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| INSTITUTE | FACULTY OF PHARMACY |
| PROGRAM | BACHELOR OF PHARMACY |
| SEMESTER | 1 |
| COURSE TITLE | GENERAL PHARMACY |
| COURSE CODE | 13PH0102T |
| COURSE CREDITS | 3 |

Objective:

- 1 Provide knowledge about the evolution and development of the pharmacy profession in India and the growth of the Pharmaceutical Industries over the years.
- 2 Provide an understanding of different types of pharmacopoeias and other official books in maintaining the standards of medicines.
- 3 Provide knowledge about the basic pharmaceutical calculations used in dispensing and compounding.
- 4 Understand the role of active pharmaceutical ingredients and pharmaceutical excipients in drug formulations.
- 5 Impart basic knowledge about formulation and preparation of Various solid, liquid, and semisolid dosage forms.

Course Outcomes: After completion of this course, student will be able to:

- 1 Describe the history and evolution of the pharmacy profession, including pharmacopeial practices and prescription handling.
- 2 Perform accurate pharmaceutical calculations required in the formulation and preparation of various types of dosage forms.
- 3 Explain the properties and functions of active pharmaceutical ingredients (APIs) and excipients, and demonstrate the methods of preparation of solid dosage forms.
- 4 Illustrate the formulation principles of liquid dosage forms by analyzing the role of APIs and excipients involved.
- 5 Compare and evaluate the formulation of semisolid dosage forms based on the characteristics of APIs, excipients, and preparation methods.

Pre-requisite of course: 1. Familiarity with units, measurements, percentages, ratios, and simple calculations, 2. Understanding of basic biology concepts, 3. Ability to read and interpret scientific terminology, 4. Basic laboratory discipline and safety awareness.

Teaching and Examination Scheme

| Theory Hours | Tutorial Hours | Practical Hours | ESE | IA | CSE | Viva | Term Work |
|---------------------|-----------------------|------------------------|------------|-----------|------------|-------------|------------------|
| 3 | 0 | 0 | 45 | 15 | 15 | 0 | 0 |

| Contents : Unit | Topics | Contact Hours |
|--------------------|--|------------------|
| 1 | <p>Introduction to the Profession of Pharmacy History of the Profession of Pharmacy in India: In relation to pharmacy education, pharmaceutical industries and organizations – evolution, development and milestones., Scope of the Pharmacy Profession: Role and responsibilities of pharmacists in retail/community pharmacy, hospital and clinical pharmacy, and industrial pharmacy, including research and development., Pharmacopoeias: Introduction to IP, BP, USP, BPC, International Pharmacopoeia, other pharmacopoeias, and the National Formulary of India; structure and content of the Indian Pharmacopoeia; study of one model IP monograph., Introduction to Prescription: Structure and format/parts of prescription, handling of prescriptions, Latin terminology related to prescriptions.</p> | 9 |
| 2 | <p>Pharmaceutical Calculations Metric system of weights and measures; calculations based on alligation, proof spirit, isotonic solutions, dilute solutions (percentage and ratio), and geometric dilution; scientific notation of units and measures., Posology: Definition and dose calculation based on age, body weight, and body surface area., Introduction to Dosage Forms: Routes of administration and classification of dosage forms., Introduction to Active Pharmaceutical Ingredients and Excipients: Definition, ideal characteristics, and importance.</p> | 9 |
| 3 | <p>Solid Dosage Forms Powders: Classification, advantages and disadvantages; dusting powders, effervescent powders, efflorescent powders, hygroscopic powders and eutectic mixtures; introduction to excipients and methods of preparation., Tablets: Definition, types of tablets including moulded tablets and pills with examples; advantages and disadvantages; introduction to excipients and methods of preparation., Capsules: Definition, types of capsules, advantages and disadvantages, capsule sizes; introduction to excipients and methods of preparation.</p> | 9 |
| 4 | <p>Monophasic and Biphasic Liquids For internal use – aromatic waters, syrups, elixirs, and linctus (definition and preparation)., For external use and body cavities – liniments, lotions, throat paints, applications, gargles, mouthwashes, enemas, eye drops, ear drops, nasal drops, and tinctures with examples., Study of official preparations; introduction to excipients and methods of preparation., Suspensions- Definition and types (flocculated and deflocculated), advantages and disadvantages, formulation excipients, and general methods of preparation., Emulsions- Definition and types, emulsifying agents, tests for identification of types of emulsions, formulation excipients, and general methods of preparation.</p> | 9 |

| Contents : Unit | Topics | Contact Hours |
|----------------------------|---|--------------------------|
| 5 | Semisolid Dosage Forms Definitions, classification, advantages and disadvantages, ointment bases and other excipients used in semisolid dosage forms, general methods of preparation of ointments, pastes, creams and gels., Suppositories / Pessaries: Definition, types of suppositories, advantages and disadvantages, formulation excipients used in suppositories, properties of ideal suppository bases, types of suppository bases, displacement value, and general method of preparation. | 9 |
| Total Hours | | 45 |

Textbook :

- 1 Cooper and Gunn's Dispensing for Pharmaceutical Students, S.J. Carter, CBS Publishers, 2020
- 2 Pharmaceutical Dosage Forms and Drug Delivery Systems, H.C. Ansel, L.V. Allen, N.G. Popovich, Lippincott Williams & Wilkins, 2021
- 3 Remington: The Science and Practice of Pharmacy, A.R. Gennaro, Pharmaceutical Press, 2020
- 4 Bentley's Textbook of Pharmaceutics, E.A. Rawlins, Elsevier, 2019
- 5 Essentials of Pharmaceutics, M. Gupta, CBS Publishers, 2022
- 6 Modern Pharmaceutics, G.S. Banker, C.T. Rhodes, CRC Press, 2020
- 7 Textbook of Pharmaceutics, Vyas & Khar, CBS Publishers, 2021

References:

- 1 Indian Pharmacopoeia, Indian Pharmacopoeia, Indian Pharmacopoeia Commission, IPC, Ghaziabad, 2026
- 2 National Formulary of India, National Formulary of India, Indian Pharmacopoeia Commission, IPC, Ghaziabad, 2021
- 3 British Pharmacopoeia, British Pharmacopoeia, British Pharmacopoeia Commission, London, 2026
- 4 USP–NF, USP–NF, United States Pharmacopeial Convention, USP Convention, 2025
- 5 The Theory and Practice of Industrial Pharmacy, The Theory and Practice of Industrial Pharmacy, Lachman, Lieberman, Kanig, CBS / Lea & Febiger, 2020
- 6 Pharmaceutical Emulsions and Suspensions, Pharmaceutical Emulsions and Suspensions, F. Nielloud, G. Marti-Mestres, CRC Press, 2018
- 7 Handbook of Pharmaceutical Excipients, Handbook of Pharmaceutical Excipients, Rowe, Sheskey, Quinn, Pharmaceutical Press, 2020
- 8 Aulton's Pharmaceutics: Design and Manufacture of Medicines, Aulton's Pharmaceutics: Design and Manufacture of Medicines, Michael Aulton, Elsevier, 2022

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

| Distribution of Theory for course delivery | | | | | |
|--|-------------------|--------------|----------------|-----------------|---|
| Remember / Knowledge | Understand | Apply | Analyze | Evaluate | Higher order Thinking / Creative |
| 25.00 | 30.00 | 20.00 | 12.00 | 8.00 | 5.00 |

Instructional Method:

- 1 Interactive Lectures
- 2 Chalk-and-talk with board illustrations
- 3 Demonstration of dosage form preparation
- 4 Prescription reading exercises
- 5 Case-based learning on dispensing errors
- 6 Problem-solving exercises
- 7 Group discussion on pharmacist roles and ethics
- 8 Audio-visual teaching for manufacturing processes
- 9 Flipped classroom for pharmacopoeia study

Supplementary Resources:

- 1 Indian Pharmacopoeia Commission: <https://ipc.gov.in>
- 2 Central Drugs Standard Control Organization (CDSCO): <https://cdsco.gov.in>
- 3 World Health Organization Medicines: <https://www.who.int/teams/health-product-policy-and-standards>
- 4 United States Pharmacopeia: <https://www.usp.org>
- 5 British Pharmacopoeia: <https://www.pharmacopoeia.com>