UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Creation and Processing of Mri Images

2021-2-I0303D035-I0303D054M

Aims

Students are expected to acquire knowledge about genesis of the signal in MRI, about Formation and Processing of Images and algorithms reconstruction

Contents

The course aims to provide students with basic knowledge of physical principles, formation and processing of MR Images

Detailed program

Genesis of the signal in MRI. Formation and Processing of Images MR: K-space image formation and Fourier transform. Digital Imaging: the main features, the image matrix and field of view, image processing and analysis interpolation of raw data, algorithms reconstruction, 2D post processing (MPR), 3D post processing (MIP,SSD,VR,VE).

Prerequisites

Diagnostic Imaging Techniques I

Teaching form

Exercises

Textbook and teaching resource

F. Mazzucato, “Anatomia Radiologica. Tecniche e Metodologie in Radiodiagnostica”.

The teachers will provide other educational materials

Semester

Second semester

Assessment method

A single score, related to Medical Imaging Equipment: MR and US and Image Formation and Elaboration: MR modules, is assigned based on a written test composed of questions covering the full range of major topics of both teaching modules. There is a 90 minute time limit to complete the test which is composed of 9 multiple-choice and 3 open-answer questions. The answers to multiple-choice questions must be selected among 4 options, out of which only one is correct, each correct answer is worth 1. Each open-answer question is worth a maximum of 7 points. There are no penalties for wrong or unanswered questions. Final total score is equal to the sum of points assigned to correct answers with a total maximum of 30 and a threshold of 18. For each test 2 open-answer questions are about MR and 1 about US; at least 3 multiple-choice questions are about MR and 3 are about US.

Office hours

By appointment required by mail