



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Biomaterials

BIOMEDE 4310

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture

Course Description:

Principles of materials science; biocompatibility and biological reactions to implanted materials; natural biomaterials and synthetic materials used in biological applications.

Prerequisites and Co-requisites:

Prereq: 2000, MatScEn 2010, and Math 2174; or permission of instructor.

Course Goals / Objectives:

- List the general concerns of a biomaterial scientist
 - Compare and contrast classes of biomaterials
 - Explain the relationship between biomaterial chemistry, processing and properties
 - Identify factors dictating biomaterials selection
 - Predict and modify tissue-materials interactions
 - Explain testing methods and standard and regulations governing the clinical use of biomaterials
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Course Topics:

- Intro to Biomaterials: Bonding, Structure and Physical Properties of Biomaterials
 - Classes of Biomaterials
 - Biomaterial Processing
 - Surface Properties of Biomaterials
 - Host Interactions: Biomaterial Implantation, Protein and Cell Interaction
 - Wound Healing in Presence of Biomaterials
 - Biomaterials/Biodegradation/Regulations and Standards
 - Biomaterial Design
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Designation:

Elective