UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

# Creation and Processing of Mri Images

**2223-2-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

## Sustainable Development Goals

GOOD HEALTH AND WELL-BEING