



Jerash private University
Faculty of Pharmacy
2nd semester, 2016/2017

Course Syllabus

Course Title: : pharmaceutical Analytical Chemistry 1	Course code:1101113
Course Level: 2nd year	Course prerequisite ;0212101
Lecture Time 8-9:30	Credit hours:3 credits

Academic Staff Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr Alaa Al-Ghananeem	lecturer	pharmacy building	12.00-14.00	Alaasami2489@gmail.com

Course module description:

Principles of qualitative and quantitative analysis, methods expressing of the concentrations, principles of volumetric analysis, acid-base Equilibria in aqueous and in nonaqueous solutions, acid-base titration and their applications in both solutions.

Course module objectives:

This course is devoted to the exploration of principles of qualitative and quantitative analysis

Course/ module components

- Books (title , author (s), publisher, year of publication)**

1 -Analytical Chemistry

by Gary D. Christian (editor) sixth edition (2003),ISBN;0471214728 john wiley and sons ,

2-Analytical Chemistry: Principles and Techniques.

By Larry G. Hargis.(editors) (December 17, 1996),Publisher: Pearson Education
POD; Facsimile edition ISBN: 013033507X

Teaching methods:

Lectures, discussion groups, tutorials, problem solving, debates, etc.

Learning outcomes:

- Knowledge and understanding
At the end of this module, student will be able to:
 1. Have a rigorous background in those chemical principles that are of particular importance to analytical chemistry.
 2. Be subjected to traditional techniques of analytical chemistry.
 3. Acquire confidence in his/her ability to obtain high quality analytical data.
- Cognitive skills (thinking and analysis).
- Communication skills (personal and academic).
- Practical and subject specific skills (Transferable Skills).

Assessment instruments

- Short reports and/ or presentations, and/ or Short research projects
- Quizzes.
- Home works
- Final examination: 50 marks

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20
Second examination	20
Final examination: 50 marks	40
Reports, research projects, Quizzes, Home works, Projects	20
Total	100

Course/module academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1)	Course introduction; qualitative and quantitative analysis. Role of analytical chemistry in pharmacy and medicine	
(2)	. Methods of expressing the concentrations (part 1)	
(3)	Methods of expressing the concentrations	

	(part2)	
(4)	Principle of volumetric analysis	
(5)	Applications involving molarity, normality and weight percent calculations.	
(6) First examination	Acid-base Equilibria in aqueous solution and pX concept(x; H^+ , OH^-).	
(7)	pH calculations	
(8)	Buffer solutions and physiological buffers.	
(9)	Neutralization reactions; acid-base titrations, titration curve, factors affecting and theory of indicators.	
(10)	Calculations involving applications..	
(11) Second examination	Titration of polyprotic acids and polyequivalent bases	
(12)	Applications involving determinations of mixtures of acids and mixtures of bases.	
(13)	Acid-base equilibria in nonaqueous solution	
(14)	Titration curves and equivalent point determination.	
(15) Specimen examination (Optional)	Applications involving; carboxylic acids, phenols and amines determinations.	
(16) Final Examination		

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Module references

Books

Students will be expected to give the same attention to these references as given to the Module textbook(s)

1 -Analytical Chemistry
by Gary D. Christian (editor) sixth edition (2003),ISBN;0471214728 john wiley and sons ,

2. Analytical chemistry (an introduction)
by Skoog /West /Holler (Editors) 7th edition (1999),Saunders Golden SunBurst series,ISBN;0-03-022930.

3. Quantitative Analysis
by R.A-Day, JR , A.L-UNDERWOOD (editors) 6th edition (1991),,Prentice-Hall, ISBN;0-13-747361-3.

4- Quantitative analytical chemistry
by James .s.FRITZ, GOERGE H. SCHENK (editors) 5th edition (1987), Prentice – Hall, Englewood Clifts, ISBN;0-205-10480-0.

5- ANALYTICAL CHEMISTRY (principles)
by john H.Kennedy (editor) 1st edition (1984), HARCOURT BRACE JOVANOVIH, ISBN;0-15-502700-x.