

(B. Pharm.)
(Semester - I)

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Course Code	BP103T
Course Title	Pharmaceutics I - Theory

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. Know the history of profession of pharmacy
2. Understand the basics of different dosage forms, pharmaceutical incompatibilities and pharmaceutical calculations
3. Understand the professional way of handling the prescription
4. Preparation of various conventional dosage forms

Course Learning Outcomes (CLO):

At the end of the course, students will be able to -

1. Discuss history of pharmacy profession and various dosage forms
2. Explain various conversions systems used in pharmaceutical dispensing
3. Understand the concepts of dispensing methods for various dosage forms
4. Interpret types of prescriptions and study their handling
5. Solve pharmaceutical calculations and pharmaceutical incompatibilities related to dispensing of products
6. Prepare various types of dispensed products at small scale with suitable labeling and packaging

Syllabus:

Teaching hours: 45 Hours

UNIT I

10 Hours

- **Historical background and development of profession of pharmacy:** History of profession of Pharmacy in India in relation to pharmacy education, industry and organization, Pharmacy as a career, Pharmacopoeias: Introduction to IP, BP, USP and Extra Pharmacopoeia.
- **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.

UNIT II

10 Hours

- **Pharmaceutical calculations:** Weights and measures – Imperial & Metric system, Calculations involving percentage solutions, alligation, proof spirit and isotonic solutions based on freezing point and molecular weight.
- **Powders:** Definition, classification, advantages and disadvantages, Simple & compound powders – official preparations, dusting powders, effervescent, efflorescent and hygroscopic powders, eutectic mixtures. Geometric dilutions.
- **Liquid dosage forms:** Advantages and disadvantages of liquid dosage forms. Excipients used in formulation of liquid dosage forms. Solubility enhancement techniques

UNIT – III

10 Hours

- **Monophasic liquids:** Definitions and preparations of Gargles, Mouthwashes, Throat Paint, Eardrops, Nasal drops, Enemas, Syrups, Elixirs, Liniments and Lotions.
- **Biphasic liquids:**
- **Suspensions:** Definition, advantages and disadvantages, classifications, Preparation of suspensions; Flocculated and Deflocculated suspension & stability problems and methods to overcome.
- **Emulsions:** Definition, classification, emulsifying agent, test for the identification of type of Emulsion, Methods of preparation & stability problems and methods to overcome.

UNIT – IV

08 Hours

- **Suppositories:** Definition, types, advantages and disadvantages, types of bases, methods of preparations. Displacement value & its calculations, evaluation of suppositories.
- **Pharmaceutical incompatibilities:** Definition, classification, physical, chemical and therapeutic incompatibilities with examples.

UNIT – V

07 Hours

- **Semisolid dosage forms:** Definitions, classification, mechanisms and factors influencing dermal penetration of drugs. Preparation of ointments, pastes, creams and gels. Excipients used in semisolid dosage forms. Evaluation of semisolid dosages forms.

Tutorials

Teaching hours: 15 Hours

Tutorials will be based on above syllabus

Suggested Readings[^]: (Latest edition)

1. Loyd, V.A., Nicholas, .P., & Ansel, H.C. Ansel's Pharmaceutical Dosage Form and Drug Delivery Systems. Lippincott Williams and Walkins.
2. Cooper J.W., Gunn, C, & Cater, S. J. Dispensing for Pharmaceutical Students. Edinburgh; London: Churchill Livingstone.
3. Aulton, M.E. Pharmaceutics: The Science & Dosage Form Design. Edinburgh; London: Churchill Livingstone.
4. Indian pharmacopoeia, Indian Pharmacopoeial Commission.
5. British pharmacopoeia, British Pharmacopoeial Commission.
6. Leon Lachmann, & Herbert, A.L. The Theory and Practice of Industrial Pharmacy. New Delhi: CBS Publishers & Distributors Pvt. Ltd.
7. Remington, J. P., & Gennaro, A. R. Remington: The Science and Practice of Pharmacy. Lippincott Williams.
8. Cooper J.W., Gunn, C, & Cater, S. J. Cooper and Gunn's Tutorial Pharmacy. New Delhi: CBS Publishers.

9. Bentley, A.O., & Rawlins, E.A. Bentley's Text Book of Pharmaceutics. USA: Elsevier Health Sciences.
10. Isaac Ghebre Sellassie. Pharmaceutical Pelletization Technology. New York: Marcel Dekker.
11. Parikh, D.M. Handbook of Pharmaceutical Granulation Technology. New York: Informa Healthcare.
12. Françoise Nieloud and Gilberte Marti-Mestres: Pharmaceutical Emulsions and Suspensions. New York: Informa Healthcare, cop.

L= Lecture, T= Tutorial, P= Practical, C= Credit

^ this is not an exhaustive list
