

**PS801: NOVEL DRUG DELIVERY SYSTEMS****B. Pharm IV Year II sem**

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**Course Objectives:** This course is designed to impart knowledge on controlled drug delivery systems including oral, transdermal, mucoadhesive, targeted (Liposomes and Nanoparticles). It also helps to know how regulatory agencies (Indian CDSCO, USFDA, Canadian HPFBI and Australian TGA) act on release of NDA & ANDA.

**Course Outcome:** Student shall be able to know the controlled, sustained drug delivery systems, their methods of preparation.

**UNIT - I**

**Oral Control Drug Delivery Systems:** Fundamental study of different types of Oral Controlled drug delivery systems, sustained release concept, design of sustained release dosage form, Zero order release, first order release approximation, multiple dosing.

Dissolution Controlled, Diffusion Controlled, Ion Exchange Resins, Osmotic based systems, pH Independent Systems.

**UNIT - II**

**a. Transdermal Drug Delivery Systems:** Fundamentals, types of TDDS, Materials Employed and Evaluation of TDDS.

**UNIT - III**

**Mucoadhesive Delivery Systems:** Mechanism of bioadhesion, mucoadhesive materials, formulation and development of mucoadhesive-based systems.

**UNIT - IV**

**Targeted Drug Delivery Systems:** Fundamentals and applications, formulation and evaluation of liposomes, resealed erythrocytes and nano particles.

**UNIT - V**

Introduction, principle and Fabrication of Intrauterine Devices / injections / implants

**TEXT BOOKS**

1. Novel drug delivery system by Prof. (Dr) A.K. Bandyopadhyay
2. N.K. Jain, Control Drug Delivery Systems by
3. Y.Anjaneyulu & Maraiiah, Quality Assurance & Quality Management in Pharmaceutical Industry.

**REFERENCES**

1. Leon Shargel Isadore Kanfer, Generic Drug Product Development, Solid Oral Dosage Forms, Marcel Dekker.
2. Sagarian & MS Balsam, Cosmetics Sciences & Technology. Vol.1, 2 & 3