Course Type	Course Code	Name of Course	L	Т	Р	Credit
DP	NCYC509	Formulation/Manufacturing Lab		0	3	1.5

Course Objective

• Development of advanced laboratory skills including familiarity with modern instrumentation and preparative techniques

Learning Outcomes

• Ability to independently conceive and resolve significant formulation and manufacturing problems

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome				
1	General Instructions	3	General instructions for the lab				
2	Improvement of dissolution characteristics of slightly soluble drug	3	Students will learn the method of solubility of drugs.				
3	Comparison of dissolution of two different marketed products /brands.	3	Students will learn the dissolution property of drugs.				
4	Protein binding studies of a highly protein bound drug & poorly protein bound drug.	3	Students will learn the binding study.				
5	Synthesisofchitosannanoparticles/nanogelfortargeteddrugdelivery.	3	Students will learn the bioavailability study.				
6	Pharmacokinetic and IVIVC data analysis by Winnoline R software	3	Students will learn the pharmacokinetic study.				
7	Synthesis of sodium alginate bead for controlled drug delivery.	3	Students will learn the process of in vitro study.				
8	Formulation and evaluation of tablets	3	Students will learn the formulation of tablets.				
9	Formulation and evaluation of capsules.	3	Students will learn the formulation of capsules.				
10	Formulation and evaluation of injections.	3	Students will learn the formulation of injections.				
11	Formulation and evaluation of emulsion.	3	Students will learn the formulation of emulsions.				
12	Formulation and evaluation of suspension.	3	Students will learn the formulation of suspensions.				
13	Formulation and evaluation of enteric coating tablets.	3	Students will learn the coating method.				
14	Preparation and evaluation of a freeze dried formulation. Preparation and evaluation of a spray dried formulation.	3	Students will learn the process of freeze dried.				
	Total	42L					

Text Books:

1) Pharmaceutical Production Facilities: Design and Applications G.C.Cole

Reference Books:

- 1) The Theory and Practice of Industrial Pharmacy, Lachman Bombay, K. M. Warghese Co. 197
- 2) Pharmaceutical Dosage Forms Vol. I & II, Liebermann, New York, Marcel Dekker, 1996.
- 3) Drug Delivery Devices: Fundamentals and Applications, Tyle New York, Marcel Dekker 1988