



The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	Pharmaceutical Analytical Chemistry Practical
2	Course number	1201202
3	Credit hours (theory, practical)	1
	Contact hours (theory, practical)	Sunday and Tuesday 12-1
4	Prerequisites/corequisites	Pharmaceutical Analytical Chemistry, 1201201
5	Program title	Pharmacy and PharmD
6	Program code	
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Pharmacy
9	Department	Department of Pharmaceutical Sciences
10	Level of course	Second year
11	Year of study and semester (s)	2016 Second semester
12	Final Qualification	
13	Other department (s) involved in teaching the course	
14	Language of Instruction	English
15	Date of production/revision	28/02/2016

16. Course Coordinator:

Dr. Mohammad Khanfar
Office number: 327
Office phone number: 23339
Office hours: Sunday and Tuesday 12-1

17. Other instructors:

N.A.

18. Course Description:

The course describes some basic principles and analysis, with emphasis on titrimetric analysis, tools and methods. Students are required to learn how to experimentally conduct titrations as a method to calculate the amount and concentration of the target material.

19. Course aims and outcomes:

<p>A- Aims: At the end of this course the student is expected: Acquired basic practical skills and 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 titrimetric analytical methods and how to employ them in real life problems pertaining the following types of reactions: Acid -base Precipitation Complexation Oxidation -reduction</p> <p>Program Competencies Achieved: 1. Identify physiochemical properties of drug substances 2. Identify analytical method development and validation used in pharmaceutical analysis 3. Identify the principles of stability testing and shelf-life determination 4. Demonstrate the ability to perform pharmaceutical calculations</p>
<p>B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...</p>
<p>Successful completion of the course should lead to the following outcomes:</p>
<p>A. Knowledge and Understanding: Student is expected to</p>
<p>A1- Mention the fundamentals of acid-base and precipitometric 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.</p>
<p>A2- Mention the suitable method for analysis of certain substances depending on basic understanding of physico-chemical properties of the chemical compounds.</p>
<p>B. Intellectual Analytical and Cognitive Skills: Student is expected to</p>
<p>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.</p>
<p>C. Subject-Specific Skills: Student is expected to</p>
<p>C1- Develop different analytical procedures for the evaluation of different drugs and for quality control of pharmaceutical preparations.</p>
<p>C2. Demonstrate knowledge and critical understanding of essential facts, concepts, principles and theories related to the subject areas identified under knowledge and understanding.</p>
<p>C3. Apply in practice setting the knowledge and understanding required to meet the needs of patients and other health care professional.</p>
<p>C4. Differentiate between different groups of drugs.</p>
<p>D. Transferable Key Skills: Students is expected to</p>
<p>D1- Apply the information technology skills, such as word processing and internet communication and online searches.</p>
<p>D2- Work effectively with the others as a team work in performing the report on the results of an analytical method.</p>
<p>D3- Manage the time in an analytical work effectively.</p>

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Orientation	1	Dr. Mohammad Khanfar	A1-A2	Reports, evaluation, and quizzes	Analytical chemistry: An introduction (Saunders Golden Sunburst eries) Author: Donald west, F. James Holler, Douglas A. Skoog, 1997.
Laboratory Measurements	2	Dr. Mohammad Khanfar	A1, B	Reports, evaluation, and quizzes	
Standardization methods	3	Dr. Mohammad Khanfar	C1-C4	Reports, evaluation, and quizzes	
Neutralization Capacity of antacid Tablets	4	Dr. Mohammad Khanfar	C1-C4	Reports, evaluation, and quizzes	
Determination of ammonium chloride and Zinc oxide in raw materials	5	Dr. Mohammad Khanfar	C1-C4	Reports, evaluation, and quizzes	
Midterm Exam	6	Dr. Mohammad Khanfar			
Application of Non-aqueous titration	7	Dr. Mohammad Khanfar	A1, B, D1-D3	Reports, evaluation, and quizzes	
Argentometric Titrations	8	Dr. Mohammad Khanfar	A1, B, D1-D3	Reports, evaluation, and quizzes	
Compleximetric Titrations	9	Dr. Mohammad Khanfar	A1, B, D1-D3	Reports, evaluation, and quizzes	
Oxidation-reduction titrations	10	Dr. Mohammad Khanfar	A1, B, D1-D3	Reports, evaluation, and quizzes	
Applications on Oxidation-reduction titrations	11	Dr. Mohammad Khanfar	A1, B, D1-D3	Reports, evaluation, and quizzes	
Final Exam	12	Dr. Mohammad Khanfar			

21. Teaching Methods and Assignments:

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

22. Evaluation Methods and Course Requirements:

Evaluation	Point %	Date
Reports	<u>10</u>	<u>For every week</u>
Quizzes	<u>10</u>	<u>3-4 quizzes in the semester</u>
Evaluation based on practical work	<u>10</u>	
Midterm Exam	<u>30</u>	<u>8-12/3/2016</u>
Final Exam	<u>40</u>	<u>26-30/4/2016</u>

23. Course Policies:

A- Attendance policies:

Obligatory

First warning – with 4 absences

Last warning – with 5 absences

Failing in the subject – with 6 absences

B- Absences from exams and handing in assignments on time:

Make up exams only for official excuses

C- Health and safety procedures:

Should be followed.

Described and discussed with students in the first week.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Prohibited, and penalties are applied according to the University policies.

E- Grading policy:

See evaluation methods

24. Required equipment:

Balances, burettes, standard glassware, lab coat, eye goggles.

25. References:

A- Required book (s), assigned reading and audio-visuals:
1) Lab. Manual
2) Analytical chemistry: An introduction (Saunders Golden Sunburst eries)
Author: Donald west, F. James Holler, Douglas A. Skoog , 1997

B- Recommended books, materials, and media:
Textbook of pharmaceutical analysis. Kenneth A. conors, third Edn.

26. Additional information:

Name of Course Coordinator: Dr. Mohammad Khanfar Signature: ----- Date: 28/2/216

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: Dr. Mayadah Shehadeh Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

Head of Department
Assistant Dean for Quality Assurance
Course File