

SYLLABUS
HNRS-200 Frontiers in Materials Science and Engineering

PURPOSE

Innovations in Materials Science are emerging at an astronomical speed. Research in the Universities and Research Laboratories proves that we have only seen the beginning of the Materials Revolution in which advances in Materials Science and Technology profoundly affect the way we live our lives. *Biodegradable plastics produced by genetically engineered microbes, structural materials that are analogs of naturally occurring materials such as shell or bone, improved bioengineered materials to replace joints, bone tendons and skin, super hard materials with hardness greater than that of diamond, aircraft skins that can detect and respond to changes in ambient conditions or to structural damage, bridges made of strong, light weight fiber reinforced plastic composites, and road surfaces that will last for a human lifetime.* We are just beginning to see the impact of The Materials Revolution. In this series of lectures we will bring to you the excitement of this modern and dynamic field of science and engineering.

ADMINISTRATIVE INFORMATION

TEXTBOOK

Class notes and assigned readings

SCHEDULE

	LECTURER	TOPIC
23-Sep	Prof. Michelle Marcolongo	Biomaterials and Tissue Engineering
30-Sep	Prof. Michelle Marcolongo	
7-Oct	Prof. Ulrike Wegst	Biological Materials and Biomimetics
14-Oct	Prof. Ulrike Wegst	
21-Oct	Prof. Jonathan Spanier	Materials for Energy Conversion
28-Oct	Prof. Jonathan Spanier	
4-Nov	Prof. Yury Gogotsi	Materials for Energy Storage
11-Nov	Prof. Yury Gogotsi	
18-Nov	No lecture	
25-Nov	Prof. Antonios Zavaliangos	Materials Science in Forensics
2-Dec	Prof. Antonios Zavaliangos	

GRADING:

5 Short Topic Question Assignments, 75% (15% each)
Final Quiz on all topics, 25%

TIME-LOCATION

Class 2:00 pm - 2:50 pm T Lebow Engineering Center 134 Sep 22, 2008 - Dec 13, 2008

CLASS LIST AS OF 09/11/2008

Thallner	Brynn	Biomedical Eng., Sch of Biomedical Eng.
Fernandes	Zachary	Chemical Eng., Chemical Eng.
Romano	Nicholas	Electrical Eng., Electrical & Computer Engr
Spangler	Leah	Environmental Eng., Environmental Eng.
Shields	David	Materials Eng., Materials Eng.
Benedetto	Edward	Mechanical Eng., Mechanical Engr & Mechanics
Hanson	Timothy	Mechanical Eng., Mechanical Engr & Mechanics
Kerr	Cody	Mechanical Eng., Mechanical Engr & Mechanics
Schroeder	Erik	Physics, Physics
Chessey	Mary	Physics, Physics
Annen	Matthew	Still Deciding, Office of Dean of COE
Sweeney	Ryan	Still Deciding, Office of Dean of COE
Szymanik	Mark	Still Deciding, Office of Dean of COE
Byrd	Roy	Still Deciding, Office of Dean of COE
Capriotti	Mark	Still Deciding, Office of Dean of COE
Premnath	Nikhil	Still Deciding, Office of Dean of COE