

Vidarbha Youth Welfare Society's  
**INSTITUTE OF PHARMACEUTICAL EDUCATION AND RESEARCH**  
Borgaon (Meghe), Wardha (M.S.)

**5. Course Plan/Teaching Plan Sample Format**



  
Dr. R. O. Ganjivale  
Principal  
Institute of Pharmaceutical Education & Research  
Borgaon (Meghe), Wardha

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TEACHING PLAN-2023  
 NOVEL DRUG DELIVERY SYSTEM  
 B.Pharm IV, Sem VII

LECTURE NO.	TOPICS	TEACHING DATES		SPECIFIC LEARNING OUTCOME
		PLANNED	IMPLEMENTED	
	<b>UNIT NO. 1</b>			
	<b>CONTROLLED DRUG DELIVERY SYSTEMS</b>			Modalities for Smooth Conduction of On-Line Session
1	Introduction, terminology/definitions and rationale	19/06/2023	19/06/23	At the end of each unit of learning students shall be able to:
2	Advantages, disadvantages, selection of drug candidates	20/06/2023	20/06/23	SLO1: Define the controlled drug delivery system
3	Approaches to design controlled release formulations based on diffusion and dissolution	21/06/2023	21/06/23	SLO2: Explain the rationale of controlled drug delivery system
4	Controlled release formulations based on ion exchange principles.	26/06/2023	26/06/23	SLO3: Mention the advantages and disadvantages of controlled drug delivery system
5	Physicochemical properties of drugs relevant to controlled release formulations	27/06/2023	27/06/23	SLO4: Justify the reasons for selection of drug candidates for controlled drug delivery system
6	Biological properties of drugs relevant to controlled release formulations	03/07/2023	28/06/23	SLO5: Apply the knowledge of design of controlled drug delivery system based on diffusion, dissolution and ion exchange principle SLO6: Create the new formulation considering the physicochemical and biological properties of drug relevant of controlled release formulation
	<b>POLYMERS</b>			
7	Introduction to polymers and its classification	03/07/2023	03/07/23	SLO7: Describe polymer and classify it.
8	Properties and advantages of	04/07/2023	04/07/23	SLO8: Discuss the properties and



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	polymers			advantages of polymers
9	Application of polymers in formulation of controlled release drug delivery systems	05/07/2023	05/07/23	SLO9: Demonstrate the applications of polymers in controlled drug delivery systems.
10	Application of polymers in formulation of controlled release drug delivery systems	05/07/2023	05/07/23	
<b>UNIT NO. II</b>		10		
<b>MICROENCAPSULATION</b>				
11	Definition, advantages and disadvantages	10/07/2023	10/07/23	SLO10: Recall definition, advantages and disadvantages of microcapsules.
12	Microspheres, microcapsules and microparticles,	10/07/2023	10/07/23	SLO11: Rewrite the concept of microspheres, microcapsules and micro particles
13	Methods of microencapsulation	11/07/2023	11/07/23	SLO12: Compare different methods of microencapsulation SLO13: Generate new applications of microencapsulation
14	Applications	12/07/2023	12/07/23	
<b>Mucosal Drug Delivery system</b>				
15	Introduction, Principles of bioadhesion / mucoadhesion, concepts,	12/07/2023	12/07/23	SLO14: Explain the theory of electronic transitions.
16	Advantages and disadvantages, transmucosal permeability	17/07/2023	17/07/23	SLO15: State the advantages and disadvantages of transmucosal permeability.
17	Formulation considerations of buccal delivery systems	17/07/2023	18/07/23	SLO16: Interpret the formulation considerations of buccal delivery systems.
<b>Implantable Drug Delivery Systems</b>				
18	Advantages and disadvantages,	18/07/2023	19/07/23	SLO17: Outline the advantages and disadvantages of implantable drug delivery system.
19	Concept of implants	19/07/2023	24/07/23	
20	Concept of osmotic pump	19/07/2023	25/07/23	SLO18: Describe the



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	UNIT NO. III	10		concept and working of implants and osmotic pump.
	<b>Transdermal Drug Delivery Systems</b>			
21	Introduction, Permeation through skin	24/07/2023	26/07/23	SLO19: Apply concept of transdermal drug delivery system
22	Factors affecting permeation, permeation enhancers	24/07/2023	28/07/23	SLO20: Recognize the factors affecting permeation.
23	Basic components of TDDS, formulation approaches	25/07/2023	31/07/23	SLO21: Discuss about permeation enhancer. SLO22: Organize the different components of transdermal drug delivery device. SLO23: Assess various approaches of transdermal drug delivery system
	<b>Gastroretentive drug delivery systems:</b>			SLO24: Relate the concept of gastroretentive drug delivery system.
24	Introduction, advantages, disadvantages,	26/07/2023	01/08/23	SLO25: Rewrite the advantages and disadvantages of gastroretentive drug delivery systems
25	Approaches for GRDDS – Floating, high density systems,	26/07/2023	02/08/23 07/08/23	SLO26: Describe the different approaches of gastroretentive drug delivery system
26	Inflatable and gastroadhesive systems and their applications	07/08/2023	08/08/23	SLO27: Outlines the applications of gastroretentive drug delivery systems.
	<b>Nasopulmonary drug delivery system:</b>			
27	Introduction to Nasal and Pulmonary routes of drug delivery,	08/08/2023	14/08/23	SLO28: Know the concept of the nasal and pulmonary routes of drug delivery
28	Formulation of Inhalers (dry powder and metered dose),	09/08/2023	21/08/23	SLO29: Enlist the different types of inhalers and explain them.
29	Nasal sprays	14/08/2023	22/08/23	SLO30: Describe the formulation of nasal sprays
30	Nebulizers	21/08/2023	23/08/23	SLO31: Compare the



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				different types of nebulizers.
	<b>Unit No. IV</b>	<b>08</b>		
	<b>Targeted drug Delivery:</b>			
31	Concepts and	22/08/2023	28/08/23	SLO32: Reproduce the concept of targeted drug delivery
32	Approaches	23/08/2023	29/08/23	
33	Advantages and disadvantages	28/08/2023	30/08/23	SLO33: Distinguish different approaches for targeted drug delivery.
34	Introduction to liposomes,	29/08/2023	04/09/23	
35	Niosomes,	04/09/2023	05/09/23	SLO34: State the advantages and disadvantages of targeted drug delivery
36	Nanoparticles	05/09/2023	06/09/23	
37	Monoclonal antibodies	06/09/2023	11/09/23	SLO35: Describe about Niosomes, nanoparticles, monoclonal antibodies and their applications in targeted drug delivery.
38	Applications	11/09/2023	12/09/23	
	<b>Unit NO. V</b>	<b>07</b>		
	<b>Ocular Drug Delivery Systems</b>			
39	Introduction,	11/09/2023	18/09/23	SLO36: Reproduce definition of ocular drug delivery systems.
40	Intra ocular barriers and methods to overcome –	12/09/2023	20/09/23	SLO37: Enlist the different intraocular barriers and explain about them.
41	Preliminary study, ocular formulations	13/09/2023	25/09/23	
42	Ocuserts	13/09/2023	26/09/23	SLO38: Justify the use of different methods to overcome barriers SLO39: Assess the role of ocuserts in ocular drug delivery
	<b>Intrauterine Drug Delivery Systems</b>			
43	Introduction, advantages and disadvantages	18/09/2023	04/10/23	SLO40: Express concept intrauterine drug delivery system
44	Development of intra uterine devices (IUDs)	18/09/2023	09/10/23	SLO41: State the advantages and disadvantages of intrauterine drug delivery
45	Applications	20/09/2023	10/10/23	SLO42: Compose intra uterine devices.

