



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Radiotherapy Techniques

2021-3-I0303D015

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#### Aims

The course aims to provide students with: the knowledge of radiotherapy equipment, the various techniques of irradiation (external beam radiotherapy brachytherapy), the methods for calculating the dose distribution and principles of dose optimization; it also aims to provide knowledge about the different modality of irradiation depending on the main tumors.

#### Contents

The course aims to provide students with the knowledge about Radiotherapy Oncology

#### Detailed program

Radiotherapy equipments. The various stages of the radiotherapy:

prescription, centering, simulation, acquisition of anatomical data, preparation of treatment plan, evaluation plan, implementation, testing, monitoring during treatment, monitoring over time.

The choice of beams: photons and electrons.

The choice of energy. The shaping of the beam. The conformation. The intensity modulation. The geometry of irradiation.

Dose fractionation. The volumes of interest. ICRU reports. The set-up of the patient: positioning and immobilization. Imaging in Radiotherapy. The quality controls. The recording of treatment data.

Brachytherapy: Indications; devices for intracavitary and interstitial treatments, and the different radioisotopes; loading modes: pre-loading, after-loading, -remote-loading

## **Prerequisites**

Health Care and Disease Prevention

## **Teaching form**

Lectures and exercises

## **Textbook and teaching resource**

Teachers will provide educational materials

## **Semester**

First semester

## **Assessment method**

Written and oral test about RT equipments, Clinical Dosimetry, Radiobiology and Clinical Radiotherapy and only oral test about the topics of the other modules.

The final mark is based on the average score obtained by the students during the different evaluations

## **Office hours**

By appointment required by mail

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