




3.00 credits

25.0 h + 5.0 h

Q2

Teacher(s)	Jamar François ;Lhommel Renaud ;Michoux Nicolas (coordinator) ;Pasoglou Vassiliki ;
Language :	French
Place of the course	Bruxelles Woluwe
Main themes	Content: this annual course focuses on the techniques and use of different imaging methods in Radiology and Nuclear Medicine. Method: virtual course based on the book "Guide to Medical Imaging and Radiotherapy Technologies (Ed. Masson, JP Dillenseger, E. Moerschel)" and supplemented by documents available on the website <a href="http://uclimaging.be/ecampus/option_01.htm">http://uclimaging.be/ecampus/option_01.htm</a> (RDGN3120).
Learning outcomes	<b>At the end of this learning unit, the student is able to :</b>  1 To offer to students in radiology the specialized knowledge about the methods of medical imaging. The technology and the cost-effectiveness of each radiological method will be underscored.
Evaluation methods	Physicists : critical analysis of a scientific paper (50%) + MCQ test (50%) Physicians & MACCS : MCQ test The exam takes place in June and 2nd session in September.
Teaching methods	Web-based course based on the reading of the book "Guide des Technologies de l'Imagerie Médicale et de la Radiothérapie" (Elsevier Masson, 3rd edition, 2024: <a href="https://www.elsevier-masson.fr/guide-des-technologies-de-limagerie-medicale-et-de-la-radiotherapie-9782294783173.html">https://www.elsevier-masson.fr/guide-des-technologies-de-limagerie-medicale-et-de-la-radiotherapie-9782294783173.html</a> ) as well as on the reading of supplementary documents about medical imaging (more about the physics, the new imaging sequences and the artifacts), written by the teachers. These supplementary files (in powerpoint or pdf format) may be downloaded from the MOODLE web-site of the UCL at the following address: <a href="https://moodle.uclouvain.be/course/view.php?id=4595">https://moodle.uclouvain.be/course/view.php?id=4595</a>
Content	Principles (Physics & Technology) in medical imaging - from image digitization to image post-processing - radiology of projection - technology and practical use of conventional Xrays (Computed Tomography), and nuclear medicine (including Positron Emission Tomography). - Characteristics of contrast agents (used in Nuclear Medicine, Magnetic Resonance Imaging and Ultrasound imaging) - Accidents related to radiological procedures - Quality control in medical imaging - Information technology - Relations with patients and staff. Requirement ! Physics students must have validated the course LGBIO2050 before attending the course WRDGN3120.
Inline resources	<a href="https://moodle.uclouvain.be/course/view.php?id=4595">https://moodle.uclouvain.be/course/view.php?id=4595</a>
Bibliography	Guide des technologies de l'imagerie médicale et de la Radiothérapie (Ed. Masson, JP Dillenseger, 3ed, 2024: <a href="https://www.elsevier-masson.fr/guide-des-technologies-de-limagerie-medicale-et-de-la-radiotherapie-9782294783173.html">https://www.elsevier-masson.fr/guide-des-technologies-de-limagerie-medicale-et-de-la-radiotherapie-9782294783173.html</a> ).
Other infos	Examination consisting in multiple choice questions
Faculty or entity in charge	MED

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Certificat de compétence pour l'utilisation des rayons X en diagnostic médical	<a href="#">RXU2CE</a>	3		
Advanced Master in Nuclear Medicine	<a href="#">MNUC2MC</a>	2		
Certificat universitaire en physique d'hôpital	<a href="#">RPHY9CE</a>	3		
Master [120] in Physics	<a href="#">PHYS2M</a>	3		