

## **Drug Delivery and Lab (30:721:320)**

### **Course Description:**

*Drug Delivery:* The development of drug delivery systems relies on the broad understanding of many different physiological, chemical, and biological factors. This course is designed to provide the student with a basic understanding of these factors and rationale for the design of drug delivery systems.

### **Course Objectives:**

Students completing the Drug Delivery course will be able to demonstrate the following competencies:

1. Recognize the benefits of drug delivery systems in enhancing specific availability of the drug and preventing adverse side effects.
2. Differentiate various routes of drug administration and peculiarities of drug delivery systems designed for the specific route.
3. Understand the concept, main types of targeted drug delivery and advantages of drug targeting to specific organs, tissues, intracellular organelles or molecules.
4. Classify kinetic profiles of controlled drug release and recognize benefits of each profile.
5. Understand the basic mechanisms of gene and antisense oligonucleotide therapy and the specificity and characteristics of delivery system designed for gene delivery.
6. Identify the special characteristics required for anti-cancer drug delivery systems.
7. Achieve a detailed working knowledge of the technology, regulatory requirements and methods of preparation, storage and administration of Compounded Sterile Preparations according to USP Chapter 797 standards.

### **Laboratory Description:**

A laboratory-based course on extemporaneously preparing, mixing, assembling, packaging and labeling of sterile and non-sterile compounded prescriptions and medication orders, according to current professional standards for pharmacists.