PCB6205:
Cancer Genomics and Drug Discovery
(Cancer Biology III)

CRN#: *****, Section 001, 3 Credit Hours
CAS / Molecular Biosciences

COURSE DESCRIPTION

I. University Course Description

This course expands the topics covered in PCB 6230, by providing an understanding of normal and abnormal cancer biological processes as they pertain to regulation of the genome. Topics to be covered include transcriptional and chromatin control, microRNA regulation, DNA replication and damage, mitotic regulation, cancer gene discovery, mode of action of chemotherapeutic drugs, and rational drug design. Students are expected to have already had basic courses on cell biology, molecular biology, and biochemistry. This course is taught jointly by multiple faculty members. Individual lecturers will provide recent primary research articles, and students will be expected to participate in the analysis of these papers as part of their grade. Students are expected to supplement the lecture information and primary research paper reading, and gain more in-depth understanding of each topic, by studying appropriate chapters in the primary assigned book.

II. Course Purpose

This course provides an understanding of novel cancer gene discovery approaches utilizing genomic information, as well as methodological and conceptual approaches to oncologic drug design and development.

III. Course Objectives

The objective is for students to gain a clear understanding of cancer in the context of genomic regulation and drug design.

IV. Student Learning Outcomes

At the conclusion of the course students will be able to discuss in detail the genetic and genomic aspects of cancer and be able to synthesize diverse levels of alterations/regulation in cancer covered in both this course and in PCB6230.