Philadelphia University	PHILADELPHIA UNIVERSITY THE WAY TO THE FUTURE	**Approved Date:** 14/10/2021
Faculty: Pharmacy		**Issue:** 1
Department:---------		**Credit Hours:** 1hr
Academic Year: 2021/2022	**Course Syllabus**	**Bachler:** 1st year

Course Information

Course No.	Course Title			Prerequisite
0510123	Pharmaceutical Analytical Chemistry Laboratory			0510122
Course Type			**Class Time**	**Room No.**
☐ Univirsity Requirement ☐ Major Requirement	☐ Fuclty Requirement ☐ Elective	■ Compulsory	**Sec. 1** S : 2:15-4:00 **Sec. 2** M: 2:15-4:00	514

Instructure Information

Name	Office No.	Phone No.	Office Hours	E-mail
Coordinator: Dr. Ahmad Abdullah Najjar	Faculty of pharmacy 516			a.najjar@philadelphia.edu.jo
Lecturer: Eman Alshahrori	Faculty of pharmacy 616	Ext.2359	Sun.-Thu. 12-1	eshahrorri@philadelphia.edu.jo

Course Delivery Method

■ Blended	☐ Online	☐ Physical
Learning Model		
Percentage	**Synchronous**	**Asynchronous**	**Physical**
		50%	**50%**

Course Description

The course is designed to provide the student with basic information about practical analytical chemis
This course introduces the equipment as well as the experimental techniques of quantitative analysis a
helps the students to develop skills in their use. It is a practical picture of the theoretical course,
exemplified by doing various experiments in acid-base titrations in aqueous and non-aqueous solutio
precipitation titration, reduction-oxidation titration and their applications.

Course Learning Outcomes

Number	Outcome	Corresponding Competencies	Corresponding Program Outcomes
Knowledge			
K1	Demonstrate the knowledge of the main laboratory equipments (analytical balances, burets, pipette, deferent glassware, heating mantel, sterres,…etc.) and knowledge of sampling, samples handeling , sample treatemnts and the principles of various volumetric methods of analysis used for qualitative and quantitative analysis for different chemical analytes.	K_p1	C1
Skills			
S1	Practicing the correct way of handling glassware and performing analysis of defferent samples using different analytical techniques	Sp6	C12
S2	Practice writing objectives & ability to represent the observation ,data collected & results in a report sheet as team work	Sp6,Sp2	C12,C8
S3	Hand-eye coordination tasks such as determination titration end point	Sp9	C15
S4	Student will be able to communicate with instructors and university staff,also how to work independently and as a part of a team.	Sp6,Sp2	C12,C8
S5	Problem solving dealing with titration ,perform data analysis and calculation realated.	Sp2,Sp9	C8,C15

Learning Resources

Course Textbook	Pharmaceutical Analytical Chemistry Laboratory Manual, Philadelphia University
Supporting References	Analytical Chemistry by Gary D. Christian (editor) 7th edition (2013), ISBN: 978-0-470-88757-8 John Wiley and sons
Supporting Websites	
Teaching Environment	☐ **Classroom** ■ **laboratory** ■ **Learning Platform** ☐ **Other**

Meetings and Subjects Time Table

Week	Topic	Learning Method*	Task	Learning Material
1	a. Vision and mission of faculty of pahramcy. b. Course syllabus. c. Safety and laboratory rules.	Lecture		Lab manual Exp.1
2	Laboratory equipments & practice the use of burette (titration technique)	Practical	Reports	Lab manual Exp.2
3	Calibration of burette & practice the use of analytical balance			Lab manual Exp.3
4	Neutralization titration in aqueous medium	Lecture	Quizzes	Lab manual Exp.4
5	Back titration (Assay Aspirin)			Lab manual Exp.5
6	Potentiometric titration			Lab manual Exp.6
7	Gravimetric analysis			Lab manual Exp.7
8	Precipitation titration (Agrentometric)			Lab manual Exp.8
9	Mid term (Lab. off)			----------
10	Redox titration (Permanganate titration KMnO4			Lab manual Exp.9
11	Comlexometric titration with EDTA			Lab manual Exp.10
12	**Final Exam**			

*Includes: lecture, flipped Class, project based learning, problem solving based learning, collaboration learning.

Course Contributing to Learner Skill Development

Using Technology
▪ Using M.S word to Doing homework and simple reports. ▪ Using M.S Excel to draw data.
Communication Skills
Students will be able to communicate with instructors and university staff, also how to work independently and as a part of a team. And learn laboratory safety and self protection rules.
Application of Concept Learnt
Pharmacetical anlysis lab in any work field related to pharmacy. Educational and research labs performing chemical reactions.

Assessment Methods and Grade Distribution

Assessment Methods	Grade	Assessment Time (Week No.)	Course Outcomes to be Assessed
Reports	**30%**	Continous	K1,S2,S4
Quizzes	**20%**	Continous	K1,S2,S5
Practical exam	**10%**	9th	K1 S1-S5
Final Exam	**40%**	12th	K1,S5
Total	**100%**		

* Include: quizzes, in-class and out of class assignment, presentations, reports, videotaped assignment, group or individual project.

Alignment of Course Outcomes with Learning and Assessment Methods

Number	Learning Outcomes	Learning Method*	Assessment Method**
Knowledge			
K1	By the end of this course the sudent should be demonstrate proficiency in usage of laboratory equipment (analytical balances, burets, glassware, instrumentation) exposed to in this course,and they should be know the principles of various volumetric methods of analysis and perform qualitative and quantitative analysis for different chemical agents.	Lecture	Exams/Quizzes/ Reports
Skills			
S1	Learn laboratory safety and self protection rules	Practical work	Reports Final practical
S2	Practice writing objectives & ability to represent the observation ,data collected & results in a report sheet as team work		
S3	Hand-eye coordination tasks such as determination titration end point		
S4	Student will be able to communicate with instructors and university staff,also how to work independently and as a part of a team.		
S5	Problem solving dealing with titration ,perform data analysis and calculation realated.		

*Include: lecture, flipped class, project based learning, problem solving based learning, collaboration learning.
** Include: quizzes, in-class and out of class assignments, presentations, reports, videotaped assignments, group or individual projects.

Course Polices

Policy	Policy Requirements
Passing Grade	The minimum pass for the course is (50%) and the minimum final mark is (35%).
Missing Exams	• Anyone absent from a declared semester exam without a sick or compulsive excuse accepted by the dean of the college that proposes the course, a zero mark shall be placed on that exam and calculated in his final mark. • Anyone absent from a declared semester exam with a sick or compulsive excuse accepted by the dean of the college that proposes the course must submit proof of his excuse within a week from the date of the excuse's disappearance, and in this case, the subject teacher must hold a compensation exam for the student. • Anyone absent from a final exam with a sick excuse or a compulsive excuse accepted by the dean of the college that proposes the material must submit proof of his excuse within three days from the date of holding that exam.
Attendance	The student is not allowed to be absent more than (15%) of the total hours prescribed for the course, which equates to two lectures (days). If the student misses more than (15%) of the total hours prescribed for the course without a satisfactory or compulsive excuse accepted by the dean of the faculty, he is prohibited from taking the final exam and his result in that subject is considered (zero), but if the absence is due to illness or a compulsive excuse accepted by the dean of the college that The article is introduced, it is considered withdrawn from that article, and the provisions of withdrawal shall apply to it.
Academic Integrity	Philadelphia University pays special attention to the issue of academic integrity, and the penalties stipulated in the university's instructions are applied to those who are proven to have committed an act that violates academic integrity, such as cheating, plagiarism (academic theft), collusion, intellectual property rights.

Program Learning Outcomes to be Assessed in this Course

Number	Learning Outcome	Course Title	Assessment Method	Targeted Performance level

Description of Program learning Outcomes Assessment Method

Number	Detailed Description of Assessment

Assessment Rubric of the Program Learning Outcomes
