

25424 - Image Diagnosis Techniques

Información del Plan Docente

Academic Year	2018/19
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 280 - Degree in Nursing 561 - Degree in Nursing 273 - Degree in Nursing 281 - Degree in Nursing 560 - Degree in Nursing
ECTS	6.0
Year	---
Semester	Indeterminate
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 by applying the various general nursing activities that are developed in the 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 different radiation protection techniques aimed at the patient and the professional exposed to ionizing radiation.
- Provide nursing care to patients undergoing contrast media scans.
- Provide nursing care to patients undergoing interventional radiology examinations.
- Plan and provide nursing care in the different techniques of Diagnostic Imaging.

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 from different hospital clinical units and primary health care for image tests justify the need for adequate training of students of the Degree of nursing. In this sense, it is necessary to know all the procedures of Diagnostic Imaging and the fundamental role held by the nursing professional 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 Techniques for Image in the Nursing Degree Curriculum.

1.3. Recommendations to take this course

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To take this asignatura, it is recommended that the student has:

-Anatomo-physiological knowledge.

-Clinical nursing knowledge.

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

2.Learning goals

2.1.Competences

Upon passing the subject, the student will be more competent.

Specific competences

-Ability to provide nursing assistance to patients undergoing a Diagnostic Imaging procedure.

-Ability to interpret the data provided by Diagnostic Imaging tests as a source of relevant information from Nursing Assistance.

-Ability to assess the benefit / risk of Diagnostic Imaging Techniques for 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

The student, to overcome this subject must demonstrate:

-Know the terminology used in the field of Diagnostic Imaging techniques.

-Know the different systems of diagnosis and radiological treatment and the proper use of them according to the assumptions that arise in the clinic.

-Know the advantages and adverse effects of ionizing radiation.

-To know the adequate preparations in patients for the performance of diagnostic tests for the image.

-Use the information from the techniques of Diagnostic Imaging to perform a Quality Nursing Process.

-Acquisition of the integration capacity with the rest of the health team professionals of the Radiodiagnosis Units.

-Know the relevance of Diagnostic Imaging techniques in the prevention of diseases.

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 the techniques of Diagnostic Imaging to carry out the professional tasks of a nurse effectively.

2. To have acquired knowledge about the different Diagnostic Imaging tests that are used for diagnostic and therapeutic purposes in Clinical Nursing, Geriatric Nursing and Maternal and Child Nursing.

3. To have acquired skills on simulated clinical situations of nursing processes related to the different techniques of Diagnostic Imaging.

3.Assessment (1st and 2nd call)

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

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

Evaluation system

SE1 Evaluation of the theoretical contents. 70%

SE3 Evaluation of problem solving, exercises and case studies. 30%

Characteristics of the evaluations:

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

1. Characteristics of the evaluation of the theoretical-practical contents:

a) Description: Individual written test of five questions of brief development of the theoretical-practical program of the subject.

b) Criteria: The ability to apply the knowledge and skills acquired is valued.

c) Level of requirement: To pass the subject it is necessary to achieve a minimum score of 50% of the established, that is to say, 3.5 out of 7 of the theoretical contents and 1.5 out of 3 points of the practical contents.

2. Partial and final exams:

a) Partial tests: A voluntary partial will be made at the end of the theoretical-practical contents. It has eliminatory character 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 submitted to the partial exam. Students who wish to improve the grade obtained in the partial test may also be submitted to this final test. It will have the same characteristics in terms of format and score as the eliminatory partial exam.

Grading system Application of article 5 of R.D. 1125/2003 of September 5

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

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

MD1 Expository and participatory classes

MD4 Problem-based learning

MD5 Exemplification and case studies

MD9 Tutorials

4.2. Learning tasks

The learning activities, which are used in this area, include;

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AF6 Individual student work.

He workload and the presence, is as follows:

AF1 Theoretical class: 30 hours. 20 % presence.

AF9 Problems and resolution of cases: 25 hours. 16,66% presence.

AF4 / AF8 Tutorials and Evaluation. 5 hours. 3.33% presence.

AF6 Individual student work.90 hours. 0% presence.

4.3.Syllabus

Module 1. Introduction to Diagnostic Imaging

Unit 1. Concept and Historical Evolution of Diagnostic Techniques for the Image.

Unit 2. Nursing activities in Diagnostic Imaging Techniques.

Unit 3. Radiological preparation of the patient.

Unit 4. Quality control in Radiodiagnosis.

Module 2. Physical Bases of Diagnostic Imaging

Unit 5. Matter.

Unit 6. Electromagnetic radiation.

Unit 7. Ionizing radiation.

Unit 8. Concept and Properties of Rx.

Unit 9. Interactions of Radiation with Matter.

Unit 10. Biological effects of Radiation.

Unit 11. The radiological Image: Digital Image.

Module 3. Radiological Protection

Unit 12. Concept of radiological protection and radiosensitivity.

Unit 13. Radiation protection measures.

Unit 14. Specific protection measures for children and pregnant women.

Module 4. Use of contrasts in Diagnostic Imaging Techniques

Unit. 15. Radiological contrast media.

Unit 16. Contrast media in Ultrasound.

Unit 17. Magnetic Resonance contrast media.

Unit 18. Nursing Care in the administration of contrast media.

Module 5. Nursing Assistance in Diagnostic Imaging Techniques

Unit 19. Conventional radiology.

Unit 20. Contrast radiology.

Unit. 21. Vascular and Interventional Radiology.

Unit. 22. Ultrasound.

Unit. 23. Computerized tomography.

Unit I. 24. Magnetic Resonance.

Unit. 25. Nuclear Medicine.

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Issue solving issues and case studies:

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

4.4. Course planning and calendar

The calendar of the proposed activities for the 2018-19 course is as follows;

September 2018-January 2019.

Key dates

This subject is taught in the first semester of the academic year 2018-19. 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 four-month subjects.

b) Date of the exams:

◦ Partial Exam: Date and time slot to be determined with the students.

◦ Final exams: The dates of the final exams are published in the Academic Organization document of the Nursing Degree of the University of Zaragoza of the 2018-19 academic year.

4.5. Bibliography and recommended resources

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|-----------|---|
| BB | Bontrager, Kenneth L., Lampignano, John P.: Proyecciones radiológicas con correlación anatómica. 8ª ed. Barcelona, Elsevier, 2014. |
| BB | Ecografía básica : utilidad en la inserción de catéteres veno-centrales de acceso periférico. Directores, Enrique Tobajas Asensio, José Antonio Tobajas Asensio. Zaragoza, Enrique Tobajas Asensio, 2010. |
| BB | Fernández Solá, Cayetano: Enfermería radiológica. Almería Universidad de Almería, 2007. |
| BB | Frank, Eugene D., Long, Bruce W., Smith, Barbara J.: Mer de posiciones radiográficas y procedimientos radiológicos. Barcelona, 2010. |
| BB | Medios de contraste en radiología. Coordinadores, Luis Martí-Bonmatí, Yolanda Pallardó Calatayud. Madrid, Editor Médica Panamericana, 2008. |

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- BB** Moller, Torsten B., Reif, Emil: Imágenes normales de TC y reimp. Madrid, Editorial Médica Panamericana, 2010.
- BB** Möller, Torsten B.. Reif, Emil: Atlas de bolsillo de anatomía radiográfica. 3ª ed. Madrid, Editorial Médica Panamericana
- BB** Radiología esencial. Directores, J. L. del Cura, S. Pedraza Gayete. Madrid, Editorial Médica Panamericana, 2009.
- BB** Sartor, Klaus, Kress, Bodo: Diagnóstico por la imagen del encéfalo. Madrid, Editorial Médica Panamericana, 2011.
- BB** Técnicas de diagnóstico por la imagen. Editor y coordinador Enrique Tobajas Asensio. Zaragoza, Enrique Tobajas Asensio, 2011.