BSC6428:

Immunological Techniques

CRN#: *****, Section 001, 2 Credit Hours

CAS / Molecular Biosciences

COURSE DESCRIPTION

I. University Course Description

An introduction to modern core research facilities and methodologies used in cancer research. Topics include flow cytometry, in vitro and in vivo immunological techniques, animal modeling, microscopy, proteomics and cell biology techniques.

II. Course Purpose

This course will teach graduate students about molecular, immunological, and cellular biology techniques utilized in cancer research, as presented by faculty and staff with domain expertise. In-class discussion will be supplemented with tours, interactive assignments, and papers from the recent literature. Theory and practice of core services will be described. Students should develop an understanding of potential collaborative research opportunities outside of their individual principal investigator's laboratory and get an overview of research support from different parts of the cancer center.

III. Course Objectives

This course will teach the theory and practice of cancer research techniques for each section proposed below in the syllabus, providing knowledge about methods in cancer research from the lab bench to the clinic that are relevant to cancer biology, drug discovery, and patient assessment. This class will provide a starting point for the graduate students to use these techniques and technologies in their own research. In addition, lab exercises provide hands-on experience with certain techniques. Writing assignments are used to build experience for future projects (*e.g.* the qualifying exam) and career development.

IV. Student Learning Outcomes

Each graduate student will be able to demonstrate knowledge about every unit in the class on quizzes and the final exam. Laboratory tours and hands-on exercises will be used when possible to more directly show the students the value of the different research techniques. Experience will also be gained for writing key sections of manuscripts and grants.