

**BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI**

**INSTRUCTION DIVISION**

**FIRST SEMESTER 2015-2016**

**Course Handout (Part II)**

Date:03-08-2015

In addition to Part I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

*Course No.* : **PHA F314**

*Course Title* : **Pharmaceutical Formulation and Biopharmaceutics**

*Instructor-in-charge* : **Dr. Deepak Chitkara**

*Instructor* : Satish Reddi and Archana K. Kakkar

**1. Scope & Objective of the Course:**

It is a course intended to give the students an insight into the problems of making dosage forms of drugs. It brings together the various sciences that are involved in the development of formulae of pharmaceutical products and in evaluation of their qualities. The laboratory component involves some fundamental exercises in the evolution of formulae of products such as tablets, ointments, solutions, parenteral products, sustained action medications etc. It also imparts knowledge of newer dosage forms.

**2. Text Book:**

Mithal B.M., Text Book of Pharmaceutical Formulation, Vallabh Prakashan, 6th edn., Delhi, 1997.

**3. Reference Books:**

- i) Lachman, Libbermann & Kanig: Theory and Practice of Industrial Pharmacy. 3<sup>rd</sup> Edn.
- ii) Remington's Pharmaceutical Science
- iii) Ansel: Introduction to Pharmaceutical Dosage Forms.
- iv) Swarbrick., Current Concepts in Pharmaceutical Sciences & Biopharmaceutics.
- v) Chien, Novel Drug Delivery System.
- vi) Prescott L.F. & Nimmo W.S., Novel Drug Delivery.
- vii) Juliano & Laytin, Drug Delivery System.

**3. a. Course Plan:**

<b>Topic</b>	<b>No. of Lectures</b>	<b>Ref. to Text Book</b>
Formulation – AN INTRODUCTION	1	Ch.1
The Drug delivery systems & classification of dosage forms	1	Ch.2
Components of a dosage form	1	Ch.2
Design of dosage forms	1	Ref 2 (i)
Physical properties of drugs & formulation	1	Ch.3
Chemical properties of drugs & formulation	1	Ch.4
Biopharmaceutical characters of drugs	2	Ch.5
Tablets	3	Ch.13
Capsules	2	Ch.14
Parenteral products	2	Ch.21
Ocular dosage forms	1	Ch. 22
Sustained release dosage forms	3	Ch.23
Coating & Microencapsulation	3	Ch.32
Transdermal drug delivery systems	1	Ch.24

Targeted Drug Delivery Systems	1	Ch. 25
Other novel drug delivery systems	2	Ch. 26 & 29
Pharmacokinetics	2	Ch. 5
Quality control of dosage forms	1	Ch.32
CGMP and Process Validation	1	Ref.

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Total No. of Lectures      30

**b. Practicals:**

Name of Experiments	No of Practical Hours	Refer
Formulation of different dosage forms like tablet, Pellets, liquids, injectable, semisolids	13 Lab Hours (each of 3 hours)	Different chapters of text book

Component	Duration	Weightage ( %)	Date & Time	Remarks
Surprise Tests*	10 min	10	During semester	
Mid-Term Test	90 minutes	30	6/10 8:00 - 9:30 AM	CB
Laboratory Components <sup>\$</sup>		25	Lab hours	
Comprehensive Exam	3 hrs	35	3/12 FN	OB/CB

\* Surprise tests will be conducted during class/tutorials on the basis of topics covered in class

\$ Lab component will consists: Day to day work 10 %; Lab. Quiz 5%; Lab. Compre. 10%

**5. Mid-semester Grading:** It will be done after the Mid-Term Test.

**6. Grading Procedure:**

Grading would be done by the bunching procedure. In borderline cases subjective judgement will be used to award the grades. It is not mandatory to award all the eight grades (i.e. from A to E). Subjective judgement based on attendance for the lectures, tutorials, appearance in quiz, student's involvement in the course and performance in the lab component would be used in the award of grades. The student shall not be considered as "exposed" to the course, unless he/she demonstrates appreciable skill in both the laboratory and theory components of the course and through classroom participation. Attending tutorial and appearing surprise quiz is very important. Students not appeared in any quiz or not submitted assignments, not appeared in any test/lab/comprehensive exam will not be considered exposed to the course. It is also expected that student will attend classes regularly to get proper exposure and to provide chance of evaluation of his knowledge.

**7. Make-up- policy:**

Prior approval or intimation to take a make-up is a must. It is solely the discretion of the instructor-in-charge, depending upon the genuineness of the circumstances, to allow a student to appear for a make-up evaluation component.

**9. Chamber Consultation Hours:** To be announced in the class.

10. **Notices:** All notices, concerning the course will be displayed on the notice board of the Department of Pharmacy.

Dr. Deepak Chitkara  
**Instructor-in-charge**  
**PHA C421**