

GUJARAT TECHNOLOGICAL UNIVERSITY
B.E. SEMESTER : VIII
CHEMICAL TECHNOLOGY

Subject Name: Drug Delivery, Biotechnology & Validation Requirements

Subject Code: 183601

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
3	0	3	6	70	30	30	20

Sr. No	Course contents
1.	Preformulation , Formulation , Evolution , Large scale manufacture & packing with focus on equipment with reference to oral sustained & controlled release dosage forms & Aerosols
2.	Introduction to Novel drug Delivery Systems : Transdermal , Transmucosal , Ophthalmic , Colloidal: Liposome's nanoparticles , emulsion systems etc.
3.	Introduction to radio pharmaceuticals , Overview of cosmetic products
4.	Application of biotechnology in foods , pharma , & others industries with special reference to enzymes Definition , nomenclature & terminology isolation purification strain improvements optimization of Growth & product formation using industrially important micro organism
5.	Generic engineering principles & technique
6.	Principles of surface & solid state fermentation , Design of Fermentors & The biochemical engineering aspects . process control of fermentation . Fermentation Technology of Industrial chemicals, organic acids amino acids , vitamins , polysaccharides , antibiotics , etc
7.	Enzyme fermentation & technology including immobilization & enzyme reactors. Fermentative bioconversions with special ; reference to steroids , Design aspect of photobioreactors . cloning of animals , & others developments
8.	CGMP & Quality assurance, Process , product validation & quality audits . Documentation ,New drug approval,DPCO , drug & cosmetics & rules including licensing intermediates industry

Reference Books:

1. Pharmaceutical Dosage Forms and Drug Delivery Systems , Ansel ,Philadelphia Fea & Febiger , 1985
2. Introduction to pharmaceutical Dosage Forms Henry ,Ansel , Kimpton Publishers , 1976
3. Pharmaceutical: The Science of Dosage Form Design Aulton , B.I Naverly Pvt . Ltd, 1995
4. Modern pharmaceuticals G.S.Bnaker New York , Marcel Dekker 1990
5. Fundamentals of Pharmacy ,Blome H.E. Philadelphia Fea & Febiger , 1985
6. Pharmaceutical production Facilities Design & Application ,G.C.Cole New York Ellis Horwood 1990

7. Pharmaceutical Dispensing ,Martin E.W.Easton Husa, Mack Pub. Co 1971
8. Transdermal Delivery of Drugs, A.Kydonieus Florida , CRC. Press , 1987
9. Law of Drugs Medicines & Cosmetics, K.K. Singh , L.R. Bugga Beotra's ,Law Book co. Pvt . Ltd ,Allahabad
10. Modern Pharmaceutics , G.S.Banker , New York , Marcel Dekker 1990
11. Fundamentals of pharmacy , Blome H.E. , Fea & Febiger , Philadelphia , 1985
12. Pharmaceutical Production Facilities Design & Applications , G.C.Cole , New York Ellis Horwood 1990
13. Drug Delivery Device : Fundamentals & Applications , Tyle ,New York , Marcel Dekker 1988
14. Microbial Quality Assurance in pharmaceuticals cosmetics & Toiletries , S.F.Bloomfield, Chichester, Ellils , Horwood , 1998
15. Encyclopedia of pharmaceutical Technology , J.Swarbrick , New York , Marcel Dekker , 1993
16. Pharmaceutical Sciences , A.R.Gennaro Remington, Mac Pub . Co . Easton , Pennsylvania 1990
17. Indian Pharmacopiea , British Pharmacopiea , united states Pharmacopiea.
18. Oral Mucosal Durg Delivery Rethbons ,, New York , Marcel Dekker , 1996
19. Good Laboratory Practice Regulations New York , A.F.Hirsch Marcel Dekker 1989
20. Good Laboratory Practice Regulations New York ,Weinberg,, Marcel Dekker 1995