

COURSE OUTLINE: DIAGNOSTIC IMAGING

1. GENERAL

SCHOOL	SCHOOL OF HEALTH SCIENCES		
ACADEMIC INIT	PHYSIOTHERAPY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	PHOMS9	SEMESTER	SPRING
COURSE TITLE	DIAGNOSTIC IMAGING		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
LECTURES	2	3	
		3	
COURSE TYPE	OM <i>Compulsory Modules of General Knowledge Background (CMGKB), Compulsory Modules of Specific Knowledge Background (CMSKB), Compulsory Specialisation Modules (CSM), Optional Modules (OM)</i>		
PREREQUISITE COURSES:	-		
LANGUAGE OF INSTRUCTION & EXAMINATIONS:	GREEK		
IS THE COURSE OFFED TO ERASMUS STUDENTS?	NO		
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/PHYSIO_U_126/		

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

Learning Outcomes:

The student, upon completion of the course, will be able to:

1. The fundamental principles on which radiophysics and imaging examination methods are based.
2. The various types of imaging examinations and the purpose of their application.
3. Normal radiographic anatomy & diagnostic imaging of different systems of the human body.
4. Various pathological conditions that cause morphological & functional alterations, which can be detected through classical & modern imaging examinations.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making

Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility

Working independently

Teamwork

Working in an international environment

Working in an interdisciplinary environment

Production of new research ideas

and sensitivity to gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

Others ...

- Search, analysis, and synthesis of data and information using the necessary technologies.
- Decision-making.
- Exercise of critical and self-critical thinking.
- Independent work.
- Teamwork.
- Work in an interdisciplinary environment.
- Project design and management.
- Production of new research ideas.
- Promotion of free, creative, and inductive thinking.

3. SYLLABUS

Unit 1: Introduction to Diagnostic Imaging

- Historical review, discovery of Roentgen (X) rays.
- Radiography - Fluoroscopy - Contrast media, etc.

Unit 2: Basic Principles of Modern Imaging Methods

- X-ray Imaging.
- Digital Image - Digital Systems & Image Post-Processing.
- Computed Tomography (CT).
- Magnetic Resonance Imaging (MRI).
- Ultrasonography.
- Contrast Media in Radiological Imaging.

Unit 3: Characterization of Radiographs

- Characteristics depending on the direction of X-rays.
- Anatomical-radiological characteristics of joints.
- Radiographic anatomy of the spine & joints of the upper and lower limbs.

Unit 4: Normal, Pathological & Traumatic Radiographic Anatomy & Imaging of the Skull and Spine

- Imaging methods for examining the skull & spine in:
 - Fractures.
 - Dislocations.
 - Bone tumors.
 - Imaging methods for diseases and injuries of the intervertebral disc & spinal canal.

Unit 5: Normal, Pathological & Traumatic Radiographic Anatomy & Imaging of the Scapula and Upper Limb

- Imaging methods for examining the scapula and upper limb in:
 - Diseases.
 - Fractures.
 - Dislocations.
 - Bone tumors.

Unit 6: Normal, Pathological & Traumatic Radiographic Anatomy & Imaging of the Pelvis, Hips, and Femur

- Imaging methods for examining the pelvis, hips, and femur in:
 - Diseases.
 - Fractures.
 - Dislocations.
 - Bone tumors.

Unit 7: Normal, Pathological & Traumatic Radiographic Anatomy & Imaging of the Knee

- Imaging methods for examining the tibiofemoral & patellofemoral joints in:
 - Diseases.

- Fractures.
- Dislocations.
- Bone tumors.

Unit 8: Normal, Pathological & Traumatic Radiographic Anatomy & Imaging of the Tibia, Fibula, Ankle, and Foot

- Imaging methods for examining the tibia, fibula, ankle, and foot in:
 - Diseases.
 - Fractures.
 - Dislocations.
 - Bone tumors.

Unit 9: Arteriographies and Phlebographies

- Arteriographies & phlebographies of the skeletal system.

Unit 10: Normal, Pathological & Traumatic Radiographic Anatomy & Imaging of the Thorax

- Lung diseases.
- Pleura.
- Mediastinum.

Unit 11: Normal, Pathological & Traumatic Radiographic Anatomy & Imaging of the Cardiovascular System

- Heart diseases.
- Vascular diseases.
- Examination methods.

Unit 12: Digestive and Urogenital System. Interventional Radiology

- Imaging methods for examining the digestive & urogenital systems.

Unit 13: Interventional Radiology

- The role and purpose of interventional radiology.

Unit 14: Final Student Assessment - Examination

- Overall student performance is assessed according to the institution's academic regulations and the evaluation criteria of the course described below.

4. TEACHING and LEARNING METHODS – EVALUATION

<p style="text-align: center;">DELIVERY</p> <p style="text-align: center;"><i>Face-to-face, Distance learning, etc.</i></p>	<p>Face-to-Face Instruction</p> <p>The teaching of the course includes a variety of instructional approaches and tools, such as:</p> <ul style="list-style-type: none"> ● Lectures and presentations using a whiteboard, overhead projector, fixed projection system, video, and television. ● Classroom discussions and feedback. 																
<p style="text-align: center;">USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY</p> <p style="text-align: center;"><i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use of ICT in Teaching, Laboratory Training, and Student Communication</p> <ul style="list-style-type: none"> ● Utilization of Information and Communication Technologies (ICT), including the Internet, multimedia, electronic discussions via an asynchronous learning platform, and email. 																
<p style="text-align: center;">TEACHING METHODS</p> <p style="text-align: center;"><i>The manner and methods of teaching are described in detail.</i></p> <p style="text-align: center;"><i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic</i></p>		<table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Activity</th> <th style="text-align: center;">Semester workload</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Lectures</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">Independent Study</td> <td style="text-align: center;">45</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;">Couse Total</td> <td style="text-align: center;">75</td> </tr> </tbody> </table>	Activity	Semester workload	Lectures	30	Independent Study	45							Couse Total	75	
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<p>creativity, etc.</p> <p>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS.</p>	
<p style="text-align: center;">STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Student Performance Assessment</p> <p>The assessment criteria for student performance are available on the course website and are specified as follows:</p> <p>The final evaluation of the course is carried out either through a written assessment (or oral, in the presence of two instructors) or a combination of an intermediate evaluation (progress assessment). The final assessment takes place at the end of the academic semester and covers all the material that has been taught. The student is required to answer questions (either in development form or multiple-choice) that cover the different teaching units of the course equally, and additionally, there will be questions that require critical thinking. The final grade is from 0-10 and is determined by the final exam or is weighted in combination with the intermediate evaluation-progression based on a predefined weighting factor set at the beginning of the semester.</p> <p>The evaluation of the students' performance is carried out according to the institution's regulations. The final grade is recorded on a 10-point scale (0-10), with a minimum passing grade of 5.</p>

5. ATTACHED BIBLIOGRAPHY

<p>GREEK</p> <ol style="list-style-type: none"> 1. Αργυροπούλου, Γουλιάμος, Δρεβελέγκας, Καραντάνας, Κελέκης, Πρασόπουλος, Σιαμπλής, Τσιαμπούλας, Φεζουλίδης. <i>Κλινική Ακτινολογία, Εκδόσεις Κωνσταντάρας, 2012.</i> 2. Sutton D. <i>Ακτινολογία και Απεικόνιση, Εκδόσεις BROKEN HILL PUBLISHERS LTD, 2005.</i> 3. Dafner R. <i>Αρχές κλινικής ακτινολογίας, Εκδόσεις Ζεβελεκάκη, 1994.</i> 4. Μπενάκης Β. <i>Εισαγωγή στην ακτινοδιαγνωστική, Εκδόσεις Αθανασόπουλος-Παπαδάμης, 1986.</i> <p>ENGLISH</p> <ol style="list-style-type: none"> 1. Lisle D. <i>Imaging for students, 4th edition, Hodder Arnold-Hachette, London, 2012.</i> 2. Malone, Hazle & Grey. <i>Imaging in rehabilitation, McGraw-Hill, New York, 2008.</i> 3. Greenspan A. <i>Orthopaedic Radiology, Lippincott, Philadelphia, 1990.</i> 4. Wicke Lothar. <i>Atlas of Radiologic Anatomy, Urban and Schwarzenberg, Baltimore, 1987.</i> <p><i>Scientific Journals:</i></p> <ol style="list-style-type: none"> 1. Clinical Radiology https://www.clinicalradiologyonline.net 2. Skeletal Radiology https://link.springer.com/journal/256
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