Universidad Zaragoza

Academic Year/course: 2023/24

68407 - Radiology and nuclear medicine research

Syllabus Information

Academic year: 2023/24
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.

* These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda: Goal: Health and well-being.

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%.