BIM 242: Introduction to Biomedical imaging

Description
This course will cover the basic physics and engineering principles underlying image science. At the end of the course, students will have a firm foundation in key concepts associated with the main imaging modalities of radiography, X-ray computed tomography, magnetic resonance imaging, ultrasound, positron emission tomography and optical imaging.

Lectures
Class meets twice per week (Monday and Wednesday), from 8:00 AM to 9:50 AM. The first day of class is October 1, 2012. The last day of instruction is December 5, 2012.

Grading
The letter grade will be based on performance on the final exam (50%), homework (25%) and in-class pop quizzes (25%). The pop quizzes will be administered at the beginning of randomly chosen lectures during the course.

Final exam
The final exam is take-home and will consist of multiple choice questions. It will be posted on SmartSite on December 6th and is due via SmartSite on December 12th, 5:00 pm.

Recommended reading:
There is no textbook for the course. Here is a list of recommended books:
1) Bushberg et al., “The Essential Physics of Medical Imaging, Third Edition”,
2) Wang et al., “Biomedical Optics: Principles and Imaging,”
3) Cherry et al., “Physics in Nuclear Medicine, Fourth Edition,”