

Academic Year/course: 2022/23

25424 - Image Diagnosis Techniques

Syllabus Information

Academic Year: 2022/23

Subject: 25424 - Image Diagnosis Techniques

Faculty / School: 127 - Facultad de Ciencias de la Salud

275 - Escuela Universitaria de Enfermería de Huesca

375 - Escuela Universitaria de Enfermería de Teruel

Degree: 559 - Degree in Nursing

560 - Degree in Nursing

561 - Degree in Nursing

ECTS: 6.0

Year: 4

Semester: First semester

Subject Type: Optional

Module:

1. General information

1.1. Aims of the course

This subject is structured through the following objectives:

Describe the characteristics of the techniques that use ionizing radiation for diagnostic and therapeutic purposes and establish their relationship with the nursing activities that are carried out in Diagnostic Imaging units.

Know the physical basis of ionizing radiation and its applications in the diagnosis and treatment of diseases.

Know the biological effects of ionizing radiation.

Apply the knowledge of the different radioprotection techniques aimed at the patient and the professional exposed to ionizing radiation.

Provide nursing care to patients undergoing examinations with contrast media.

Provide nursing care to patients undergoing interventional radiology examinations.

Plan and provide nursing care in the different Diagnostic Imaging Techniques.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the results of learning of the subject, provides training and competence to contribute, to a certain extent, to the fulfillment of objective number 3 of guaranteeing health and well-being in all people.

1.2. Context and importance of this course in the degree

The spectacular development of Diagnostic Imaging Techniques in recent decades and the growing demand made by the different clinical hospital and primary health care units for imaging tests, justify the need for adequate training of the students of the Degree. of nursing. In this sense, it is necessary to know all the Diagnostic Imaging procedures and the fundamental role that the nursing professional plays in the Diagnostic Imaging units.

The Faculty of Health Sciences of the University of Zaragoza responds to this need for student learning, including the subject of Diagnostic Imaging Techniques in the Nursing Degree Curriculum.

1.3. Recommendations to take this course

To take this subject, it is recommended that the student have:

-Anatomical-physiological knowledge.

-Knowledge of clinical nursing.

-Knowledge of the methodology applied in care plans using the NANDA, NOC and NIC links.

2. Learning goals

2.1. Competences

Specific skills

Ability to provide nursing care to patients undergoing a Diagnostic Imaging procedure.

Ability to interpret the data provided by Diagnostic Imaging tests as a source of relevant information for Nursing Care.

Ability to assess the benefit/risk of Diagnostic Imaging Techniques on health, applying radiological protection criteria to patients and exposed professionals.

Ability to recognize the indications and diagnostic and therapeutic performance of Diagnostic Imaging Techniques.

2.2. Learning goals

To pass this course, the student must demonstrate:

Know the terminology used in the field of Diagnostic Imaging Techniques.

Know the different radiological diagnosis and treatment systems and their proper use based on the assumptions that arise in the clinic.

Know the advantages and adverse effects of ionizing radiation.

Know the appropriate preparations in patients for performing diagnostic imaging tests.

Use the information from Diagnostic Imaging Techniques to carry out a quality Nursing Process.

Acquisition of the ability to integrate with the rest of the professionals of the health team of the Radiodiagnosis Units.

Know the relevance of Diagnostic Imaging Techniques in disease prevention.

2.3. Importance of learning goals

The importance of the learning results obtained in the subject will allow the student to:

1. Have acquired sufficient knowledge about Diagnostic Imaging Techniques to effectively carry out the professional tasks of a nurse.
2. Have acquired knowledge about the different Diagnostic Imaging tests used for diagnostic and therapeutic purposes in Clinical Nursing, Geriatric Nursing and Maternal-Child Nursing.
3. Have acquired skills on simulated clinical situations of nursing processes related to the different Diagnostic Imaging Techniques.

3. Assessment (1st and 2nd call)

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

Students must demonstrate that they have achieved the learning results through two evaluation tests, which are specified below:

Evaluation	Final grade weighting
Evaluation of the theoretical contents	70 %
Evaluation of the contents of laboratory practices	30%

Characteristics of the evaluations:

The ability to express the dimension of the competence related to the knowledge acquired in learning the subject is valued, with the following characteristics:

1. Characteristics of the evaluation of the theoretical contents and the contents of laboratory practices:

- a) Description. Individual written test of five questions with a brief development of the contents of the theoretical program and program of laboratory practices, according to the weighting of each part described in this section.
- b) Criteria. The ability to apply the knowledge and skills acquired is valued.
- c) Requirement level. To pass the subject it is necessary to achieve a minimum score of 50% of what is established, that is, 3.5 out of 7 for the theoretical content and 1.5 out of 3 points for the practical content.

2. Exams:

- a) Partial test. A voluntary partial test will be carried out at the end of the contents of the theoretical program and the contents of the laboratory practices. It is eliminatory for students who obtain at least 50% of the final score.
- b) Final exam. Mandatory test for students who have not passed or have not taken the partial exam. Students who wish to improve the grade obtained in the partial test may also take this final test. It will have the same characteristics in terms of format and scoring as the qualifying partial exam.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The learning process, which is proposed for this subject, is as follows:

- Expository and participatory classes
- Problem-based learning
- Exemplification and case study
- Tutorials

4.2. Learning tasks

According to the Teaching Organization Plan (POD), the 6 ECTS of the subject are assigned to the following learning activities:

- Master class. In this activity, the theoretical contents of programming are transmitted through a master class. Number of hours assigned per student: 35.
- Laboratory practices. In this activity, divided into four groups, the most relevant nursing interventions are implemented in the nursing processes of diagnostic imaging techniques. Number of hours assigned per student: 25.
- The autonomous study of the student represents 84 hours and the evaluation 6 hours.

4.3. Syllabus

Contents theory program (master classes)

Module 1. Introduction to Diagnostic Imaging

- Topic 1. Concept and historical evolution of Diagnostic Imaging Techniques.
- Topic 2. Nursing activities in Diagnostic Imaging Techniques.
- Topic 3. Radiological preparation of the patient.
- Topic 4. Quality control in Radiodiagnosis.

Module 2. Physical bases of Diagnostic Imaging

- Topic 5. Matter.
- Topic 6. Electromagnetic radiation.
- Topic 7. Ionizing Radiation.
- Topic 8. Concept and Properties of Rx.
- Topic 9. Interactions of Radiation with Matter.
- Topic 10. Biological effects of radiation.
- Topic 11. Radiological Image: Digital Image.

Module 3. Radiological Protection

- Topic 12. Concept of radiological protection and radiosensitivity.
- Topic 13. Radiological protection measures.
- Topic 14. Specific protection measures in children and pregnant women.

Module 4. Use of contrasts in Diagnostic Imaging Techniques

- Topic 15. Radiological contrast media.
- Topic 16. Contrast media in Ultrasound.
- Topic 17. Contrast media in Magnetic Resonance.
- Topic 18. Nursing care in the administration of contrast media.

Module 5. Nursing Assistance in Diagnostic Imaging Techniques

- Topic 19. Conventional radiology.
- Topic 20. Contrast radiology.
- Topic 21. Vascular and Interventional Radiology.
- Topic 22. Ultrasound.
- Topic 23. Computed Tomography.
- Topic 24. Magnetic Resonance.
- Topic 25. Nuclear Medicine.

Contents laboratory practical program

- Care plan in the patient submitted to ultrasound study.

- Care plan in the patient submitted to CT study.
- Care plan in the patient undergoing MRI study.
- Care plan for patients undergoing a Nuclear Medicine study.
- Usefulness of ultrasound in the cannulation of venous catheters.
- Preventive radiological protection measures in patients and professionals exposed to ionizing radiation.
- Radiological study in ICU.
- Mammography: Usefulness in breast cancer.

4.4. Course planning and calendar

Calendar and planning of learning activities: The activities of the subject, for the 2022-23 academic year, are planned in coordination with the rest of the subjects of the 4th year of the Nursing degree, according to the calendar approved by the Faculty of Sciences of the Health of Saragossa.

Key dates:

This subject is taught in the first semester of the 2022-23 academic year. The dates considered key are the following:

a) Start date and end date of the course: They are published in the official calendar of the University of Zaragoza for the 2022-23 academic year.

b) Date of exams:

Partial exam: Date and time slot to be determined and agreed with the students.

Final exams: The official dates of the final exams, approved by the Faculty of Health Sciences, are published on the website of the Nursing Degree of the University of Zaragoza academic year 2022-23.

4.5. Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=25424&year=2020