THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Clinical Preceptorship in BME

BIOMEDE 4001

Credit Hours:
3.00 - 3.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture

Course Description:
Introduction to the integration of biomedical engineering in clinical medicine through lectures and a preceptorship with clinical faculty. Students are introduced to real-life problems and opportunities in clinical medicine through lectures and a preceptorship in a clinical setting.

Prerequisites and Co-requisites:
Prereq: Jr or Sr standing in BME.

Course Goals / Objectives:
- Understand biology in the context of its application to selected areas of medicine and the role that engineering plays in facilitating a wide range of clinical medicine.
- Apply engineering principles to the solution of specific challenges arising in routine clinical care and interventional medicine (improvements in instrument design; better quantitation at all levels; application of engineering design to clinical
- Achieve a level of familiarity (and comfort) with the hospital/clinical environment.
- Articulate the importance of interdisciplinary training and skills.
- Extrapolate principles from seminar presentations that show how engineering plays an intrinsic role in clinical medicine.
- Present the results of the preceptorship experience in an organized and professional final presentation.

Course Topics:

- Ophthalmology - Corneal Mechanics
- Thoracic Robotic Surgery – In Situ 3D Tissue Printing
- Technology Development and Commercialization
- Cardiology Electrophysiology
- Head and Neck Surgery – Cochlear Implants
- Medical Simulation
- Neurology - Deep Brain Stimulation
- Head and Neck Surgery - 3D printing
- Radiology Informatics
- (Ophthalmology - Microendoscopic Opthalmoscopy
- Gastroenterology – Pancreas Imaging and AI
- Inclusive of Preceptorship

Designation:

Elective