Physics 413
Introduction to Biophysics
TuTh 11:00 am
Spring 2014

Instructor: Dr. Joel Mobley
Room 1034, NCPA
Phone: 915-6937
jmobley@olemiss.edu

Office Hours: Tuesday 12:45-2:15, Lewis Hall Room 203 (Optics Lab)

By appointment at **1034 NCPA**
I will be available on MWTh 1:30-4:45
Email me if you plan to come to NCPA (see map on next page)

Final Exam: Tuesday, May 6th, 12:00 pm

Textbook: **Biological Physics: Energy, Information, Life,** Philip Nelson

References:

Biophysics by Roland Glaser
Biophysics, An Introduction by Rodney Cotterill
Biological Thermodynamics by Donald T. Haynie
Physics in Biology and Medicine by Paul Davidovits

Learning Objectives:
After completing this class the student should understand the following:

- how the principles of physics underlie life processes at the cellular level,
- how to apply physics knowledge to solve problems in biology and biomedicine,
- the physical principles of biomedical diagnostic techniques such as ultrasound, x-rays, computed tomography (CT) and magnetic resonance imaging (MRI).

Content: For the first half of the class, we will study the role of physics in life processes and physiology. For the other half of the course we will discuss the physics of biomedical diagnostic imaging.

Student Presentation: *Each student is required to give a 15 minute presentation in order to successfully complete the course.* The subject of the presentation must be approved by the instructor. The only requirements are that potential topics be related to biophysics, biology or biomedicine. The student will submit a list of questions based on their presentations for possible inclusion on final and/or the 2nd exam. The schedule and related deadlines will be discussed in class.

Article Discussion: Throughout the semester, we will have class discussion days where a scientific article is reviewed. Students must read the article in advance and come prepared to participate in the discussion. The articles will be available in electronic format prior to the class.

Policy on Absences: Attendance will be taken on article discussion days and student presentation days.

Lecture Notes and Supplementary Materials:

Supplementary materials used during the course will be posted on Blackboard. Some of the lecture notes will be provided. Availability of these lecture notes will be based on attendance for the relevant class.

Grading

25 % each	2 Midterm Exams (To be scheduled)
25 %	Final Exam (May 6th, noon)
15 % total	Homework (4 to 6 assignments over the semester)
10 %	Student Presentation (REQUIRED TO PASS THE COURSE)

Grading Scale

A: 100.0 – 92.0	**B+**: 87.4 – 82.5	**C+**: 74.9 – 70.0	**D**: 62.4 – 50.0
A-: 91.9 – 87.5	**B**: 82.4 – 78.5	**C**: 69.9 – 66.0	
	B-: 78.4 – 75.0	**C-**: 65.9 – 62.5	**F:**<50.0

Location of NCPA