



Dental Radiology

1. IMPRINT	
Academic Year	2026/2027
Department	Faculty of Dental Medicine
Field of study	English Dentistry Division
Main scientific discipline	Medical sciences
Study Profile	General academic
Level of studies	Uniform MSc
Form of studies	Full-time program
Type of module / course	Obligatory
Form of verification of learning outcomes	Completion
Educational Unit / Educational Units	Department of Dental and Maxillofacial Radiology Medical University of Warsaw ul. Binieckiego 6, 02-097 Warszawa; Phone No.(22) 116 64 10 e-mail: zrs@wum.edu.pl
Head of Educational Unit / Heads of Educational Units	Prof. Kazimierz Szopiński MD. PhD, kazimierz.szopinski@wum.edu.pl
Course coordinator	Prof. Kazimierz Szopiński MD. PhD, kazimierz.szopinski@wum.edu.pl
Person responsible for syllabus	Lek. dent. Oliwia Kałuża, oliwia.kaluza@wum.edu.pl
Teachers	Prof. dr hab. n. med. Kazimierz Szopiński, kazimierz.szopinski@wum.edu.pl Dr hab. n. med. i n. o zdr., inż. Piotr Regulski, piotr.regulski@wum.edu.pl Dr n. med. i n. o zdr. Anna Pogorzelska, anna.pogorzelska@wum.edu.pl Dr n. med. i n. o zdr. Anna Pantelewicz, anna.pantelewicz@wum.edu.pl Dr n. med. Michał Szałwiński, michal.szalwinski@wum.edu.pl Lek. stom. Stanisław Jąkowski, stanislaw.jalowski@wum.edu.pl Lek. dent. Oliwia Kałuża, oliwia.kaluza@wum.edu.pl Lek. med. Patrycja Bielska, patrycja.bielska@wum.edu.pl

2. BASIC INFORMATION				
Year and semester of studies	IV year, VII and VIII semester		Number of ECTS credits	3.5
FORMS OF CLASSES		Number of hours	ECTS credits calculation	
Contacting hours with academic teacher				
Lecture (L)				
Seminar (S)		8	0.32	
Classes (C)		42	1.68	
e-learning (e-L)				
Practical classes (PC)				
Work placement (WP)				
Unassisted student's work				
Preparation for classes and completions		37.5	1.5	

3. COURSE OBJECTIVES	
O1	Acquiring the ability to maintain radiological documentation in terms of basic intra- and extraoral x-ray examinations.
O2	Acquiring the ability to diagnose and differentiate pathologies affecting the head and neck.
O3	Acquiring knowledge in terms of diagnostics using a panoramic x-ray machine.

4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING	
Code and number of the effect of learning in accordance with standards of learning	Effects in the field of
Knowledge – Graduate* knows and understands:	
A.W1.	structures of the human body: cells, tissues, organs and systems, with particular emphasis on the stomatognathic system

B.W9.	methods of imaging tissues and organs and principles of operation of diagnostic devices used for this purpose
E.W20.	
F.W18.	principles of radiological diagnosis
G.W34.	rules for maintaining, storing and sharing medical records and personal data protection

Skills– Graduate* is able to:

A.U1.	interpret anatomical relationships imaging by basic radiological methods of diagnostic (overview and scans after contrast agent administration)
EU1.	perform differential diagnosis of the most common diseases
E.U3.	plan diagnostic and therapeutic procedures for the most common diseases
E.U5.	identify normal and pathological structures and organs in additional imaging tests (X-ray, ultrasound, computed tomography - CT)
F.U11.	maintain current patient records, issue referrals for tests or specialist dental and general medical treatment
F.U17.	diagnose and provide basic treatment for periodontal disease
F.U18.	diagnose, differentiate and classify malocclusions
F.U23.	report intraoral and panoramic radiographs
G.U26.	keep medical records correctly

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

5. ADDITIONAL EFFECTS OF LEARNING

Number of effect of learning	Effects in the fields of:
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Knowledge – Graduate knows and understands:

W1	
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Skills– Graduate is able to:

U1	
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Social Competencies – Graduate is ready for:

K1	
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6. CLASSES

Form of class	Class contents	Effects of Learning
Seminars	S1 – Anatomy on panoramic x-rays. Radiological diagnosis - caries, periodontal and periapical inflammation - differential diagnosis. S2 – Radiological symptomatology of periapical inflammation. PAI index. Differential diagnosis with odontogenic periapical inflammatory cysts. S3 – Radiological diagnosis of dental trauma, alveolar process and craniofacial bony structures. X-ray signs of trauma.	F.W18., G.W34., E.U1, E.U3., F.U18.,F.U23. E.W20., F.W18., E.U1., E.U3., F.U11 A.W1., F.W18. A.U1., E.W20., E.U1.,E.U3., E.U5., F.U17., G.U26.
Classes	C1 – Performing panoramic radiograph and radiographic anatomy on panoramic images in virtual reality. C2 – Repetition of dental imaging on a phantom. C3 – Technique of performing a panoramic radiograph. Discussion of the principle of operation of the panoramic machine, the concept of the layer, discussion of the most common technical errors and possibilities for their correction. C4 – Patient examination: technique of performing a panoramic radiograph. Discussion of practical aspects of panoramic radiography, elimination of errors, exercises in the X-ray laboratory. C5 – Anatomy of the facial part of the skull on a panoramic radiograph, shadow analysis, anatomical variations within the teeth and structures of the facial part of the skull (densifications, reduced density – rare trabeculation in cancellous bone). C6 – Dental abnormalities and development – diagnostics on panoramic radiographs and cephalometric images. C7 – Radiological signs of pathology in the context of lesions in mineralized tooth tissues of carious and non-carious origin in primary and permanent teeth, evaluation of marginal periodontium on panoramic images. C8 – Radiological signs of pathology in the periapical periodontium – differentiation. C9 – Radiological diagnostics of injuries in the teeth and the alveolar process of the maxilla and mandible. C10 – Diagnosis of focal lesions in panoramic and intraoral images – differentiation. C11 – Radiological diagnostics and differentiation of injuries in the teeth and the alveolar process of the maxilla and mandible, radiological signs of pathology in the context of lesions in mineralized tooth tissues, marginal periodontium, periapical periodontium, and injuries and focal changes in intraoral and extraoral examinations. C12 – Radiological diagnostics – discussion of cases on panoramic and dental images: radiological signs of pathology in the context of lesions in mineralized tooth tissues, marginal periodontium, periapical periodontium, and injuries.	F.W18., A.U1., E.U1., E.U5., G.U26. F.W18., A.U1., E.U1., E.U5., G.U26. F.W18., G.W34., A.U1., E.U1., E.U5., F.U18., F.U23. F.U23. F.W18., E.U1., F.U23. F.W18., E.U1., F.U23. G.W34., E.U1., C.U11., F.U23. B.W9., F.W18.,G.W34.,A.U1., E.U1., E.U3.,E.U5., F.U11., F.U17, F.U18.,G.U26.,F.U23. B.W9., F.W18., G.W34.,A.U1.,E.U1., E.U3.,E.U5., F.U11., F.U17, F.U18.,G.U26. F.W18.,G.W34.,E.U1.,C.U11., F.U18.,F.U23. F.W18.,A.U1.,E.U1.,E.U5.,F.U23. B.W9., F.W18.,G.W34.,A.U1., E.U1., E.U3.,E.U5., F.U11., F.U17, F.U18.,G.U26.

7. LITERATURE**Obligatory**

1. Whaites E, Drage N. Essentials of Dental Radiography and Radiology. Churchill Livingstone Elsevier 2020
2. White SC, Pharoah MJ. Oral Radiology — principles and interpretation. Elsevier Mosby 2018
3. Langlais RP, Miller C. Exercises in Oral Radiology and Interpretation. Saunders 2016

Supplementary

1. Articles: Journal of Oral Medicine and Oral Surgery, Journal of Stomatology, Contemporary Clinical Dentistry, Dentomaxillofacial Radiology

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
A.W1. B.W9. E.W20. F.W18. G.W34. A.U1. E.U1. E.U3. E.U5. F.U11. F.U17. F.U18. F.U23. G.U26.	Seminar completion requirements – attendance at all seminars is mandatory. Material covered during seminars is required knowledge for the final examination In the case of absence, a medical certificate or justification must be submitted no later than the first class following the end of the absence period. The make-up class date and form is determined by the supervising assistant. An unexcused absence may result in failing to pass the class. Credit for the class is based on attendance, passing a test on imaging techniques (4 open questions) and obtaining a positive grade from the entrance tests. Cover the content of the practical classes conducted on a given day: 8 entrance test: first one from anatomy (20 questions), the remaining 7 containing 10 questions : 5 single-choice (5 points), 5 multiple-choice questions, or short-answer questions (10 points), (20 minutes to complete). Failure to obtain credit for the classes results in the inability to take the final credit test. The course is conducted over two semesters: winter (theoretical, with a final colloquium) and summer (practical). The final colloquium (60 minutes in total) consists of two parts: Part I: Anatomy (landmark identification): a. 10 test questions on anatomy in intraoral and panoramic X-rays (10 points) - X-ray's, diagrams and presentations available on the e-learning platform. Part II: Theoretical and practical questions a. Multiple choice test (all combinations possible - from all incorrect to all correct), 30 questions, 8 distractors. (30 points) b. Multiple choice test 20 questions. One answer scheme for each question: a) all; b) II, c) III, d) I and II, e) I and III. (20 points) Practical part: pass a practical taking of panoramic and intraoral x-rays in the radiology laboratory - correct positioning of the patient for a panoramic	Active participation in seminars Active participation in classes is required, as is obtaining a total of 48 points from all tests (the pass mark is 61%). If a student is unprepared for class, the supervising assistant may. Final exam: — anatomy 90%: failure to pass anatomy results in failure of the entire exam — other questions – passing threshold 61% of points.

	radiograph and intraoral X-rays	
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9. ADDITIONAL INFORMATION

- Classes are held in the teaching rooms and the Technical Laboratory of the Department of Dental and Maxillofacial Radiology at the University Dental Centre of the Medical University of Warsaw (WUM).
- A protective laboratory coat is required for the practical sessions involving patient examination.
- The use of mobile phones and taking photographs of the discussed examinations are strictly prohibited during classes.
- Three instances of tardiness are considered equivalent to one absence.
- One excused absence is permitted (90% attendance required) and must be made up. To justify an absence, the student is required to notify the course coordinator by email or in writing no later than three working days after the class date. A medical certificate must be submitted within seven working days of its issue date.
- The form of making up missed classes must be arranged with the teaching assistant responsible for the class on the day of the student's absence (e.g., attending a session with another group, preparing a presentation, taking an additional duty shift during image reporting, or participating in laboratory duty outside regular class hours).
- An unexcused absence may result in failure to complete the course requirements.
- In the case of an excused absence from a test, the student has the right to take the test on the next scheduled date. An unexcused absence from a test is equivalent to failing that test attempt.
- The colloquium is in the form of a written multiple-choice examination consisting of two parts:
- Part I: Anatomy (landmark identification)
- Part II: Theoretical and practical questions
- If a student receives a failing grade, they are entitled to two resit attempts (second and third examination dates). During the second attempt, the student retakes only the part failed during the first attempt. If the student receives a failing grade on the second attempt, they must retake both parts (Anatomy/landmark identification and theoretical-practical questions) during the third attempt.
- If a student receives a failing grade on the third test attempt, they may apply to the Dean for the participation of an observer appointed by the Student Government. The Dean may grant permission for a board examination if justified concerns regarding the examination process are raised. The result obtained in the board examination is final.
- During the academic year and the summer break, students may further develop their skills in the analysis and interpretation of radiographic images stored in anonymized databases available on computers in the Department's seminar rooms. Students wishing to attend additional training sessions should arrange an appointment with a physician during consultation hours listed on the Department's website.
- The Student Scientific Society "Parallax" operates within the Department of Dental and Maxillofacial Radiology. The faculty advisor is Dr. Anna Pogorzelska, MD, PhD (anna.pogorzelska@wum.edu.pl). Participation in the Society enables students to broaden their knowledge of dental radiology through independent or team-based scientific research projects. Students have the opportunity to present the results of their work at scientific conferences and, in collaboration with the academic staff, prepare scientific publications for peer-reviewed journals. The course is linked to scientific research activities. A detailed description of the research conducted by the Department is available on its website.

Person responsible for teaching: Anna Pantelewicz, DMD, PhD, anna.pantelewicz@wum.edu.pl

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ATTENTION

The final 10 minutes of the last class of the block/semester/year should be allotted for students to fill out the Survey of Evaluation of Classes and Academic Teachers