UNIVERSITÀ DI PISA

DIAGNOSTIC IMAGING

DAVIDE CARAMELLA

Anno accademico	2019/20
CdS	MEDICINE AND SURGERY
Codice	018FF
CFU	6

Moduli	Settore/i	Tipo	Ore	Docente/i
DIAGNOSTICA PER IMMAGINI	MED/36	LEZIONI	60	DAVIDE CARAMELLA MIRCO COSOTTINI PAOLA ANNA ERBA
NEURORADIOLOGIA	MED/37	LEZIONI	12	MIRCO COSOTTINI

Learning outcomes

Knowledge
Integrated Course of Diagnostic Imaging - 4th year - First semester

CORE CURRICULUM

- Physical basis: X-rays
- Technical and methodological bases: conventional radiology
- Technical and methodological bases: ultrasound
- Technical and methodological bases: magnetic resonance
- Technical and methodological bases: nuclear medicine
- Radiation protection of the patient
- Radiographic, ultrasound and magnetic resonance contrast media
- Radiopharmaceuticals and preparations for leaving autologous material of the patient
- Digestive system: multimodal semeiotics and overview of the pathology
- Liver and biliary tract: multimodal semeiotics and overview of the pathology
- Pancreas: multimodal semeiotics and overview of the pathology
- Osteoarticular system: multimodal semeiotics and overview of the pathology
- Vascular system: multimodal semeiotics and overview of the pathology
- Cardio-vascular system: multimodal semeiotics and overview of the pathology
- Urinary system: multimodal semeiotics and overview of the pathology
- CNS: multimodal semeiotics and pathology overview
- Endocrine system: multimodal semeiotics and pathology overview
- Female genital system: multimodal semeiotics and overview of the pathology
- Male genital system: multimodal semeiotics and overview of the pathology

Respiratory system: multimodal semeiotics and pathology overview

Lymphatic system: multimodal semeiotics and overview of lymphedemas

Hematopoietic system: multimodal semeiotics and overview of lymphoma, leukemias, myelomas and other relevant pathologies

Multimodal approach to inflammatory and infectious diseases

Multimodal imaging of neuroendocrine tumors

Breast multimodal imaging

Imaging in the child

Basic principles of radioreceptor / radiometabolic therapy and dosimetry

Radiobiology principles

Radioguided surgery

Introduction to interventional radiology

Assessment criteria of knowledge
The knowledge will be verified through the exam.

Pre-exam with multiple choice tests and oral exam.

Skills
Recognize the basic semeiotics of radiodiagnostic and Nuclear Medicine images.

Identify the main clinical applications.

Assessment criteria of skills

Discussion of one or more radiodiagnostic or Nuclear Medicine images, discussion of clinical cases.

Behaviors
Attention to patient safety and the appropriate use of technologies.

Assessment criteria of behaviors
Specific questions for the oral exam.

Prerequisites
Anatomy
Physics
Pathophysiology
Chemistry and biochemistry

Co-requisites
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Prerequisites for further study
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Teaching methods
Participation (also in interactive mode) to the frontal lectures and study at home

Syllabus
The course material is available on the e-learning platform of the University of Pisa.
Physics and methodology

The production systems of the images. Fuoroscopia; X-rays; computed tomography; magnetic resonance; contrast media in radiodiagnostics;

interventional radiology; detection instruments for radioactive tracers; diagnostic and therapeutic possibilities with radioactive tracers.

Diagnostic imaging of various organs and systems

Physical basis: X-rays
Technical and methodological bases: conventional radiology
Technical and methodological bases: ultrasound
Technical and methodological bases: magnetic resonance
Technical and methodological bases: nuclear medicine
Radiation protection of the patient
Radiographic, ultrasound and magnetic resonance contrast media
Radiopharmaceuticals and preparations for leaving autologous material of the patient
Digestive system: multimodal semeiotics and overview of the pathology
Liver and biliary tract: multimodal semeiotics and overview of the pathology
Pancreas: multimodal semeiotics and overview of the pathology
Osteoarticular system: multimodal semeiotics and overview of the pathology
Vascular system: multimodal semeiotics and overview of the pathology
Cardio-vascular system: multimodal semeiotics and overview of the pathology
Urinary system: multimodal semeiotics and overview of the pathology
CNS: multimodal semeiotics and pathology overview
Endocrine system: multimodal semeiotics and pathology overview
Female genital system: multimodal semeiotics and overview of the pathology
Male genital system: multimodal semeiotics and overview of the pathology
Respiratory system: multimodal semeiotics and pathology overview
Lymphatic system: multimodal semeiotics and overview of lymphedemas
Hematopoietic system: multimodal semeiotics and overview of lymphoma, leukemias, myelomas and other relevant pathologies
Multimodal approach to inflammatory and infectious diseases
Multimodal imaging of neuroendocrine tumors
Breast multimodal imaging
Imaging in the child
Basic principles of radioreceptor / radiometabolic therapy and dosimetry
Radiobiology principles
Radioguided surgery
Introduction to interventional radiology

For Neuroradiology:
Introduction to neuroradiological methods
Head and spinal trauma
Ischemic cerebrovascular pathology
Cerebrovascular hemorrhagic pathology
Brain neoplasms
Non-traumatic medullary and spinal pathology
Interventional Neuroradiology

Bibliography
Additional teaching material is available on the e-learning platform of the University of Pisa as well

Non-attending students info
Attendance is mandatory

Assessment methods
Multiple choice test, oral examination

Work placement
After graduation, students will be able to work in private practice as well as in public hospitals

Class web page
http://www.unipi/018FF_on_Microsoft_Teams/

Additional web pages
E-learing platform and www.eurorad.org

Notes

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I am always available via email <davide.caramella@unipi.it> also to provide translation of the parts of this program that are still in Italian

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