THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Cardiovascular Bioengineering

BIOMEDE 5001

Credit Hours:
3.00 - 3.00

Course Levels:
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Overview of biomedical engineering approaches in imaging and intervention in cardiovascular medicine.

Prerequisites and Co-requisites:
Prereq: Sr or Grad standing in Engineering or Medicine, or permission of instructor.

Course Goals / Objectives:
- Demonstrate a basic working knowledge of the anatomy, physiology, and pathology of the cardiovascular system.
- Explain the engineering basis of select current and experimental medical treatments and diagnostic techniques.
- Propose a cardiovascular diagnostic or treatment and evaluate it with respect to realistic constraints such as economic, environmental, ethical, health and safety, manufacturability, and sustainability.

Course Topics:
- Structure and function of the vascular system; Derivation, evaluation and limitations of Murray's law.
- Etiology and pathology of vascular diseases
- Current and proposed treatment of vascular disease
- Etiology and pathology of heart diseases
- Current and proposed treatment of heart disease
- Biomedical imaging for cardiovascular disease.

Designation:
Elective