



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Biomedical Engineering Applications in Cancer Biology

BIOMEDE 5560

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Introduction to cancer biology and the application of biomedical engineering disciplines, such as biomaterials, biomechanics, bioimaging, cell and tissue engineering, to fundamental and applied cancer research.

Prerequisites and Co-requisites:

Prereq: Biology 1113; and BiomedE 4110, or 4310, or 4410, or 4510; or permission of instructor.

Course Goals / Objectives:

- to apply quantitative eng approaches to cancer biology (a) to identify challenges in the field and communicate them effectively (g) to identify current problems at the interface of eng and cancer biology; to propose solutions to these problems (l)
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Course Topics:

- Introduction to Cancer: terminology, epidemiology, history, treatment
 - Cell signaling in Cancer: growth factors, mathematical modeling, Apoptosis
 - Tumor Microenvironment: biomaterials, tissue eng apps, fluid mechanics, drug delivery, imaging
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Designation:

Elective