



**DR. B. C. ROY COLLEGE OF PHARMACY & AHS, DURGAPUR
(NBA Accredited for UG Pharmacy Program)**

VIDEO & SUPPLEMENTARY MATERIAL POSTING

FACULTY: SbR

PROGRAM: B. PHARM

Course Code: 7.3.T & PT-716B

Course Name: INTRODUCTION TO NDDS CONCEPTS / NOVEL DRUG DELIVERY SYSTEMS

“Some books are to be tasted, others to be swallowed, and some few to be chewed and digested: that is, some books are to be read only in parts; others to be read but not curiously; and some few to be read wholly, and with diligence and attention.”

- Sir Francis Bacon (1561 - 1626)
English Philosopher & Statesman

BASICS OF SYLLABUS PORTION TO BE COVERED

Scope: This subject is designed to impart basic knowledge on the area of novel drug delivery systems.

Objectives: Upon completion of the course student shall be able

1. To understand various approaches for development of novel drug delivery systems.
2. To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation.

Course content:

Unit-I

10 Hours

Controlled drug delivery systems: Introduction, terminology/definitions and rationale, advantages, disadvantages, selection of drug candidates. Approaches to design controlled release formulations based on diffusion, dissolution and ion exchange principles. Physicochemical and biological properties of drugs relevant to controlled release formulations

Polymers: Introduction, classification, properties, advantages and application of polymers in formulation of controlled release drug delivery systems.



DR. B. C. ROY COLLEGE OF PHARMACY & AHS, DURGAPUR (NBA Accredited for UG Pharmacy Program)

Unit-IV

10Hours

Targeted drug Delivery: Concepts and approaches advantages and disadvantages, introduction to liposomes, nanoparticles and their applications.

Unit-V

05 Hours

Ocular Drug Delivery Systems: Introduction, intra ocular barriers and methods to overcome –Preliminary study, ocular formulations and ocuserts

Intrauterine Drug Delivery Systems: Introduction, advantages and disadvantages, development of intra-uterine devices (IUDs) and applications.

Suggested Books for the Course (with links):

Sl. No.	Book Name, Ed., Vol	Authors	Weblink(s)
1.	Novel Drug Delivery Systems, 2nd Ed, [Drugs and Pharmaceutical Sciences Series, Vol 50]*	Y. W. Chien	Download [28 MB]
2.	Controlled Drug Delivery - Fundamentals and Applications, 2nd Ed [Drugs and Pharmaceutical Sciences Series, Vol 29]*	J. R. Robinson, V. H. L. Lee, Ed.	Download [10 MB]
3.	Remington: The Science and Practice of Pharmacy, 21st Ed {Chapter 47: Extended Release and Targeted Drug Delivery systems}** -See respective class for chapter links	Phillip B. Gerbino Ed.	Download [CAUTION: 969 MB]
4.	Handbook of Pharmaceutical Controlled Release Technology*** {FOR ADVANCED STUDENTS}	D. L. Wise Ed.	Download [6 MB - chm format]
5.	Encyclopedia of Controlled Drug Delivery*** {FOR ADVANCED STUDENTS}	E. Mathiowitz Ed.	Download [CAUTION: 111 MB]
6.	Modern Pharmaceutics, 5th Ed [Drugs and Pharmaceutical Sciences Series, Vol 189] {Chapters 1, 4, 9} -See respective class for chapter links	A. T. Florence and J. Siepmann, Ed.	Download [17 MB]
7.	Martin's Physical Pharmacy and Pharmaceutical Sciences, 6th Ed.	P. J. Sinko & Y. Singh, Ed.	Download



DR. B. C. ROY COLLEGE OF PHARMACY & AHS, DURGAPUR
(NBA Accredited for UG Pharmacy Program)

(Chapters 20 & 23) -See Respective Class for Chapter Links	[CAUTION: 85 MB]
--	---------------------

**Book # 1 , 2 & 6: Seminal books to understand preliminary and advanced concepts of NDDS.*

****Book # 3: Chapter in the book Follows the syllabus of Unit I most closely**

****Book # 4 & 5: For mastery over the subject (not for casual readers)*

Supplementary Materials for Reference and Self Study:

Class Date	Module (as per Lesson Plan)	Topic	Live Recording Link	Powerpoint Presentation Link	Supplementary Notes / Resources	Remarks , if any
22-07-2020	I(a)	Intro to NDDS	YouTube Link	NDDS-SbR.pptx	1. Whiteboard Snapshots 2. Chapter-1 Gibson	
24-07-2020	I(a)	Intro to NDDS	YouTube Link	-do -	Chapter-47 Remington	
29-07-2020	I(a)	NDDS - Terminology	YouTube Link	-do-	1. Whiteboard Snapshots	
31-07-2020	I(a)	NDDS - Rational, Advantages	YouTube Link	-do- (updated)	Drug Delivery Concepts	
05-08-2020	I(a)	NDDS - disadvantages	YouTube Link	-do-		
07-08-2020	I(a)	NDDS - Where CRDDS cannot be formulated	YouTube Link	-do-	Whiteboard Snapshots.	Download Assignment file
12-08-2020	I(a)	NDDS - SR vs. CR DDS & factors	YouTube Link	-do- (updated)		



DR. B. C. ROY COLLEGE OF PHARMACY & AHS, DURGAPUR
(NBA Accredited for UG Pharmacy Program)

14-08-2020	I(a)	NDDS - Factors affecting NDDS design	YouTube Link	-do-	Notes on classes held till now	
19-08-2020	I(a)	NDDS - Drug related Factors affecting NDDS design	YouTube Link	-do-	Whiteboard Snapshots	
21-08-2020	I(a)	CRDDS - Classification (Mechanism based)	YouTube Link		Whiteboard Snapshots	
26-08-2020	I(a)	CRDDS - Approaches	YouTube Link Local video is also having sound issues.	Approaches .pptx	Whiteboard Snapshots	
28-08-2020	I(a)	CRDDS - Approaches	YouTube Link	-do-		
02-09-2020	I(a)	CRDDS - Approaches	YouTube Link	-do-	1. IER Paper 2. Whiteboard Snapshots	
04-09-2020	I(a)	CRDDS - Approaches	YouTube Link	-do-		
16-09-2020	I(a)	CRDDS - Physicochemical Properties	YouTube Link	Physicochemical Properties	Chapter-47 Remington	NOTE: Download the ppt and open as READ ONLY.



DR. B. C. ROY COLLEGE OF PHARMACY & AHS, DURGAPUR
(NBA Accredited for UG Pharmacy Program)

						Then no PW will be required.
23-09-2020	I(a)	CRDDS - Physicochemical Properties	YouTube Link	-do-	-do-	
30-09-2020	I(a)	CRDDS - Physicochemical Properties	YouTube Link	-do-	-do-	
02-12-2020	I(b)	Polymers	YouTube Link	Polymers	Martin: Chapter 20	
04-12-2020	Class was not held					
09-12-2020	I(b)	Polymers	YouTube Link	-do-	-do-	
11-12-2020	I(b)	Polymers	YouTube Link	-do-	-do-	
16-12-2021	I(b)	Polymers	YouTube Link	-do-	-do-	
20-01-2021	I(b)	Polymers	YouTube Link	-do-	-do-	
10-02-2021	IV	Targeted Drug Delivery Systems	YouTube Link	PPT	<ol style="list-style-type: none"> 1. Martin Chapter 23 2. Banker V2 Chapter 9 3. TDDS Chapter-1 	Students Absent
12, 20, 24 - 02 - 2021	STUDENTS ABSENT FROM CLASS					
	Study Materials <ol style="list-style-type: none"> 1. Nanoparticles (Targeted Systems): Link 1 2. Liposomes (Targeted Systems): Link 1 3. Nanoparticles (General): Link 1 Link 2 					



DR. B. C. ROY COLLEGE OF PHARMACY & AHS, DURGAPUR
(NBA Accredited for UG Pharmacy Program)

4. Liposomes (General): Link 1						
	Va	Ocular Drug Delivery Systems			Link 1 Link 2 (includes Ocuserts)	Also Study the Ocular Drug Delivery System Chapter from Chien (Book #1)
	Vb	Intra Uterine Drug Delivery Systems			Link 1 Link 2 Link 3 Link 4	Also Study the IntraUterine Drug Delivery System Chapter from Chien (Book #1)