ANAT5101 Physical basis of medical imaging, 4 ECTS
Book: Chris Guy, "Introduction to the principles of medical imaging", Imperial College Press
Time-table for the spring 2015

This course is a part of training of a responsible director of radiation safety, and is aimed for radiologists and for people completing the qualification. Graduate and masters level students will gain comprehensive information about physical basis of medical imaging and their applications.

Starting from the physical principles of clinical and pre-clinical imaging, the students are introduced to various imaging modalities available at the Turku University Hospital and at the Turku Center for Disease Modelling. Along with the lectures, demonstrations will be arranged to give students a closer look at a functioning medical imaging center. **Content:** Atomic and Nuclear Physics and Radiation Protection, X-Ray radiography, Tomography, Gamma imaging, MRI, Ultrasound imaging, PET-imaging

**Tuesday 13.1.**
**Lectures 12-16, PET Centre seminar room, Building 14 1st floor, TUH Campus area**
Basics of radiation physics
X-ray basics
X-ray applications
Ultrasound basics
Ultrasound applications

**Tuesday 20.1.**
**Lectures 12-16, PET Centre seminar room**
CT-basics
CT-applications
Special techniques
**Demonstrations 16-18,** University hospital Jukka Järvinen, Hannele Niiniviita
Radiology
Special techniques

**Tuesday 27.1.**
**Lectures 12-16, PET Centre seminar room**
PET-basics
PET-applications
Isotope imaging basics
Isotope imaging applications
Medical imaging networks
**Demonstrations 16-18,**
PET Centre, PET building 14
Isotope imaging; U-building

**Tuesday 3.2.**
**Lectures 12-16, PET Centre seminar room**
MRI basics
MRI imaging
MRI applications
**Demonstrations 16-18,** University hospital Jani Saunavaara
MRI

**Tuesday 10.2.**
**Lectures 12-16, PET Centre seminar room**
Radiation biology
Radiation protection and legislation
Conclusions