The University of Jordan

Faculty: Pharmacy
Department: Pharmaceutical Sciences
Program: Pharmacy and PharmD
Academic Year/ Semester: 2014-2015 second semester

Pharmaceutical Analytical Chemistry (1201201)

Credit hours	**2**	**Level**	**2nd year**	**Pre-requisite**	**---**
Coordinator/ Lecturer	**Dr. Mohammad Khanfar**	**Office number**	**327**	**Office phone**	**23339**
Course website		**E-mail**	**M_khanfar@ju.edu.jo**	**Place**	**College of Pharmacy – 3rd floor**

Office hours					
Day/Time	**Sunday**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**
	9-10		9-10		1-2
		11-12		11-12	

Learning Objectives

At the end of this course the student is expected to have acquired basic knowledge regarding the importance of analysis in pharmaceutical industry, the proper use of pharmacopoeia, the principles of chemical equilibrium and its relation to pharmaceutical analysis and the concept of titremetric analytical methods and how to employ them in real life problems pertaining the following types of reactions:

Acid -base
Precipitation
Complexation
Oxidation –reduction

Intended Learning Outcomes (ILOs):

Successful completion of the course should lead to the following outcomes:

A. Knowledge and Understanding: Student is expected to

A1- Mention the fundamentals of acid-base and precipitimetric titrations as well as the gravimetric analysis and calculation of the basic statistical parameters, and explain the application of these principles in the analysis of drug substances.

A2- Mention the suitable method for analysis of certain substances depending on basic understanding of physico-chemical properties of the chemical compounds.

B. Intellectual Analytical and Cognitive Skills: Student is expected to

Assess and interpret the possible interactions or interferences of some chemical compounds with the selected method of analysis of certain compounds depending on the studied principles.

C. Subject-Specific Skills: Student is expected to

C1- Develop different analytical procedures for the evaluation of different drugs and for quality control of pharmaceutical preparations.

C2. Demonstrate knowledge and critical understanding of essential facts, concepts, principles and theories related to the subject areas identified under knowledge and understanding.

C3. Apply in practice setting the knowledge and understanding required to meet the needs of patients and other health care professional.

C4. Differentiate between different groups of drugs.

D. Transferable Key Skills: Students is expected to

D1- Apply the information technology skills, such as word processing and internet communication and online searches.

D2- Work effectively with the others as a team work in performing the report on the results of an analytical method.

D3- Manage the time in an analytical work effectively.

Course Contents

Content	Reference	Week
Introduction about Pharmaceutical Analysis and some analytical	Analytical chemistry: An introduction (Saunders Golden Sunburst eries)	1

methods	Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.	
Titremetric analysis	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.	*2*
Acid –base titrations	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.	**2**
Aqueous acid –base titrations	Textbook of pharmaceutical analysis. Kenneth A. conors, third Edn.	**3**
Midterm Exam		**4**
Non aqueous acid-base titration	Textbook of pharmaceutical analysis. Kenneth A. conors, third Edn.	**5**
Complexometric titrations	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.	**6**
Precipitation titrations	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A.	**7**

	Skoog , 1997.	
Oxidation reduction reactions	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.	**8**
Quiz		**9**
Determination of metals	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.	**10**
Determination of drugs based on their functional groups	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.	**11**
Final Exam		**12**

Learning Methodology

1- Data show
2- Blackboard
3- Laboratory experiments
4- Group discussion problems
5- Tutorial discussions

Evaluation

Evaluation	Point %	Date
Midterm Exam	**40**	**26/3/2015**
Quiz	**10**	**28-29/5/2015**
Final Exam	**50**	**21/4/2015**

Main Reference

1. Analytical chemistry: An introduction (Saunders Golden Sunburst Series)
2. Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.

References:

1. Textbook of pharmaceutical analysis. Kenneth A. Conors, third Edn.

2. Analytical chemistry: An introduction (Saunders Golden Sunburst Series)
3. Author: Donald west, F. James Holler, Douglas A. Skoog , 1997.