



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

VIDEO & SUPPLEMENTARY MATERIALS

FACULTY: Prof. Dr. Subhabrata Ray

PROGRAM: B. PHARM (FINAL YEAR)

Course Name: NOVEL DRUG DELIVERY SYSTEMS

Course Code: PT-716B

“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.

Unit-IV

10 Hours



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

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]



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

6.	Modern Pharmaceutics, 5th Ed [Drugs and Pharmaceutical Sciences Series, Vol 189] {Chapters 1, 4, 9} <i>-See respective class for chapter links</i>	A. T. Florence and J. Siepmann, Ed.	Download [17 MB]
7.	Martin's Physical Pharmacy and Pharmaceutical Sciences, 6th Ed. (Chapters 20 & 23) <i>-See Respective Class for Chapter Links</i>	P. J. Sinko & Y. Singh, Ed.	Download [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:

Date	Module (as per Lesson Plan)	Topic	Live Recording Link	Powerpoint Presentation Link	Supplementary Notes / Resources	Remarks, if any
03-09-2021	1(a)	NDDS - Intro	YouTube	PPT	1. Gibson Chapter-1 2. Remington Chapter-4 7	
10-09-2021	1(a)	-do-	YouTube	-do-	Snapshot	
24-09-2021	1(a)	-do-	YouTube	-do-		
01-10-2021	1(a)	NDDS - Rationale, Adv, disadv	YouTube	-do-		
09-10-2021	1(a)	NDDS - Drugs for CRDDS	YouTube	-do-		
22-10-2021	1(a)	Factors affecting	YouTube	-do-		



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

		NDDS				
29-10-2021	1(a)	NDDS - Mechanistic Classification	YouTube	-do-		
12-11-2021	1(a)	Approaches to design of CRDDS	YouTube	PPT	1. Gibson Chapter-1 2. Remington Chapter-4 Z	