LJ UNIVERSITY

LJ INSTITUTE OF PHARMACY

SEMESTER: IV

Subject Name: PHARMACEUTICS- I
Subject Code: BP401TP

Scope: This course is designed to impart a fundamental knowledge on the preparatory pharmacy with arts and science of preparing the different conventional dosage forms.

Objectives: Upon completion of this course the student should be able to:

1. Acquire the knowledge of prescription and posology including pediatric dose calculation. Explain and demonstrate various pharmaceutical calculations.
2. Explain the formulation considerations of powders as a solid dosage form. Familiarize with different types of Pharmaceutical Incompatibility
3. Familiarize with various types of dosage form with suitable examples. Explain and formulate liquid dosage form including monophasic liquid dosage forms.
4. Explain and formulate Biphasic liquid dosage form with special emphasis on Suspensions and Emulsions
5. Formulate Semisolid dosage forms including suppositories.

Teaching scheme and examination scheme:

Teaching Scheme				Evaluation Scheme			
				Theory		Practical	
Theory	Tutorial	Practical	Total	External	Internal	External	Internal
3	1	4	8	75	25	75	25

Sr. No.	Course Contents	Hours
1	**Dosage forms:** Introduction to dosage forms, classification and definitions Prescription: Definition, Parts of prescription, handling of Prescription and Errors in prescription **Posology:** Definition, Factors affecting posology. Pediatric dose calculations based on age, body weight and body surface area **Pharmaceutical calculations:** Weights and measures– Imperial & Metric system ,Calculations involving percentage solutions, allegation, proof spirit and isotonic solutions based on freezing point and molecular weight	10
2	**Powders:** Definition, classification, advantages and disadvantages, Simple & compound powders – official preparations, dusting powders, effervescent, efflorescent and hygroscopic powders, eutectic mixtures. Geometric dilutions **Pharmaceutical incompatibilities:** Definition, classification, physical, chemical and therapeutic incompatibilities with examples	11
3	**Liquid dosage forms:** Advantages and disadvantages of liquid dosage forms. Excipients used in formulation of liquid dosage forms. **Monophasic liquids:** Definitions and preparations of Gargles, Mouthwashes, Throat Paint, Eardrops, Nasal 12 drops, Enemas, Syrups, Elixirs, Liniments and Lotions. **Biphasic liquids:** **Suspensions:** Definition, advantages and disadvantages, classifications, Preparation of suspensions; **Emulsions:** Definition, classification, emulsifying agent, Methods of preparation.	12
4	**Semisolid dosage forms:** Definitions, classification, mechanisms and factors influencing dermal penetration of drugs. Preparation of ointments, pastes, creams and gels. Excipients used in semi-solid dosage forms. Evaluation of semi-solid dosages forms Suppositories: Definition, types, advantages and disadvantages, types of bases, methods of preparations. Displacement value & its calculations, evaluation of suppositories	12
Total Hours		45

Practical

1. Syrups: a) Syrup IP'66 b) Compound syrup of Ferrous Phosphate BPC'68
2. Elixirs: a) Paracetamol pediatric elixir
3. Liquids for external a) Iodine Throat Paint (Mandles Paint)(b) Iodine gargle (c) Chlorhexidine mouthwash
4. Solutions: a) Lugol's solution
5. Suspensions: a) Calamine lotion (b) Aluminium Hydroxide gel
6. Emulsions: a) Turpentine Liniment (b) Liquid paraffin emulsion
7. Powders and Granules a) Effervescent granules (b) Dusting powder (c)Divded powders
8. Suppositories a) Glycero gelatin suppository (b) Coca butter suppository (c) Zinc Oxide suppository
9. Semisolids a) Sulphur ointment (b) Non staining-iodine ointment with methyl salicylate

Recommended Books:

1. H.C. Ansel et al., Pharmaceutical Dosage Form and Drug Delivery System, Lippincott Williams and Walkins, New Delhi.
2. Carter S.J., Cooper and Gunn's-Dispensing for Pharmaceutical Students, CBS publishers, New Delhi.
3. M.E. Aulton, Pharmaceutics, The Science& Dosage Form Design, Churchill Livingstone, Edinburgh.
4. Indian pharmacopoeia.
5. British pharmacopoeia.
6. Lachmann. Theory and Practice of Industrial Pharmacy,Lea& Febiger Publisher, The University of Michigan.
7. Alfonso R. Gennaro Remington. The Science and Practice of Pharmacy, Lippincott Williams, New Delhi.
8. Carter S.J., Cooper and Gunn's. Tutorial Pharmacy, CBS Publications, New Delhi.
9. E.A. Rawlins, Bentley's Text Book of Pharmaceutics, English Language Book Society, Elsevier Health Sciences, USA.
10. Isaac Ghebre Sellassie: Pharmaceutical Pelletization Technology, Marcel Dekker, INC, New York.
11. Dilip M. Parikh: Handbook of Pharmaceutical Granulation Technology, Marcel Dekker, INC, New York.
12. Francoise Nieloud and Gilberte Marti-Mestres: Pharmaceutical Emulsions and Suspensions, Marcel Dekker, INC, New York.