

## 68407 - Radiology and nuclear medicine research

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 68407 - Radiology and nuclear medicine research

**Faculty / School:** 104 - Facultad de Medicina

**Degree:** 530 - Master's in Introduction to Medical Research

**ECTS:** 5.0

**Year:** 1

**Semester:** Second semester

**Subject type:** Optional

**Module:**

### 1. General information

**Elective subject of the second quarter of the Master's Degree in Initiation to Research in Medicine.**

**The subject has the following approaches and objectives:**

- \* To know the legislation related to the radiological protection of people working in the presence of ionizing radiation.
- \* To know the legislation related to the radiological protection of the patient.
- \* To know how to design a quality assurance plan.
- \* To become familiar with modern diagnostic imaging techniques.

### 2. Learning results

**Upon completion of this subject, the student will be able to:**

Understand the fundamentals of radiology in the general context of research.

Analyse and summarize the regulations applicable to medical facilities that use ionizing radiation.

Design and prepare a quality assurance program in different clinical activities, when required by legislation: radio diagnosis, radiotherapy, nuclear medicine.

These learning results allow to achieve a deep knowledge of the legislation related to the use of radiation in medicine and its proper application in the design of a General Quality Plan.

### 3. Syllabus

- 1 Justification for the use of ionizing radiation in medical exposures.
- 2 Quality criteria in radiodiagnosis.
- 3 Quality criteria in nuclear medicine.
- 4 Quality criteria in radiotherapy.
- 5 Regulation on health protection against ionizing radiation.
- 6 Regulation on nuclear and radioactive facilities.
- 7 Regulation on the installation and use of X-ray devices for medical diagnostic purposes.
- 8 Operating specifications for radioactive facilities.
- 9 Medical exposure in research.
- 10 Research with radiopharmaceuticals.
- 11 Exposure to ionizing radiation in particular situations.
- 12 Pregnancy and ionizing radiation.

### 4. Academic activities

This is a fundamentally practical subject, focused on the application of modern imaging techniques to various pathologies and of current legislation to the design of a Quality Assurance Plan for a unit in which ionizing radiation is used.

Planned activities: lectures (1), discussion in forums through the ADD (*Anillo Digital Docente*), assignments (2).

The subject will be taught through the ADD, where the study material is included, except for the initial face-to-face class where all the necessary information will be provided.

There will be two participation forums, where students will submit their works and they will be discussed.

## **5. Assessment system**

**The student must demonstrate achievement of the intended learning results through the following assessment activities:**

1 Active participation in the face-to-face session: 10%.

2 Analysis of the legal regulations applicable to the use of ionizing radiation. Assessment of the document submitted through the ADD. The following will be taken into account: presentation, ability to summarise and personal opinion on the legislation analysed: 30%.

3 Active participation in the forums: 20%.

4 Preparation and design of a Quality Assurance Plan for a simulated radio diagnostic, radiotherapy and/or nuclear medicine facility. The following will be taken into account: presentation of the document, methodology applied, written expression, understanding of the document and bibliography consulted: 40%.

## **6. Sustainable Development Goals**

3 - Good Health & Well-Being