



Course Specification

— (Bachelor)

Course Title: Pharmaceutics 1

Course Code: : PHCU 332

Program: Pharmaceutical Sciences

Department: Pharmaceutics

College: Pharmacy

Institution: Najran University

Version: 3

Last Revision Date: 20 August 2024

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A. General information about the course:

1. Course Identification

1. Credit hours: 3 (2+1)

2. Course type

A. ☐ University ☐ College ☐ Department ☐ Track ☒ Program
B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (6th Level, 3rd year)

4. Course general Description:

This course is designed to explain the different type of dosage forms as well as help students to understand the underlying concepts in formulation design of liquid dosage forms. The main topic cover in this course includes pharmaceutical solutions, preparation methods, different type of pharmaceutical solutions and their use, pharmaceutical emulsions and suspensions.

5. Pre-requirements for this course (if any):

PHCU 231

6. Co-requisites for this course (if any):

N/A

7. Course Main Objective(s):

1. Study the introduction of different dosage forms, classification, and route of administration for different dosage form.
2. Study concept of the liquid dosage forms, advantages and disadvantages, type of liquid dosage forms, preparation method and applications. Moreover, introduction to solid and semisolid dosage form as well as overview of novel drug delivery system are also included in this course.
3. Understand prescription and dose calculation for child as well as adult.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4	Distance learning		



3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	30
3.	Field	0
4.	Tutorial	0
5.	Others (specify)	0
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Demonstrate the outline of different dosage forms	K1	Lectures	Written exam Assignments
1.2	Demonstrate the understanding related to physicochemical properties of ingredients used in different dosage forms	K3	Lectures	Written exams Assignments
...				
2.0	Skills			
2.1	Demonstrate the preparation of different dosage forms and pre-formulation considerations for pharmaceutical formulations	S3	Lectures Lab work	Written Exams Practical exams Assignments
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate ability to work independently and professionally on related topics	V1	Problem-based learning Lectures	Assignments Observation card

C. Course Content

No	List of Topics/ Theoretical	Contact Hours
1.	General introduction about the pharmaceuticals, pharmaceutical terms and definitions of all dosage forms.	3
2.	Classification of dosage forms and routes of administration of different dosage forms.	3
3.	Prescription and Calculation of dose for adult and children.	3
4.	Liquid Dosages Forms: Definition and types of liquid dosage form, solubility, formulation components of liquid dosage form.	3
5.	Pharmaceutical solution: preparation of solution, different types of solution used in pharmacy.	3
6.	Aqueous Solution, <i>Oral Solutions</i> : Preparations for Oral Solution, Syrup, Elixirs, Tinctures, Linctuses, Gargles And Mouth Washes.	3
7.	Aqueous Solution, <i>Topical Solutions and Tinctures</i> : Sprays, Aluminum Acetate Topical Solution, Calcium Hydroxide Topical Solution, Hydrogen Peroxide Topical Solution, Povidone Iodine Topical Solution, Lotion, throat paint, Iodine tincture.	3
8.	Non-aqueous Solution, External liquid preparation instilled into body cavities	2
9.	Biphasic liquid dosage form: suspensions and emulsions official in pharmacopoeia	3
10.	Introduction to different types of semisolid dosage form, solid dosage form	3
11.	Introduction to Drug Delivery System (DDS)	1
Total		30

No	List of Topics/ Theoretical	Contact Hours
1.	Pharmaceutical Calculation Arabic and Roman Numeral, Fraction and Decimal, Ratio and Proportion, Percent concentration and Expression and Dilution and Concentration.	4
2.	System of Measurement The metric System, Apothecaries system, The Avoirdupois system, The House hold system and Interconversions	2
3.	Aromatic Water (1).Preparation of Camphor water B.P (2). Preparation of Chloroform water	2
4.	Iodine Solution Preparation of iodine paint	4
5.	Lotion Preparation of calamine lotion	4
6.	Syrups Preparation of simple syrup	2



7.	Paste Preparation of zinc oxide paste	2
8.	Ointments (1). Preparation of white simple ointment (2). Preparation of zinc oxide ointment	4
9.	Emulsion (1). Preparation of emulsion from fixed oil by wet gum method. (2). Preparation of emulsion from fixed oil by dry gum method. (3). Preparation of emulsion from mineral oil by wet gum method. (4). Preparation of emulsion from mineral oil by dry gum method.	4
10.	Preparation of suspensions	2
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz	4-5	10%
2.	Midterm Exam	7-9	20%
3.	Assignments	15	10%
...	Observation card	15	5%
	Quiz (Practical)	12-15	5%
	Practical Exam	16	10%
	Final Exam	17-19	40%
	Total		100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	<ol style="list-style-type: none"> 1. Pharmaceutics: The science of dosage form design, edited by A.E. Aulton 2. Pharmaceutical Dispensing and Compounding: - J. Marriott, KA Wilson, CA Langley
Supportive References	<ol style="list-style-type: none"> 3. Pharmaceutics: The science of dosage form design, edited by A.E. Aulton 4. Pharmaceutical Dispensing and Compounding: - J. Marriott, KA Wilson, CA Langley
Electronic Materials	<ol style="list-style-type: none"> 5. https://sdl.edu.sa/SDLPortal/en/Publishers.aspx 6. http://dlaf.nu.edu.sa/en/e-libraries 7. http://www.nu.edu.sa/en/web/deanship-of-libraries-affairs/85



	<p>8. http://lib.nu.edu.sa/DigitalLibrary.aspx</p> <p>9. https://www.journals.elsevier.com/international-journal-of-pharmaceutics/</p> <p>10. https://www.journals.elsevier.com/colloids-and-surfaces-b-biointerfaces</p>
Other Learning Materials	11. Computer-based programs/CD, professional standards or regulations and software.

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Suitable lecture room equipped with data show and internet access Suitable labs equipped with health and safety tools.
Technology equipment (projector, smart board, software)	Computer Internet access Data show
Other equipment (depending on the nature of the specialty)	Computer Internet access Data show

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of students assessment	Examination committee	Direct
Quality of learning resources	Course coordinator and students	Indirect
The extent to which CLOs have been achieved	Course coordinator	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	PHARMACEUTICS DEPARTMENT COMMITTEE
REFERENCE NO.	14460216-1060-00001
DATE	21/08/2024