



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Creation and Processing of Mri Images

2223-2-I0303D035-I0303D054M

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#### 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

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