



Unit. No.	Topic	Total Hours (45 hours)	Weight (%)
1	Introduction to the Profession of Pharmacy History of the Profession of Pharmacy in India: In relation to pharmacy education, pharmaceutical industries and	9	20

	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.		
2	Introduction to Pharmaceutical Calculations and Dosage Forms • 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.	9	20
3	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.	9	20
4	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.	9	20
5	Semisolid Dosage Forms • Definitions, classification, advantages and disadvantages,	9	20

	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.	
--	--	--

References:

1. Ansel, H.C., Allen, L.V. and Popovich, N.G., *Pharmaceutical Dosage Forms and Drug Delivery Systems*. Lippincott Williams & Wilkins, New Delhi.
2. Carter, S.J., *Cooper and Gunn's Dispensing for Pharmaceutical Students*. CBS Publishers, New Delhi.
3. Indian Pharmacopoeia Commission, *Indian Pharmacopoeia*. Ghaziabad.
4. Indian Pharmacopoeia Commission, National Formulary of India. Ghaziabad, India.
5. British Pharmacopoeia Commission, *British Pharmacopoeia*. London.
6. United States Pharmacopeial Convention, *United States Pharmacopeia (USP-NF)*. Rockville, Maryland, USA.
7. Lachman, L., Lieberman, H.A. and Kanig, J.L., *The Theory and Practice of Industrial Pharmacy*. Lea & Febiger, University of Michigan.
8. Gennaro, A.R., *Remington: The Science and Practice of Pharmacy*. Lippincott Williams & Wilkins, New Delhi.
9. Rawlins, E.A., *Bentley's Textbook of Pharmaceutics*. Elsevier Health Sciences, USA.
10. Nieloud, F. and Marti-Mestres, G., *Pharmaceutical Emulsions and Suspensions*. Marcel Dekker Inc., New York.

List of Open Source Software/learning website:

1. <https://innocentbalti.files.wordpress.com/2015/01/martins-physical-pharmacy-6th-ed-2011-dr-murtadha-alshareifi.pdf>
2. <http://dl.konkur.in/post/Book/MedicalScience/Aulton-Pharmaceutics-The-Design-and-manufacture-of-Medicines-5th-Edition-%5Bkonkur.in%5D.pdf>