

Philadelphia University	 <b>PHILADELPHIA UNIVERSITY</b> <small>THE WAY TO THE FUTURE</small>	Approved Date: 10/2022
Faculty: Pharmacy		Issue: 1
Department: -	<b>Course Syllabus</b>	Credit Hours: 3
Academic Year: 2022/2023		Bachelor:

### Course Information

Course No.	Course Title	Prerequisite
0520322	Pharmaceutics 2	0520303
Course Type		Class Time
<input type="checkbox"/> University Requirement <input type="checkbox"/> Faculty Requirement <input type="checkbox"/> Major Requirement <input type="checkbox"/> Elective <input checked="" type="checkbox"/> Compulsory		Room No.

### Instructure Information

Name	Office No.	Phone No.	Office Hours	E-mail

### Course Delivery Method

<input type="checkbox"/> Blended	<input type="checkbox"/> Online	<input checked="" type="checkbox"/> Physical
Learning Model		
Percentage	Synchronous	Asynchronous
	0	0
		100%

### Course Description

This course is intended to provide the knowledge and skills necessary for the continued developing roles of pharmacist. The course will cover the formulation of different types of Semisolid dosage forms as skin drug delivery system, Pharmaceutical inserts suppositories and pessaries, aerosols also learn about pharmaceutical products stability and stability testing.

### Course Learning Outcomes

Number	Outcome	Corresponding Program Outcomes	Corresponding Program Comencies
Knowledge			
<b>K1</b>	Understand the concepts of different types of semisolid dosage forms (ointments, creams, gels, pastes, suppositories), and transdermal patches	KP1, KP6	C1, C6
<b>K2</b>	Understand the biopharmaceutical basis of transdermal, pulmonary, rectal and vaginal delivery systems.	KP1, KP6	C1, C6
<b>K3</b>	Explain and illustrate the various	KP1, KP6	C1, C6

	materials and production approaches of relevant pharmaceutical preparations.		
<b>K4</b>	Understand the concept of pharmaceutical stability and its application on pharmaceutical preparations.	KP1, KP6	C1, C6
<b>Skills</b>			
<b>S1</b>	Demonstrate capability of choosing the appropriate preparation method for a particular pharmaceutical product	SP1	C7
<b>S2</b>	Demonstrate and Apply physicochemical and biopharmaceutic concepts to dosage form design.	SP2	C8
<b>S3</b>	Evaluate and solve instability problems encountered in the preparation of semisolid dosage forms.	SP2, SP9	C8, C15

### Learning Resources

<b>Course Textbook</b>	<p><b>1. Pharmaceutical Dosage Forms and Drug Delivery Systems by Loyd V. Allen, Jr &amp; Howard C. Ansel, Lippincott Williams &amp; Wilkins 10th Edition ,2014 .</b></p> <p><b>2. Aulton’s Pharmaceutics, The Design and Manufacture of Medicines, Edit.: Michael E. Aulton, Kevin M. G. Taylor Pub.: Churchill Livingstone, 4th edition, 2013.</b></p>
<b>Supporting References</b>	<p>1. Martin’s Physical Pharmacy and Pharmaceutical Sciences By : Patrick J. Sinko, Lippincott Williams &amp; Wilkins , 2006, 5th Edition</p> <p>2. Modern Pharmaceutics by Gilbert S. Banker (Editor), Christopher T. Rhodes (Editor) 4th edition (June 15, 2002), Marcel Dekker; ISBN: ISBN: 0824706749</p> <p>3. Merck Index: An Encyclopedia of Chemicals, Drugs, &amp; Biologicals by Merck, Co, Maryadele J. Oneil (Editor), Ann Smith (Editor) 13th edition (October 2001), Merck &amp; Co; ISBN: 0911910131</p> <p>4. The Theory and Practice of Industrial Pharmacy by Leon Lachman, Herbert A. Lieberman, Joseph L. Kanig. 3rd edition (August 1986), Lea &amp; Febiger; ISBN: 0812109775</p> <p>5. Physical Pharmacy: Physical Chemical Principles in the Pharmaceutical Sciences by Alfred Martin, Pilar Bustamante, A.H.C. Chun (Illustrator) 622 pages 4th edition (January 15, 1993), Lea &amp; Febiger; ISBN: 0812114388</p> <p>6. Handbook of Pharmaceutical Excipients by Arthur H. Kibbe (Editor), Ainley Wade, Paul J. Weller 665 pages 3rd edition Vol 3 (January 15, 2000), Amer. Pharmaceutical Assoc.; ISBN: 091733096X</p> <p>7. Remington: The Science and Practice of Pharmacy by Alfonso R. Gennaro (Editor) 20th edition (December 15, 2000), Lippincott, Williams &amp; Wilkins; ISBN: 0683306472</p>
<b>Supporting Websites</b>	<a href="http://library.philadelphia.edu.jo/st_en.htm">http://library.philadelphia.edu.jo/st_en.htm</a>
<b>Teaching Environment</b>	<input checked="" type="checkbox"/> Classroom <input type="checkbox"/> laboratory <input type="checkbox"/> Learning Platform <input type="checkbox"/> Other

### Meetings and Subjects Time Table

Week	Topic	Learning Method*	Task	Learning Material
1		Lecture		Course

	Vision and Mission of Faculty of Pharmacy Course Syllabus Semisolid dosage forms	Flipped learning		Syllabus Textbooks
2	Types of skin preparation Ingredients used in skin preparations	Lecture Problem solving based learning	Short report	Textbook 1
3	Dispensing of external preparations. Ointments	Lecture		Textbook 1
4	Creams , gels and pastes	Lecture	Case study	Textbook 1
5	Features of dermatological preparations	Lecture		Textbook 1
6	Transdermal Drug Delivery system	Lecture		Textbook 1
7	Transdermal patches	Lecture		Textbook 1
8	Pharmaceutical inserts Suppositories and Pessaries	Lecture		Textbook 2
9	Suppository bases. Preparation of suppositories.	Lecture		Textbook 1
10	Biopharmaceutical factor affecting suppository bioavailability Containers for suppositories	Lecture	Homework	Textbook 1
11	<b>Midterm Exam</b>			Textbook 1
12	Pharmaceutical Aerosol: Introduction. Operation of aerosol package. Product formulation.	Lecture		Textbook 1
13	Propellants. Valves. Aerosol containers.	Lecture		Textbook 1
14	Product stability and stability testing Chemical stability Physical stability	Lecture	Case study	Textbook 2
15	Microbiological stability Accelerated stability testing	Lecture		Textbook 2
16	<b>Final Exam</b>			

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

### Course Contributing to Learner Skill Development

Using Technology
<ul style="list-style-type: none"> <li>• Use pharmaceutical techniques to calculate and find correct answers to solve simple problems in compounding and despising.</li> <li>• Use pharmacopeia and references guidelines to develop processes, procedures, to produce</li> </ul>

pharmaceuticals of appropriate quality and quality assures them. <ul style="list-style-type: none"> <li>• Read, evaluate, and interpret numerical, chemical and general scientific information.</li> <li>• Formulate significant research questions, design experiments, use appropriate chemical instrumentation, and analyze and interpret data.</li> <li>• Search and use the chemical literature in both printed and electronic formats.</li> </ul>
<b>Communication Skills</b>
<ul style="list-style-type: none"> <li>• Demonstrate ability to prepare relevant reports in a clear systematic way.</li> <li>• Be able to adapt and accommodate team working.</li> <li>• Access resources related to the description and application of the methods used for various unit operations.</li> </ul>
<b>Application of Concept Learnt</b>
Practical application of semisolid dosage forms, aerosol and transdermal and characterization in the corresponding practical course.

### Assessment Methods and Grade Distribution

Assessment Methods	Grade	Assessment Time (Week No.)	Course Outcomes to be Assessed
Mid Term Exam	% 30	11 <sup>th</sup> week	K1-K3, S1- S3
Term Works*	% 30	Continuous	S1-S3
Final Exam	% 40	16 <sup>th</sup> week	K1-K4 S1- S3
<b>Total</b>	<b>%100</b>		

\* 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	Corresponding Competencies	Learning Method*	Assessment Method**
<b>Knowledge</b>				
<b>K1</b>	Understand the concepts of different types of semisolid dosage forms (ointments, creams, gels, pastes, suppositories), and transdermal patches	KP1, KP6	Lecture  Problem solving based learning	Exam/Quiz questions in-class and out of class assignments
<b>K2</b>	Understand the biopharmaceutical basis of transdermal, pulmonary, rectal and vaginal delivery systems.	KP1, KP6	Lecture  Flipped learning	Exam/Quiz questions videotaped assignments
<b>K3</b>	Explain and illustrate the various materials and production approaches of relevant pharmaceutical preparations.	KP1, KP6	Lecture	Exam/Quiz questions
<b>K4</b>	Understand the concept of pharmaceutical stability and its application on pharmaceutical	KP1, KP6	Lecture  Problem	Exam/Quiz questions Short report

	preparations.		solving based learning	
<b>Skills</b>				
<b>S1</b>	Demonstrate capability of choosing the appropriate preparation method for a particular pharmaceutical product	SP1	Problem solving based learning  Project-based learning  Flipped learning	Exam/Quiz questions
<b>S2</b>	Demonstrate and Apply physicochemical and biopharmaceutic concepts to dosage form design.	SP2, SP9	Problem solving based learning  Project based learning	Exam/Quiz questions
<b>S3</b>	Evaluate and solve instability problems encountered in the preparation of semisolid dosage forms.	SP2	Problem solving based learning Collaborative learning	Exam/Quiz questions  Case study

\*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
<b>Passing Grade</b>	The minimum pass for the course is (50%) and the minimum final mark is (35%).
<b>Missing Exams</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul>
<b>Attendance</b>	The student is not allowed to be absent more than (15%) of the total hours prescribed for the course, which equates to six lecture days (n t) and seven 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.
<b>Academic Integrity</b>	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**

<b>Number</b>	<b>Learning Outcome</b>	<b>Course Title</b>	<b>Assessment Method</b>	<b>Targeted Performance level</b>

### **Description of Program learning Outcomes Assessment Method**

<b>Number</b>	<b>Detailed Description of Assessment</b>

### **Assessment Rubric of the Program Learning Outcomes**

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