



T-104
2022

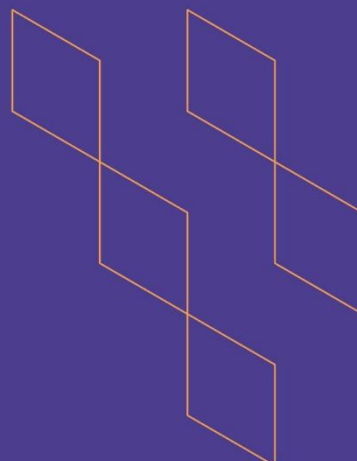
Course Specification





T-104
2022

Course Specification



Course Title:	Drug Delivery Systems
Course Code:	434-PHU-2
Program:	Pharmaceutical Sciences
Department:	Pharmaceutics
College:	Pharmacy
Institution:	Najran University
Version:	1
Last Revision Date:	20/12/2023



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A. General information about the course:

Course Identification	
1. Credit hours:	2 (2+0)
2. Course type	
a. University <input type="checkbox"/>	College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Track <input type="checkbox"/> Others <input type="checkbox"/>
b. Required <input type="checkbox"/>	Elective <input checked="" type="checkbox"/>
3. Level/year at which this course is offered:	Level 8/ 4 th year
4. Course general Description	
The course is designed to familiarize the students with formulation or a device that enables the administration of a pharmaceutical/therapeutic substance into the body that improves its efficacy and safety by controlling the rate, time, and place of drug release into a human body.	
5. Pre-requirements for this course (if any): NA	
6. Co- requirements for this course (if any): NA	
7. Course Main Objective(s)	
I. To provide concept and knowledge in drug delivery and recent development in the field.	
II. To study the approaches and considerations in the design of drug delivery systems.	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	30	100
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> Traditional classroom E-learning 		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

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



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 Knowledge and understanding related to drug delivery	K1	Lectures	Theoretical exams (Essay exam, MCQ, Quizzes); Presentation,
2.0	Skills			
2.1	Demonstrate ability to solve/answer problem related to drug delivery	S3	Lectures, Group discussion	Theoretical exams, Presentations
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate ability to present independently and professionally on related topic.	V1	Problem-based learning	Presentation, Observation card
...				



C. Course Content

No	List of Topics (Theory)	Contact Hours
i.	Introduction to drug delivery system (Overview, physiological environment, influencing factors)	4
ii.	Drug release perspectives involved in drug delivery (Local, systemic, depot, delayed, site-specific to tissue/organ, intracellular)	6
iii.	Approaches/Strategies to drug delivery (Conventional Vs. carrier-mediated; Stimuli-responsive; permeation enhancer, prodrug, ligand-conjugated)	6
iv.	Materials/System involved in drug delivery (Polymeric/lipidic/inorganic material; Smart/stimuli-responsive material; nanomaterials; hydrogel; biocompatible/biodegradable material)	6
v.	Drug delivery system as per administration routes (Parenteral Vs Non-parenteral [Buccal, nasal, ocular, pulmonary, transdermal, delivery to female reproductive system])	8
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quiz exam -I	5	05%
2.	Midterm exam	7-9	25%
3.	Quiz exam -II	12	05%
4.	Presentation	15	10%
5.	Observation card	1-15	05%
6.	Final Theory exam	17-19	50%

*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. Drug Delivery: Fundamentals and Applications. Anya Hillery, Kinam Park. CRC Press, 2017 2. Drug Delivery: Principles and Applications. Binghe Wang, Longqin Hu, Teruna J. Siahaan. Wiley Science, 2016. 3. Power point slides/word file
Supportive References	<ol style="list-style-type: none"> 1. Remington: The Science and Practice of Pharmacy, 22nd Edition, 2013, edited by Loyd V. Allen Jr.
Electronic Materials	https://sdl.edu.sa/SDLPortal/en/Publishers.aspx https://www.nu.edu.sa/en/web/deanship-of-libraries-affairs/85
Other Learning Materials	https://www.elsevier.com/products/journals

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	<ol style="list-style-type: none"> 1. Suitable lecture room equipped with data show and internet and sufficient number of seats. 2. Suitable computer laboratory with internet and sufficient number of seats.
Technology equipment (projector, smart board, software)	Computers, data show, sound systems and internet
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students and the Head of the department	<ol style="list-style-type: none"> 1. Indirect (survey) 2. Head of the department evaluates the faculty member
Effectiveness of students' assessment	Head of department, faculty, and student	<ol style="list-style-type: none"> 1. Checking marking by the students themselves. 2. Using the help of other members in reviewing the quizzes and exams
Quality of learning resources	Students	Survey: Instructor's assessment by students
The extent to which CLOs have been achieved	Quality and development unit	Course specifications are periodically reviewed at Departmental level.
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Pharmaceutics Department Council
REFERENCE NO.	Department meeting No. 13
DATE	25/12/2023

