



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Radiotherapy Techniques

2425-3-I0303D015

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#### Aims

The student will be able to: describe the different phases of the radiotherapy process from the prescription visit to post-therapeutic monitoring; define and describe in detail the technical phases of setting up and carrying out the radiation treatment; define the methods of correct multidisciplinary integration between the different professional figures operating in the Radiotherapy department, refine the methods of approaching the cancer patient.

#### Contents

The teaching aims: to provide the student with knowledge of the different irradiation techniques both in the field of external beam radiotherapy and in that of brachytherapy; to provide the student with knowledge on the methods of calculating the dose distribution and on the principles of dose optimization; to provide the student with knowledge relating to the patient's path in Radiotherapy; to provide the student with knowledge on irradiation methods according to the main tumor diseases.

#### Detailed program

The various phases of the radiotherapy procedure: prescription, setting, centering, simulation, acquisition of anatomical data, development of the treatment plan, evaluation of the plan, execution, verification, monitoring during treatment, monitoring over time.

The choice of beams: photons, electrons. The choice of energy.

Performance in depth.

The beam modifiers.

The conformation.

Intensity modulation.

The irradiation geometry.  
Dose fractionation methods.  
The volumes of interest.  
ICRU reports.  
Patient set-up: positioning and immobilization methods.  
Imaging in Radiotherapy.  
Quality controls.  
Recording of processing data.  
Brachytherapy: indications; devices for endocavitary treatments and interstitial treatments; the different radioisotopes; loading modes: pre-loading, after-loading, -remote-loading.

## **Prerequisites**

Health Care and Disease Prevention

## **Teaching form**

Teaching takes place in attendance, with frontal and interactive lessons

## **Textbook and teaching resource**

Teachers will provide educational materials

## **Semester**

First semester

## **Assessment method**

Written and oral exam to evaluate preparation on the exam programme, the ability to organize knowledge and communication skills in a disciplinary context.

The written test will consist of multiple choice questions for each module. The oral exam will consist of a more in-depth assessment of knowledge of the topics covered in the course modules through open questions, with questions possibly relating to errors made during the written exam. The final evaluation will take into account the results obtained in both the written test and the oral test.

## **Office hours**

By appointment required by mail

**Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION

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