Course Title: SCTC 5102 - Physics of Medical Imaging II

Prerequisites: A grade of “C” or better in SCTC 5101 - Physics of Medical Imaging I.

Textbook(s):
1. The Essential Physics of Medical Imaging, Third Edition , Jerrold T. Bushberg

Course Goals:
This will be the second of a series of two courses that will be focused on physics principles and their use in medical imaging. This second course reviews the production of medical images with ultrasound, MRI and other state of the art imaging techniques. Additional fundamental principles of physics important to the production and use of radiation for treatment and diagnostic purposes are reviewed. More detailed radiation detection methods, focused on dose measurement, utilizing a variety of methods, are discussed along with the appropriate instrumentation.

More specialized topics of Radiation Safety and Radiation Protection in Diagnostic Radiology will be covered in association with The Environmental Health and Radiation Safety Department of Temple University.

Topics Covered:
1) MRI
2) Ultrasounds
3) Infrared Imaging
4) Imaging of Tissue Electrical Impedance
5) Optical Imaging
6) Multimodality Imaging
7) Medical Image Processing
8) Radiation safety

Attendance Policy:
Class attendance is advised but is not mandatory, however class participation is important and can affect your final grade.

Exams:
The day of the exams is announced at the beginning of semester in the Class schedule and therefore make-ups will not be granted.
The absence from an exam will result in a grade of zero.
Exams will be closed-book and require students to demonstrate knowledge and skill. The exam covers all material covered in the class prior to the exam. This includes material that was covered in previous exams.

**Homework:**
Late submissions and makeups are not permitted.

**Individual Assignment:**
Students will be required to prepare a presentation of a subject that is related to the class and present it in class. The topic of the report should be approved by the instructor. A list of possible subject will be discussed in class.

**Grading:**
The grades will be assigned as follows:
- 1st Midterm 20%
- 2nd Midterm 20%
- Final Exam 30%
- Homework 15%
- Presentation 15%

**Accommodations for Students with Disabilities:**
Any student who has a need for accommodation based on the impact of a documented disability, including special accommodations for access to technology resources and electronic instructional materials required for the course, should contact me privately to discuss the specific situation by the end of the second week of classes or as soon as practical. If you have not done so already, please contact Disability Resources and Services (DRS) at 215-204-1280 in 100 Ritter Annex to learn more about the resources available to you. I will work with DRS to coordinate reasonable accommodations for all students with documented disabilities.

http://www.temple.edu/studentaffairs/disability/accommodations/

**Student and Faculty Academic Rights and Responsibilities:**
Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has a policy on Student and Faculty and Academic Rights and Responsibilities (Policy #03.70.02) which can be accessed through the following: