Course Title: SCTC 5101 - Physics of Medical Imaging I

Prerequisites:
Admittance to the PSM in Medical Dosimetry Program

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

Course Goals:
This is an introductory course in the physics of Medical Imaging. The goal of the course is to allow the students to gain insight of how modern Imaging systems work and what they can tell us about the function and health of our body. The course will discuss how various physics concepts are applied to medicine and state of the art diagnostic radiology and radiotherapy techniques.

It is the first of a series of two and will be primarily focused on the interaction of radiation with matter and all the physics principles that are involved with applications in medicine. Examples include x-rays, tomography, radiation detection and radioactivity.

Topics Covered:
1) Interaction of radiation with matter
2) X-Rays and X-Ray CT
3) Mammography
4) Fluoroscopy
5) Radioisotopes and Radiopharmaceuticals
6) Radiation detectors
7) SPECT, PET
8) Introduction to Radiation Therapy

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/](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: [http://policies.temple.edu/PDF/99.pdf](http://policies.temple.edu/PDF/99.pdf)

CARE Team in the Dean of Students Office:
Any student who has difficulty affording groceries or accessing sufficient food to eat every day or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the CARE Team in the Dean of Students Office for support. The CARE Team web address is [careteam.temple.edu](http://careteam.temple.edu). Furthermore, please notify me if you are comfortable in doing so. This will enable me to provide any other resources that I may possess.