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Textbook: The Essential Physics of Medical Imaging, Second edition
Authors: Bushberg JT, Seibert JA, Leidholdt EM and Boone JM:

Publisher: Lippincott, Williams and Wilkins,
Baltimore, Philadelphia, Hong Kong …2002

Frequent class notes from the additional reading material and various other sources.

Objective: The objective of this course is to familiarize the student with imaging methods in medicine, particularly in diagnostic radiology as it is found at UMC’s Radiology Department:

- Projection Radiography
- Computed Tomography (CT)
- Nuclear Medicine (SPECT)
- Emission Tomography (PET)
- Multi-Modality-Imaging (FUSION)
- Ultra Sound Imaging (US)
- Magnetic Resonance Imaging (MRI)
- Selected topics such as Color displays
  - The human visual process
  - Generation of Brems-strahlung
  - Interaction of x-rays with matter
  - Projection imaging process
  - Reconstruction from projections
  - Three-dimensional imaging
  - X-ray detectors and their performance
  - Signal, noise and information
  - Elements of digital imaging

A particular highlight are demonstrations in the UMC Radiology Department and the chance for "hands-on" experience in terms of a special project
Preferred Class time: Tuesday and Thursday, 8 to 9:15 AM
Class-Room Physics Department Room 220.

Course Grading
- Homework (30%)
- Exams (70%)
Both Homework and Exams will be take-home types. There will be no in-class exams. The final exam is due on the day when the Final Exam for PHYS-440/540 is scheduled.

Students requiring accommodation in testing or note taking must notify instructor and must deliver a Disability Resource Center faculty letter within the first few days of the course.

Additional Reading Material:


Below is a map for UMC on Campbell Ave, and for my office at the Radiology Research Lab, Building 211, on the Ring-Road surrounding UMC.

It is basically the Map, found in the U-of-A phone directory after the blue pages.