

SYLLABUS DEL CORSO

Instrumentation for Diagnostic Imaging and Radiotherapy

2223-2-H4102D014-H4102D042M

Aims

Knowledge on:

- X-ray based, US-based, Magnetic Resonance, Nuclear Medicine and hybrid diagnostic imaging instrumentation
- Radiotherapy instrumentation

Contents

Diagnostic imaging modalities and radiotherapy systems

Detailed program

Diagnostic imaging instrumentation:

- X-ray imaging: revision of physical principles and image formation; multislice CT, cone beam CT, mammography, angiography
- Magnetic Resonance Imaging: revision of physical principles and T1/T2 image formation; diffusion weighted and perfusion weighted MRI, fMRI, spectroscopy
- Echography: physical principles and image formation; echographic probes
- Nuclear Medicine Imaging: revision of physical principles and image formation; PET/CT and PET/RM hybrid instrumentation

Radiotherapy instrumentation:

- Linear accelerator and components
- Intensity Modulated Radiotherapy (IMRT), Image Guided Radiotherapy (IGRT), tomotherapy
- Cyber knife, gamma knife

Prerequisites

Physics basic knowledge

Teaching form

Lectures

Textbook and teaching resource

Slides presented during the course

Semester

Second semester of the second year

Assessment method

The course exam consists of 2 open questions aimed at verifying the student's knowledge. Each question is given a score between 0 and 15. Laude is assigned in case of particularly deserving tests.

Office hours

By appointment fixed by e-mail

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING
