



FIȘA DISCIPLINEI

1. Date despre program

1.1.	UNIVERSITATEA DE MEDICINĂ ȘI FARMACIE “CAROL DAVILA”
1.2.	FACULTATEA Medicina / DEPARTAMENTUL 8
1.3.	DISCIPLINA RADIOLOGY, MEDICAL IMAGING, INTERVENTIONAL RADIOLOGY, HYBRID IMAGING AND NUCLEAR MEDICINE
1.4.	DOMENIUL DE STUDII MEDICINA
1.5.	CICLUL DE STUDII: LICENȚĂ
1.6.	PROGRAMUL DE STUDII

2. Date despre disciplină

2.1.	Denumirea disciplinei RADIOLOGY, MEDICAL IMAGING, INTERVENTIONAL RADIOLOGY, HYBRID IMAGING AND NUCLEAR MEDICINE						
2.2.	Locatia disciplinei:						
2.3.	Titularul activităților de curs						
2.4.	Titularul activităților de seminar						
2.5. Anul de studiu	IV English Module	2.6. Semestrul	VII+ VIII	2.7. Tipul de evaluare	ES	2.8. Regimul disciplinei	OB

3. Timpul total estimat (ore/an de activitate didactică)

3.1. Nr ore pe săptămână	4 hours	din care :	Curs : 2 hours	Lucrari practice (LP)	2 hours
3.3. Total ore din planul de învățământ	56 hours/semester	din care :	Curs: 28 hours	Lucrari practice (LP)	28 hours
Distributia fondului de timp	14 weeks/semester				
Studiul după manual, suport de curs, bibliografie si notite					
Documentare suplimentară în bibliotecă, pe platformele electronice de specialitate si pe teren					
Pregătire seminarii / laboratoare, teme, referate, portofolio si eseuri					
Tutoriat					
Examinări					
Alte activități					
3.7. Total ore de studiu individual					
3.9. Total ore pe semestru					

3.10. Numărul de credite	3
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4. Preconditii (acolo unde este cazul)

4.1. de curriculum	In concordance with university curriculum - biophysics, sectional / radiological anatomy, physiopathology, morphopathology, medical / surgical semiology
4.2. de competente	Conforms to the university curriculum - radiological anatomy

5. Conditii (acolo unde este cazul)

5.1. de desfășurare a cursului	
5.2. de desfășurare a seminarului / laboratorului	The laboratory workshops are between 16.00-18.00 and 18.00-20.00. Each teacher has a portfolio of X-rays and images of CT, US, MRI (in DICOM format) suggestive of the topics covered during the course.

6. Competente specifice acumulate

Competente profesionale (exprimate prin cunostinte si abilități)	<ul style="list-style-type: none"> • C 1. Acquiring of the radio-imaging semiological notions that allow the detection and characterization of lesion processes by using different radioimaging methods. • C2. Completing a radiological or imaging method with a complementary one to get more diagnostic informations. • C3. Based on the established radioimaging diagnosis, in a multidisciplinary team, the radiologist has the role of proposing in selected / dedicated cases a certain minimally invasive therapeutic procedure under fluoroscopic, ultrasound or CT guiding,/ to perform a biopsy puncture under the eco / CT guide in nonspecific imaging lesions, or to propose to the clinician the follow-up of an indeterminate focal lesion.
Competente transversale (de rol, de dezvoltare profesională, personale)	<ul style="list-style-type: none"> • C1 Identification of the objectives to be achieved, the available resources of the conditions for their completion, the working steps, the working times, the deadlines and the related risks. • C2 Identification of roles and responsibilities in the team, application of relational techniques and work efficiency. • C3 Effective use of information and communication resources and professional training • C4 Continuous updating of the theoretical, practical and pedagogical knowledge and broadening of the professional

	<p>horizon by attending courses, WS, symposiums, congresses in radioimaging.</p> <ul style="list-style-type: none"> • C5 Notions of professional deontology and accountability
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7. Obiectivele disciplinei (reieşind din grila competenţelor specifice acumulate)

7.1. Obiectivul general	The main objective of the Radiology, Medical Imaging and Interventional Radiology Department is to familiarize the student with the specific radio-imaging diagnostic methods of each system (respiratory, digestive tract and liver, biliary tree and pancreas, reno-urinar, osteoarticular, male and female pelvis, breast imaging, neuroradiology).
7.2. Obiective specifice	Presentation of normal radio-anatomy and sectional imaging, of the basic notions regarding the semiology in the standard radiological evaluation, ultrasound, CT and MRI, discuss the steps and the elements of radioimaging semiology used for a correct diagnosis according to the studied pathological entity. In some cases, the fundamental notions of interventional radiology are presented and also in which cases the follow up of a particular/nonspecific lesion is mandatory

8. Content

8.1. Course	Teaching methods	Observations
Introduction to Radio-imaging -1 course (C1)	Power point presentation	Radiological and Imaging Methods: from the simple to the complex one
Radio-imaging of the thorax-3 courses (C2-C4, 1 hour fundamentals in pediatric radiology)	Power point presentation	Anatomy. Techniques. Methods indications. Radio-imaging signs in different types of pathologies. Positive and differential diagnosis in thorax pathology 1 hour fundamentals in pediatric radiology.
Cardiovascular imaging-1 course (C5)	Power point presentation	Anatomy. Techniques. Methods indications. Radio-imaging signs types of pathologies. Positive and differential diagnosis in CV pathology
Digestive tract- 2 courses (C6-C7) Liver, biliary tree and pancreas imaging-1 course (C8)	Power point presentation	Anatomy. Techniques. Methods indications. Radio-imaging signs in different types of pathologies. Positive and differential diagnosis in digestive tract, Liver, biliary tree and pancreas pathologies
Imaging of the reno-urinary tract-2 courses (C9, C10)	Power point presentation	Anatomy. Techniques. Methods indications. Radio-imaging signs in different types of pathologies. Positive and differential diagnosis I reno-urinary tract pathology
Osteoarticular system imaging-2 courses (C11, C12)	Power point presentation	Anatomy. Techniques. Methods indications. Radio-imaging signs in

		different types of pathologies. Positive and differential diagnosis I osteoarticular system pathology
Breast imaging and pelvic imaging -1 course (C13)	Power point presentation	Anatomy. Techniques. Radio-imaging signs in different types of pathologies. Positive and differential diagnosis
Neuroradiology and interventional radiology-1 course (C14)	Power point presentation	Anatomy. Techniques. Methods indications. Radio-imaging signs in different types of pathologies. Positive and differential diagnosis in neuroimaging. Fundamentals in interventional radiology.

Bibliography : all the courses are in power point presentation format stored on CD or memory stick
Imaging for students. Lisle A.D. fourth edition published in 2012 by Hodder Arnold
Radiology review manual. Dahnert W, 2011, Lippincott Williams & Wilkins
Radiologie si Imagistica Medicala –manual pentru incepatori, Ed universitara « Carol Davila », 2009
www.learningradiology.com
www.auntminnie.com
<http://radiopaedia.org>

8.2. Workshops	Teaching methods	Observations
Introduction to radioimaging (WS1)	Guided visit into the Radiology and Imaging Department of Fundeni Clinical Institute	From the theory to the image interpretation
Radio-imaging of the thorax (WS 2, WS 3, WS 4)	Chest X ray + and CT cases in power-point format; pediatric imaging cases	From the theory to the image interpretation
Cardiovascular imaging (WS 5)	Chest X-ray, CT and MRI cases in power-point format	From the theory to the image interpretation
Digestiv tract radioimaging (WS 6, WS 7).Liver, biliary tree and pancreas imaging (WS 8)	Barium enema studies and Barium opacification of the superior digestive tract + imaging cases in power-point format; ultrasound, CT and MRI cases of the liver, BT and pancreas	From the theory to the image interpretation
Radioimaging of the reno-urinary system (WS 9, WS 10)	Bone X ray + CT and MRI cases in power-point format	From the theory to the image interpretation
Radioimaging of the osteoarticular system (WS 11, WS 12)	Standard radiographs+ IVU+ CTU, MRU and imaging cases in power-point format	From the theory to the image interpretation
Cases discussion on pelvic and breast pathology (WS 13); cases discussion in neuroradiology and interventional radiology (WS 14)	Imaging cases in power-point format	From the theory to the image interpretation

Bibliografie All the power point of the course presentations are stored /archived on CD
Imaging for students. Lisle A.D. fourth edition published in 2012 by Hodder Arnold
Radiology review manual. Dahnert W, 2011, Lippincott Williams & Wilkins
www.learningradiology.com
www.auntminnie.com
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9. Coroborarea conținuturilor disciplinei cu așteptările reprezentanților comunității epistemice, asociațiilor profesionale și angajatori reprezentativi din domeniul aferent programului

The content of the discipline is in accordance with the didactic activity of other university centers in the country and abroad.

It seeks to create professional, deductive and ethical discernment.

The main objective of the discipline of radiology and medical imaging is to familiarize the student with the different radio-imaging modalities and principles of radio-imaging diagnostics.

The student participating in the practical courses and WS of radiology and medical imaging will learn the notions of radio-anatomy and sectional imaging, radio-imaging methods with the indications and limits of each method, the technique of interpretation of the current radioimaging exams using the fundamental imaging findings, the main indications of interventional radiology, according with the clinico-biological context and the patient's history.

10. Evaluarea

Tip de activitate	8.1. Criterii de evaluare	8.2. Metode de evaluare	8.3. Ponderea din nota finală
8.4. Curs	Cunoasterea notiunilor predate	Evaluation - theoretical exam using multiple choice questions (1 question-/slide in power-point format): 30 questions with one or more possible answers	60%
	Capacitatea de utilizare adecvata a notiunilor		
8.5. Seminar / laborator	Cunoasterea notiunilor assimilate, abilitati practice	The analysis of 4 "practical" cases (1 case from respiratory system, 1 case from digestive tract, 1 case from reno-urinary system and 1 case from osteoarticular system)	30%
	Insusirea aspectelor prezentate la curs		10% of student activity during the semester (total attendance, active participation in seminars)
Standard minim de performanță		50% for each part of the evaluation	