

GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF PHARMACY

SEMESTER: VIII

Subject Name: **Pharmaceutical Technology - II**

Subject Code: **280002**

[THEORY]

Sr. No.	Course Contents	Total Hrs
1.	<p>Tablet</p> <p>(a) Definition, Advantages and disadvantages, Introduction to types of tablets, formulation of different types of tablets; excipients, granulation techniques, machinery for large scale granulation and compression, physics of tablet making, In process controls, processing problems and remedies,</p> <p>(b) Evaluation (Pharmacopoeial and nonpharmacopoeial test) and equipments. Brief outline on manufacturing method and evaluation of mouth dissolving tablets, buccal tablets, floating tablets, tablets of colon drug delivery, matrix tablets.</p> <p>(C) Coating Of Tablets: objectives, types of coating, film forming materials, formulations of coating solution, equipments for coating, coating process, evaluation of coated tablets , coating defects, specialized coating processes.</p> <p>(d) Pharmaceutical Tablet Compression Tooling: Terminology, tablet design, specification and information required, use and care of the tooling, problem solving.</p>	15
2.	<p>Capsules</p> <p>Hard Capsules:</p> <p>Definitions, Advantages, disadvantages, Ideal requirements, Production of Hard capsules (Gelatin and nongelatin e.g. vegetable), Capsule storage, size of capsules, formulation and methods of capsule filling, problems and remedies, quality control, climatic control in capsule department, I.P capsules.</p> <p>Soft Gelatin Capsules:</p> <p>Formulation of shell and capsule coat, quality control with special emphasis on current dissolution testing.</p> <p>Microcapsules/Microspheres:</p> <p>Importance of microcapsule and microsphere in pharmacy, methods of preparation: Phase separation, coacervation, multiorifice centrifugal methods, spray congelling, polymerisation, complex emulsion, Air suspension technique, coating pan and other techniques, evaluation of microcapsules, Applications of biodegradable and nonbiodegradable polymers in Microcapsules/Microspheres.</p>	12

3.	Cosmeticology and cosmetic preparations Fundamentals of cosmetic science, structure and functions of skin and hair, formulation, preparation and packaging of cosmetics for skin - Sunscreen, moisturizers, cold cream, and vanishing cream, hair - Shampoo and conditioners, dentifrice- powders, gels, paste and manicure preparations like- nail polish, lipsticks, eye lashes, brief introduction to cosmaceuticals, baby care products, shaving cream, hygienic products	6
4.	Pharmaceutical Packaging Definition, Packaging components, types, specifications and methods of evaluation, stability aspects of packing. Primary and secondary packaging, packaging materials, containers and closures; and tamper-evident packaging, packaging equipments. Regulatory requirements in pharmaceutical packaging.	5
5	Good Manufacturing Practice for Pharmaceuticals and validation Brief Introduction to GMP (schedule M) and quality assurance, practice of GMP- Procedure (SOPs), Building, Equipment, Personnel, Components, Documentation, Containers, Labeling, Laboratory Control, Distribution Records, Recovery & Reprocessing. Introduction to validation, validation of selective unit operations (e.g. granulation, compression) used in tablet manufacturing and steam sterilizer.	7

[PRACTICALS]

Sr. No.	Course Contents
1.	Filling of powder/ granules/ pellets in hard gelatin capsule and its evaluation.
2.	Preparation of gelatin microcapsules by simple coacervation method.
3.	Perform pharmacopoeial test for given sample of glass vial / ampoule
4.	Preparation and evaluation of face powder
5.	Preparation and evaluation of lipstick
6.	Preparation and evaluation of cold cream
7.	Preparation and evaluation of vanishing cream
8.	Preparation and evaluation of tooth paste/ tooth powder
9.	Preparation and evaluation of effervescent tablet
10.	Preparation and evaluation of ferrous sulphate tablet
11.	Preparation and evaluation of paracetamol tablet
12.	Preparation and evaluation of tablets employing direct compression
13.	Preparation and evaluation of tablets employing wet granulation

14.	Preparation and evaluation of tablets employing dry granulation(slugging)
15.	Preparation and evaluation of tablets employing compression coating

Text Books:

1. The Theory and Practice of Industrial Pharmacy by L Lachman, H Lieberman and J Kanig.
2. Gennaro, Alfonso R., Remington: The Science and Practice of Pharmacy, Vol-I & II, Lippincott Williams & Wilkins, New York.

Reference Books:

1. Pharmaceutical Dosage Forms and Drug Delivery Systems by Ansel & others.
2. Pharmaceutics: The Science of Dosage Form Design by Michael E. Aulton
3. Pharmaceutical Dosage Forms: Tablets: Vol.1, Vol. 2 and Vol.3, Ed. by Lieberman, Leon Lachman and Joseph B. Schwartz, Marcel Dekker Inc., New York.
4. GMP for Pharmaceuticals by Willig and Storker.
5. Cosmetics by Poucher