

ME/BioE C117 2007 Structural Aspects of Biomaterials

Professor Lisa Pruitt

Lectures: Tu/ Th 12:30-2, 203 McLaughlin

Labs: Th 3:30-5:30, 203 McLaughlin

Week	Lecture topic	Lab Topic	Deliverables
January 16 th Lec 1-2 Lab 1	Overview of biomaterials and medical devices Sterilization, biocompatibility and foreign body response	Technical writing skills-SK Overview of course projects Design Project I assigned	---
January 23 rd Lec 3-4 Lab 2	Biomechanical properties Constitutive behavior	Library workshop@ Moffitt Library (450C) w/Jean McKenzie (3:30-4:30; 4:30-5:30) Teams Assigned/FBDs-JF	P1D1
January 30 th Lec 5-6 Lab 3	Bending/Buckling Multiaxial loading	Introduction to design-JF Professional Skills lecture- Dr. Bob Ward	P1D2 (first lab quiz)
February 6 th Lec 7-8 Lab 4	Yielding Fracture	Oral Presentation Skills- SA Design process-JF	P1D3
February 13 th Lec 9 Lab 5	Fatigue-Dr. Scott Robertson	Design Project(I) write-up and presentations	Project I write-up Presentations
February 20 th Lec 10 Lab 6	Fatigue Midterm (I)	LHS – Exhibit development- CL, JM Seltzer, C Hanson Teaching Projects Assigned	Midterm (I)
February 27 th Lec 11-12 Lab 7	Corrosion Wear	Blooms Taxonomy-SG Design Project (II) assigned	HW-fatigue, corrosion, wear
March 6 th Lec 13-14 Lab 8	Orthopedics Tissues, progression of disease and damage	LHS Mock-ups Group Assessment	LHS working demos brochures
March 13 th Lec 15-16 Lab 9	Orthopedic clinical treatments for tissue replacement and repair. Case studies. Dr. Mike Ries. Dr. Andy Kohm.	Teaching projects Design Methodology	P2D1
March 20 th Lec 17-18	Cardiovascular Tissues, progression of disease, clinical treatments, devices. Case studies. Dr. Alan Pelton.	Outreach Teaching at LHS (I) Rossmoor group 3:30-5pm	Outreach teaching @ LHS (I) Rossmoor Group
March 27 th	SPRING RECESS	SPRING RECESS	----
April 3 rd Lec 19-20 Lab 10	Dental Tissues, progression of disease, clinical treatments, devices. Case studies. Dr. Sunita Ho.	Design methodology Feedback on teaching	P2D2

April 10 th Lec 21-22 Lab 11	Soft Tissues, clinical treatments, devices. Case studies.	Design Methodology Teaching projects	P2D3
April 17 th Lec 23 Lab 12	FDA regulatory issues Outreach Teaching at LHS (II)- 12:30-2- Emory Middle School	Design Methodology Teaching projects	P2D4
April 24 th Lec 24-25 Lab 13	Case Studies	Design Projects Feedbackon P2D4	Outreach Teaching Write-up
May 1 st Lec 26 Lab 14	Midterm (II) Course Evaluations	Design projects	Midterm (II)
May 8 th	Final Design Project Presentations	Final Design Project Presentations	Final Design Project Presentations
May 15 th	---	---	Final Design Projects Write-ups due

Grading:

Midterms (40%), Design Projects (30% (10/20)), Outreach Teaching Projects (20%), Attendance (5%), Quizzes (5%).

Book: *Dowling, Mechanical Behavior of Materials, 3rd edition and personal lab notebook (bound and numbered).*

GUEST LECTURES:

Ms. Jean McKenzie (Engineering Library, January 25th), Dr. Bob Ward (Polymer Technology, February 1st); Dr. Scott Roberston (Cordis, February 13th); Dr. Mike Ries (UCSF, March 13th); Dr. Andy Kohm (Kyphon Inc, March 15th); Dr. Alan Pelton (NDC, March 22nd); Dr. Sunita Ho (UCSF, April 3rd).

CONTACTS

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Lead GSIs

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