



## Radiology

<b>1. IMPRINT</b>	
<b>Academic Year</b>	2022/2023
<b>Department</b>	Faculty of Dental Medicine
<b>Field of study</b>	English Dentistry Division
<b>Main scientific discipline</b> (in accord with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)	Medical sciences
<b>Study Profile</b> ( <i>general academic / practical</i> )	General academic
<b>Level of studies</b> ( <i>1<sup>st</sup> level / 2<sup>nd</sup> level / uniform MSc</i> )	Uniform MSc
<b>Form of studies</b>	Full-time program
<b>Type of module / course</b> ( <i>obligatory / non-compulsory</i> )	Obligatory
<b>Form of verification of learning outcomes</b> ( <i>exam / completion</i> )	Completion
<b>Educational Unit / Educational Units</b> ( <i>and address / addresses of unit / units</i> )	I-st Department of Clinical Radiology 02-004 Warsaw, 5 Chałubińskiego Str.; tel. 22 502-10-73, <a href="mailto:radiologia@wum.edu.pl">radiologia@wum.edu.pl</a> ; <a href="http://www.radiologia1.wum.edu.pl">www.radiologia1.wum.edu.pl</a>

<b>Head of Educational Unit / Heads of Educational Units</b>	Prof. Marek Gołębiowski MD, PhD
<b>Course coordinator</b> (title, First Name, Last Name, contact)	Prof. Marek Gołębiowski MD, PhD; marek.golebiowski@wum.edu.pl 22 502-10-73
<b>Person responsible for syllabus</b> (First name, Last Name and contact for the person to whom any objections concerning syllabus should be reported)	Dorota Piotrowska-Kownacka MD, PhD; marek.golebiowski@wum.edu.pl 22 502-10-73
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## 2. BASIC INFORMATION

<b>Study year and semester</b>	III year , VI semester	<b>Number of ECTS credits</b>	1
<b>FORM OF ACTIVITY</b>		<b>Number of hours</b>	<b>ECTS credits calculation</b>
<b>Contact hours with academic teacher</b>			
Lectures (L)			
Seminars (S)		15	0,5
Exercises (E)			
e-learning (e-L)			
Practical classes (P c)			
professional practice (P P)			
<b>Student's preparation</b>			
preparation for a class and credits		15	0,5

## 3. LEARNING OBJECTIVES

C1	Physics of various types of radiation.
C2	Anatomy and pathophysiology of human body
C3	Clinical pathophysiology

<b>4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING</b> <i>(concerns fields of study regulated by the Regulation of Minister of Science and Higher Education from 26 of July 2019; does not apply to other fields of study)</i>	
Code and number of effect of learning in accordance with standards of learning <i>(in accordance with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)</i>	Effects in time
<b>Knowledge – Graduate knows and understands</b>	
B.W9.	methods of imaging tissues and organs and the principles of operation of diagnostic devices used for this purpose.
B.W10.	principles of operation of ultrasonic devices
F.W18	principles of radiological diagnosis
<b>Skills – skills can:</b>	
A.U1.	interpret anatomical relations illustrated with the basic methods of diagnostic tests in the field of radiology (overview and contrast media radiographs)
E.U5.	identify normal and pathological structures and organs in additional imaging examinations (X-ray, ultrasound, computed tomography –CT)
E.U6.	interpret the results of additional tests and consultations

\* In appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019 „graduate”, not student is mentioned.

<b>5. ADDITIONAL EFFECTS OF LEARNING</b> <i>(non-compulsory)</i>	
Learning effect number	Effects in terms of
<b>Knowledge – Graduate* knows and understands:</b>	
W.1.	-
<b>Skills – Graduate can:</b>	
S1	-

**Social competence – Graduate is ready to:**

K1	-
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**6. CLASSES**

Form of activity	Subject topics and educational contents	Learning outcomes
Seminars	1. Physics of ionizing radiation. Theoretical basis of multimodal imaging. Physics, technics and methodology of each visualization methods. Digital radiography. Teleradiology.	A.U1., B.W9., B.W10., E.U5., E.U6., F.W18
	2. Radiobiology and radiological protection. Role and Value of the Clinical Radiologist: Recognising the Value and Responding to the Challenges. Radiological anatomy of human body (Radiography, US, CT, MRI, Angiography). Screening in radiology.	A.U1., B.W9., B.W10., E.U5., E.U6., F.W18.
	3. Abdominal Radiology. Imaging methods and abdominal organs estimation (parenchymal organs, gastrointestinal tract, retroperitoneal space).	A.U1., B.W9., B.W10., E.U5., E.U6., F.W18.
	4. Facial pathology imaging - technics, methodology, interpretation.	A.U1, B.W9., B.W10., E.U5., E.U6., F.W18.
	5. Chest Imaging. Imaging methods. Pathological basis of chest diseases. Lung and cardiovascular pathologies.	A.U1., B.W9., B.W10., E.U5., E.U6., F.W18.

**7. LITERATURE**

**Obligatory literature:**

1. Brant and Helms' Fundamentals of Diagnostic Radiology, Authors: Klein, Jeffrey, MD, FACR. Emily N.; Brant, William E.; Helms, Clyde A., wyd. Lippincott Williams and Wilkins, 2018

**Supplementary literature:**

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**8. METHODS OF VERIFICATION OF LEARNING OUTCOMES**

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
	In case of absence, the student is obliged to schedule an appointment to pass a missed class.	2.0 (failed) 0-13 points all seminars and final test. 3.0 (satisfactory) 14-15 3.5 (rather good) 16-17 4.0 (good) 18,19,20 4.5 (more than good) 21,22

		5.0 (very good)	23,24
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**9. ADDITIONAL INFORMATION** (e.g., information on a scientific association operating within the unit, information on commuting to university, etc.)

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