

Academic Year/course: 2022/23

69726 - Radiotherapy technologies

Syllabus Information

Academic Year: 2022/23

Subject: 69726 - Radiotherapy technologies

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 633 - Master's Degree in Biomedical Engineering

ECTS: 3.0

Year: 1

Semester: Second semester

Subject Type: Optional

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student will have the right to a single assessment test at the first and second call.

In this case, the written test will deal with all the theoretical/practical content seen in class.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It is based on the Problem-Based Learning method (PBL) which is a student-centered pedagogy for students to learn about a topic through the experience of solving an open-ended problem.

4.2. Learning tasks

The course includes the following learning tasks:

- A01 Lectures. The main course contents are presented. Student participation is encouraged.
- A02 Practice sessions. Different practical activities and tasks are proposed related to the main contents of the course.
- A03 Computer lab sessions. Different lab sessions are carried out.
- A04 Visit to a clinical center.
- A05 Assignment. Students must submit a written report on a research topic.
- A09 Assessment. The reports derived from the practical activities and the final exam will be evaluated.

4.3. Syllabus

The course will address the following topics:

1. Introduction and general concepts of radiation therapy.

2. Radiation Models. Pencil Beam Dose Calculation Algorithm.
3. Intensity-modulated radiotherapy (IMRT) planning. Constrained Optimization.
4. Delivery of Fluence Map. Multileaf collimator: Segments and Monitor Unit.

4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the EINA website.

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=69326>