Biomaterials (BE-410)
Spring Quarter '09

Professor:	Charles S. Tritt, Ph.D.
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Office Hours:	M 2:00 to 4:00, W 2:00 to 4:00, Th 10:00 to noon and F 1:00 to 4:00. Don't hesitate to use Outlook to request a time to meet with me.
Lecture:	4:00-4:50 M, W &F in R-200
Textbook:	Biomaterials Science -- An Introduction to Materials in Medicine, 2nd ed., B. D. Ratner, A. S. Hoffman, F. J. Schoen and J. E. Lemons, Eds., Academic Press 2004 (ISBN 0-12-582463-7)
References:	Biomaterials -- An Introduction, 2nd ed., Joon B. Park and Roderic S. Lakes, Plenum (ISBN 0-306-43992-1) Blood Compatible Materials and Devices, Perspectives Towards the 21st Century. Chandra P. Sharma and Michael Szycher, Eds. Technomic (ISBN 87762-733-9)
Web page:	http://people.msoe.edu/~tritt/be410 (not yet available)
Policys	http://people.msoe.edu/~tritt/policies.pdf

Tentative Lecture Topics and Reading Schedule

Week	Day	Topic
1	1	Introduction to Biomaterials, Structure and Properties of Materials (Preface & Sec. 1.4)
	2	Surface Characterization and Imaging (Sec. 5.6)
	3	Material Characterization – Mechanical Properties (Sec. 1.2)
2	1	Characterization – Other Properties (not in textbook)
	2	Characterization – Phase Diagrams (not in textbook)
	3	Characterization – Phase Diagrams (not in textbook)
3	1	Metals (Sec. 2.9)
	2	Metals (continued)
	3	Ceramics and Glasses (Sec. 2.10 & 2.11)
4	1	Polymers (Sec. 2.2, 2.3, 2.5 & 2.6)
	2	Polymers (continued)
	3	Midterm I – Covers through ceramics
5	1	Polymers (continued)
	2	Natural Materials (Sec. 2.8)
	3	No Lecture – Good Friday

6	1	Natural Materials (continued)
	2	Composites & Textiles (Sec. 2.4 & 2.12)
	3	Cellular Responses (Sec. 3.1, 3.3, 3.4 & 3.5)
7	1	Wound Healing, Inflammation & Complement (4.1 to 4.4)
	2	Wound Healing, Inflammation & Complement (continued)
	3	Tissue Engineering (Sec. 8.1 & 8.2)
8	1	Biological Degradation of Materials (6.1 to 6.3)
	2	Midterm II – likely coverage through host response and wound healing.
	3	Adsorption (not in textbook)
9	1	Surface Modification (2.16 & 3.2)
	2	Student Presentations (continued)
	3	Student Presentations (continued)
10	1	Student Presentations (continued)
	2	Student Presentations (continued)
	3	Review (or catch up (as opposed to ketchup))

Biocompatibility Testing (Sec. 5.1 to 5.3) will be covered in a senior design sequence course.

The midterms and final will be closed book, closed notes.

Unless otherwise announced, the final exam will be on Thursday, May 21st from 2:00 until 4:00 in room R-200.

Approximate Grade Weights

Homework	3%
Poster & presentation	20%
Midterm	42 (2 @ 21% each)
Final	35%

Slide Shows

Slide shows are available from my faculty Out Box folder on the M: drive. Let me know if you have any problems accessing them.