, M.Sc. Medicinal chemistry and pharmacognosy Bayan Alshihab, M.Sc. Medicinal chemistry and pharmacognosy
Office Location	D2 Level -2
E-mail	
Teaching Assistant	Noor Alnemrat

Course Aims and Objectives

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

Objectives	Weights
1- to be aware of the safety rules in working in the analytical laboratory and any other labs, and what to do if an accident happens	20%
2- Acquired the experience in handling and proper usage of laboratory glassware's ,equipments and Instruments	30%
3- Learn the way of keeping an accurate and readable record of all experimental work and the way to write a scientific report.	30%
4- Learn some standard methodologies in drug quality control & appreciate the importance and the precision that a quality control requires.	20%

Course Description

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

Text Book & References	
Title (1)	Analytical Chemistry by Gary Christian
Title (2)	Practical Pharmaceutical Chemistry, Beckett and Stenlake
Title (3)	British Pharmacopoeia 2009
References	

Intended Student Learning Outcomes(ISLOs) Upon successful completion of this course, students should be able to:		
ISLOs	**Related Objective(s)**	**Reference(s)**
To handle properly chemicals in the laboratory and be aware of the rules of good laboratory practice.	1	
To become familiar with different volumetric measurements and use laboratory pipettes, burettes and volumetric flasks correctly.	2	
To keep records of all performed analysis in the manner which is required in modern analytical laboratory.	3	
Students will acquire good knowledge about the uses of UV-VISIBLE spectrophotometer and pH-meter	2,3,4	
To solve stoichiometry problems, to convert between different concentrations units (molarity, %, ppm, g/L, etc.)	2,3,4,	
to work both individually and in a team	2,3,4	

Teaching & Learning Methods
1. Lab lectures and Lab notes are designed to achieve the course objectives. **2.** You should read the assigned experiment before the lab and participate in the lab and do whatever it takes for you to grasp this material. Ask questions. **3.** You are responsible for all material covered in the lab. **4.** Make positive class contribution **5.** Please communicate any concerns or issues l either in the lab, or in the office.

Assessment		
Assessment Type	Expected Due Date	Weight
REPORTS & QUIZZES		35%
EVALUATION	Every week	10%
MID TERM EXAM	6^{h} – 7^{th} week	15%
Final Exam Practical and Theoretical	12^{th} – 13^{th} week	40%

Useful Resources
Textbook, References, Class notes

Course Content		
Week	Topics	Lab number in handouts
1	Check-in and Orientation.	Lab number 1
2	Acid-Base Titration : Determination of unknown base solution	Lab number 2
3	Acid-Base Titration : Determination of unknown acid solution	Lab number 3
4	Oxidation-Reduction Titration : Standardization of potassium permanganate solution	Lab number 4
5	Hydrogen Peroxide	Lab number 5
6	Ascorbic acid Tablet.	Lab number 6
7	Aspirin Tablet.	Lab number 7
8	Spectrophotometry: Quantitative analysis of Potassium dichromate	Lab number 8
9	Spectrophotometry: Colourimetric determination of Salicylic acid	Lab number 9
10	Indomethacin capsule / Metformin Tablet	Lab number 10
11	Potentiometric titration: p*Ka* Determination of an unknown acid Limit test	Lab number 11
12	Final Practical Exam	Lab number 12

Additional Notes	
Exams	• All exams are closed book and notes. The final exam is comprehensive (covers all the material). • The format for the exams is generally (but NOT always) as follows: Multiple-choice and short essay questions.
Makeup Exams	• Makeup exam should not be given unless there is a valid excuse. • Arrangements to take an exam at a time different than the one scheduled MUST be made prior to the scheduled exam time.
Drop Date	• Last day to drop the course is before the twelve (12^{th}) week of the current semester.
Cheating	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 متلبساً بالغش فتوقع عليه العقوبات التالية مجتمعة: أ- اعتباره راسباً في ذلك الامتحان أو الاختبار. ب- الغاء تسجيله في بقية المساقات المسجل لها في ذلك الفصل. جـ- فصله من الجامعة لمدة فصل دراسي واحد، و هو الفصل التالي للفصل الذي ضبط فيه.
Attendance	• Excellent attendance is expected. • JUST policy requires the faculty member to assign ZERO grades (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.
Workload	• Average work-load student should expect to spend is 2 hours/week