

ChBE 591: Biomaterials
 FALL 2006
 162 Bevill Building
 WF 3:30-4:45 pm

BIOMATERIALS COURSE TOPICS

<i>DATE</i>	<i>TOPIC</i>	<i>READING</i>
25-Aug	Overview, Definition, History	Preface, Powerpoint handouts
30-Aug	Cell Structure & Function, Molecular Biology	Handouts
1-Sept	Anatomy: composition, structure and function	Class assignment / Roundtable
6-Sept	Biomaterial Qualities: Strength, wear; Sterilization	Ch 9.1, 9.2
8-Sept	Medical Devices, Failure, Retrieval & Evaluation	Ch 9.3, 9.5
13-Sept	Introduction to Materials: Properties and Testing	Ch 1.1, 1.2, 2.1
15-Sept	Polymeric Materials	Ch 2.2
20-Sept	Metals and Ceramics	Ch 2.9, 2.10
22-Sept	Specific Examples of Materials used in Medicine	Class assignment / Roundtable
27-Sept	Additional Material Structures: Fibers, Gels, ...	Ch 2.4, 2.5, 2.6, 2.7, 2.8, 2.12
29-Sept	Materials Testing: Methods- Surface Analysis	Ch 1.4
4-Oct	Surface Modification for Biocompatibility	Ch 2.13, 2.14, 2.16
6-Oct	Review/Catch-up for EXAM #1	
11-Oct	EXAM #1	Ch 1, 2, 9
13-Oct	The Biology of Tissue: Extracellular Matrix, Surface Proteins	Ch 3.1, 3.4
18-Oct	Cell Response to Environment: Inflammation & Injury	Ch 3.2, 3.3
20-Oct	Fall Break - No Class	
25-Oct	Host Reaction to Biomaterials: Wound Healing	Ch 4.1, 4.2
27-Oct	Immunology & Toxicology	Ch 4.3, 4.5
1-Nov	Blood-Materials Interactions; Evaluation Methods	Ch 4.6
3-Nov	Biocompatibility: In Vitro and In Vivo Testing	Ch 5.1, 5.2, 5.3, 5.4
8-Nov	Biocompatibility 2: Testing Methods	Roundtable (5.1 - 5.4)
10-Nov	No Class- CSB @ Clemson	
15-Nov	Drug Delivery *Literature Critique Due	Ch 2.5, 2.6, 2.7, 7.14, handout
17-Nov	Biosensors OR Tissue Engineering	Ch 7.17 or 8.1-8.2
22&24-Nov	No Class - Thanksgiving	
29-Nov	Tissue Engineering or Selected Topic	Ch 8.1-8.2
1-Dec	*Term papers due: Presentations Day 1	Selected sections from Ch 7
6-Dec	Presentations Day 2	Selected sections from Ch 7
8-Dec	Presentations Day 3 / Review for Final	Selected sections from Ch 7
13-Dec	EXAM #2 7:00 - 9:30 pm	All material since 10/11