Course Title	**Diagnostic Imaging**				
Course Code	PHYS308				
Course Type	Compulsory				
Level	Bachelor (Level 1)				
Year / Semester	3d/ Spring				
Instructor's Name	Dr Yiannis Roussakis				
ECTS	3	**Lectures / week**	2	**Laboratories/week**	
Course Purpose	The aim of the course is to provide students with knowledge about modern means and methods of diagnostic imaging as well as to practice students to recognize pathological anatomy in practical examples in all diagnostic methods and in various areas of the body. In addition, he intends to emphasize the radiological imaging of the neuromusculoskeletal and cardiorespiratory system and the recognition of its pathology, to teach students to correlate the radiological with the clinical picture, to distinguish between the imaging of pathology and physiological alterations due to age, and to use this knowledge for clinical reasoning.				
Learning Outcomes	Upon completion of the theoretical part of the course, students are expected to be able to: • Understand the basic principles of diagnostic imaging • Describe modern methods and means of diagnostic imaging • Recognize the normal radioanatomy of the different parts of the skeletal, chest and lungs • Distinguish the pathological radioanatomy of the different parts of the skeletal, chest and lungs • Know the basic principles of diagnostics imaging of the cardiovascular and respiratory systems • Identify expected alterations in the skeleton and joints derived from age and use and distinguish them from pathological lesions • Correlate the imaging and clinical picture of the patient in order to treat the patient and not the X-ray				
Prerequisites	None	Co-requisites	None		
Course Content	• Introduction and general principles of diagnostic imaging • Radiodiagnostic skeletal system and clinical practice. • Basic methods and advantages of each method Simple X-ray.				

	• Normal imaging of SS, pelvis, chest and upper and lower extremities Simple X-ray. • Degenerative and pathological lesions in SS, pelvis, chest and upper and lower extremities • Diagnostic imaging of fractures • Other diagnostic imaging techniques (CT, MRI, fMRI, etc.). • Utility and applications MRI, Advantages over CT, T1/T2 sequences MRI SS, shoulder, knee, hip, ankle • Diagnostic ultrasonography of the musculoskeletal system • Bone scintigraphy • Diagnostic imaging of sports injury • Diagnostic imaging of respiratory and cardiovascular system
Teaching Methodology	The course is delivered to the students through lectures, using computer-based presentations programmes. Case Studies, Discussion, Questions / Answers are also used depending on the content of the lecture. Lecture notes and presentations are available online for use by students in combination with textbooks. Relevant material published in international scientific journals is also used to follow the latest developments related to the subject of the course.
Bibliography	**<u>Textbooks</u>** Corne, J., Kumaran, M. (2017) - Chest X-ray: Easy Reading (4th ed.), PARISIANOU S.A. Fleckenstein, P., LECKENSTEIN, Jensen, J., (2016) - Anatomy of Diagnostic Imaging (3rd edition), PARISIANOU S.A. Ronald L. Eisenberg MD (2010) - Clinical Imaging: An Atlas of Differential Diagnosis (Clinical Imaging: An Atlas of Differential Diagnosis (Eisenberg)) Fifth Edition, Lippincott Williams& Wilkins W. Richard Webb MD, Charles B. Higgins (2010) - Thoracic Imaging: Pulmonary and Cardiovascular Radiology, Lippincott Williams & Wilkins
Assessment	**<u>Continuous Assessment (50%):</u>** The assessment may include any combination of the following: • **Written and/or oral**, and it consists of multiple – choice, short answer, open ended questions and/or essay questions, that align with the learning outcomes, in order to assess the theoretical knowledge gained. The questions ensure that students will demonstrate a deep understanding of the subject matter and apply their knowledge to solve problems or analyse scenarios. • **Assignments and projects** provide opportunities for students to apply their theoretical knowledge in practical ways. The assignments are designed in a way that require critical thinking, research, analysis, and synthesis of information. Projects can be individual, self directed learning or group-based and should align with the learning outcomes. Students are evaluated on the quality of their work, the depth of understanding displayed, and

	their ability to effectively communicate their ideas. Assignments and projects may be individual or group work. • Use of **case studies or problem-solving exercises** to assess how students can apply theoretical knowledge to real-life situations. Students are presented with scenarios that require analysis, critical thinking, and the application of theoretical concepts and they are assessed based on their ability to perform verbal presentations, viva voce examinations, identify and evaluate relevant information, propose solutions, and provide justifications for their choices. • **Online quizzes or interactive assessments**: Online quizzes or interactive assessments, reflective writing can be used through the Moodle platform, to create quizzes with various question formats. These assessments can be self-paced or timed, and immediate feedback can be provided to students. • **Classroom discussions and debates**: Students engage in classroom discussions and debates to assess their theoretical knowledge. Active participation is encouraged to hone their critical thinking skills by posing open-ended questions and facilitating dialogue. • **Peer and self-assessment**: Students are assigned to review and provide feedback on each other's work, encouraging them to critically evaluate their peers' understanding and provide constructive suggestions. **Final Exam (50%):** comprehensive final exam, to assess students' overall theoretical knowledge. These assessment covers a broader range of topics and learning outcomes from the entire program of study, to gauge the students' understanding and integration of knowledge across different areas.
Language	Greek / English