GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. Semester - 3

Subject Code 230001
Subject Name Physical Pharmaceutics – II

Sr.No	Course content
1.	**Solutions of nonelectrolytes :** Concentration expressions, equivalent weights, ideal and real solutions, colligative properties, molecular weight determination
2.	**Solutions of electrolytes :** Properties of solutions of electrolytes, Arrhenius theory of electrolytic dissociation, theory of strong electrolytes, coefficients for expressing colligative properties
3.	**Kinetics :** Rates and orders of reactions, influence of temperature and other factors on reaction rates, decompositions and stabilization of medicinal agents, accelerated stability analysis, ICH guidelines for stability study
4.	**Complexation and protein binding :** Metal complexes, organic molecular complexes, protein binding
5.	**Polymer science :** Pharmaceutical applications of polymers, Characterization of polymers, polymers in drug delivery systems, general properties of polymer solutions, introduction to synthetic polymers used in pharmacy
6.	**Diffusion and dissolution :** Steady state diffusion, dissolution, drug release

Physical Pharmaceutics – II Practical (230001P)

Practicals demonstrating any theoretical aspects of above topics may be carried out.

Reference Books:

1. Martin's Physical pharmacy by Patrick J. Sinko, 5th edition, Lippincott Williams & Wilkins, New York, 2006.
2. Pharmaceutics: The Science of Dosage Form Design, 2nd edition, Aulton, Michael E., Chrchill Livingstone, London, 2002.

3. Remington: The Science and Practice of Pharmacy, Vol-I & II, 20th edition, Gennaro, Alfonso R.,Lippincott Williams & Wilkins, New York, 2002.
4. Physicochemical Principles of Pharmacy, 3rd edition, Florence, A. T. Atwood, D. Macmillan Press Ltd., London 1998.
5. Pharmaceutical Dosage Forms and Drug Delivery Systems, Ansel, Howard. C., Allen, Loyd V., Popovich, Nicholas G. Lippincott Williams & Wilkins, New York, 2002.
6. Cooper and Gunn's Tutorial Pharmacy, ed. Carter, S. J., 6th edition, CBS Publishers & Distributors, Delhi, 2000.
7. Bentley's textbook of Pharmaceutics by E. A. Rawlins, 8th edition, Bailliere Tindall, London, 2005.