Radiology diagnosting imaging and radiotherapy techniques

INTEGRATED COURSE: *DIAGNOSTIC IMAGING TECHNIQUES I*
SSD: MED/36, MED/50
CFU: 8
Coordinator: PROF. FEDERICO SANTARELLI
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MODULE: Human Anatomy
SSD: MED/36
CFU: 2
Professor: Renato Argirò   email: renato.argirò@unicamillus.org

MODULE: Medical Sciences and techniques I
SSD: MED/50
CFU: 6
Professor: Federico Santarelli   e-mail: federico.santarelli@unicamillus.org
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PREREQUISITES
Minimum basic knowledge of human anatomy, general and atomic physics is required.

LEARNING OBJECTIVES
The course aims to provide students with the specific skills to correctly use radiological equipment. The teaching, integrated with the study of radiographic techniques, is fundamental for the development of specific professional skills.

LEARNING OUTCOMES
Kknowledge and understanding
At the end of this course the student will have to know:
• Know the radiodiagnostic equipment and the physical principles of operation
• Describe the main components
• Know the physical principles of operation
• Explain the correct use of the equipment
• know and understand the main technical-practical notions, necessary for conducting traditional and contrast X-ray examinations in compliance with radiation protection regulations, and professional ethics.

Applying knowledge and understanding
At the end of the course, the student will be able to:
• Use the equipment consciously
• Perform radiographic projections independently
• Use the knowledge acquired for the autonomous study of aspects relating to the specific field to which the student will dedicate himself in the professional activity;
• Know and apply the basic principles of the various traditional radiological practices acquired, for carrying out in total autonomy and a correct practical execution necessary for the radiological study.

Communication skills

At the end of the course, the student must know:

• Use specific scientific terminology appropriately.

• be able to apply their knowledge and understanding skills in order to demonstrate a professional approach to work and have adequate skills both to devise and support arguments and to solve problems in their field of study

• Must be able to collaborate in teams in order to perform radiological practices in the field of technical competence, to be supportive and to be able to involve patients during the radiological study.

Making judgements

At the end of the course, the student must know:

   • carry out general evaluations relating to the topics covered.

   • Know the main correctness criteria for a careful evaluation of all radiological practices treated during teaching.

COURSE SYLLABUS

MODULO SCIENZE TECNICHE-MEDICHE

• *trocostratigrafo*
• *remote controlled*
• *thoravision*
• *orthopantomograph*
• *computerized bone mineralogy (m.o.c)*
• *tomograph*
• *mobile radiological systems*
• *systems for detecting digital images, direct and indirect*
• *Senology and the technician of Senology*
• *Physical and biological preconditions for the formation of the mammographic image*
• *History of the mammogram, from analog to digital imaging*
• *Mammographic technique*
• *Artifacts in mammography*
• *Criteria of correctness and self-assessment of the quality of the examination performed*
• *Special screenings*
• *Communication and relationship*
• *Execution of conventional AP and LL projections of skeletal districts*
• *Execution of special projections: (axial, obligue, tangential, etc.)*
• *Execution of tests in clino or orthostatism.*
• *Radiation protection of current regulations and technical applications.*
• *Execution of contrast tests:*
• *RX Esophagus*
• *Stomach RX*
• *RX Digestive system*
• *RX Matt Enema*
• *RX Urography*
• *Cystouretrography RX*
• *Hysterosalpingography RX*
• *RX Defecography*

MODULO DIAGNOSTICA PER IMMAGINI

Basic principles of different projections and traditional radiological techniques. X-ray imaging.

COURSE STRUCTURE

The module of DIAGNOSTIC TECHNIQUES FOR IMAGES I is organized in lectures (80 hours) and theoretical and practical exercises. Lessons are held by projecting illustrative images (Power-Point) and through the use of paper material provided by the teacher

COURSE GRADE DETERMINATION
MODULO SCIENZE TECNICHE-MEDICHE

The teaching module is integrated with another discipline always pertaining to radiological sciences. The student can take the test of applied medical technical sciences in a single session or in different sessions of the current academic year.
The test consists of a compulsory written test and an optional oral test. The written and oral tests are aimed at evaluating both the theoretical knowledge and the student's ability to solve problems.

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OPTIONAL ACTIVITIES

Students will have the opportunity to carry out theoretical / practical exercises and participate in seminars. The teachers will provide constant support during and after the lessons

TESTI CONSIGLIATI E BIBLIOGRAFIA/READING MATERIALS

MODULO SCIENZE TECNICHE-MEDICHE

- Diagnostic Radiology Physics: A Handbook for Teachers and Students. D.R. Dance, S. Christofides, A.D.A. Maidment, I.D. McLean, K.H. Ng. Technical Editors
- Hogg, Kelly, Mercer (Eds.). "Digital mammography. A holistic approach". Springer
- CLARK'S Positioning in RadiographyA.Stewart Whitley, Charles Sloane, Graham Hoadley, Adrian D.Moore, Chrissie W.Alsop. HODDER ARNOLD.
- THE WHO MANUAL of DIAGNOSTIC IMAGING. Radiographic Anatomy, interpretation of the Muscoloskeletal System. A.Mark Davies, Holger pettersson

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