



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; tel. 22 116 64 10 e-mail: zrs@wum.edu.pl
Head of Educational Unit / Heads of Educational Units	Professor Kazimierz Szopiński MD, PhD
Course coordinator	Professor Kazimierz Szopiński MD, PhD
Person responsible for syllabus	Lek. dent. Oliwia Kałuza, 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

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2. BASIC INFORMATION

Year and semester of studies	3rd year, 6th semester	Number of ECTS credits	2
FORMS OF CLASSES		Number of hours	ECTS credits calculation
Contacting hours with academic teacher			
Lecture (L)			
Seminar (S)		8	0.26
Classes (C)		27	0.9
e-learning (e-L)		10	0.34
Practical classes (PC)			
Work placement (WP)			
Unassisted student's work			
Preparation for classes and completions		15	0.5

3. COURSE OBJECTIVES

O1	To acquire the ability to write radiological reports and documentation of basic intra- and extraoral examinations
O2	To acquire practical skills in differential diagnosis of the head and neck pathologies.
O3	To acquire knowledge in diagnosis using intraoral 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
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Knowledge – Graduate* knows and understands:

A.W3.	structure of the human body in a topographical and functional approach, with particular emphasis on the head and neck.
B.W8.	methods of tissue and organ imaging and the principles of operation of diagnostic equipment for this purpose.
B.W23	basic computer and biostatistical tools used in medicine, including medical databases, spreadsheets, and the basics of computer graphics;
C.W28.	principles of occupational health and safety in dentistry.
E.W5.	basic methods of medical examination and the role of additional examinations in the diagnosis, monitoring, prognosis and prevention of organ and systemic disorders, with particular emphasis on their effects on oral tissues.
E.W22.	principles of diagnostic and therapeutic management of neoplasms of the head and neck.
F.W1.	stages of dentition development, occlusal norms, and deviations from norms, as well as anatomical and functional variability at different stages of an individual's life.
F.W7.	morphology of dental cavities and principles of endodontic treatment.
F.W10.	diagnosis and principles of management of maxillary cysts, inflammatory lesions of bone and soft tissue of the craniofacial region and potentially malignant neoplastic disorders of the oral cavity.
F.W12.	diagnosis and treatment of periodontal and peri-implant diseases and diseases of the oral mucosa and salivary glands.
F.W14.	principles of planning implantoprosthodontic treatment.
F.W17.	differential diagnosis of orofacial pain.
F.W23.	principles of diagnosis, initial treatment, and prevention of functional disorders of the masticatory organ
F.W25.	principles of dental radiological diagnostics, including taking intraoral radiographs and interpretation of radiographs.
G.W27.	legal regulations on medical confidentiality and the principles of keeping, storing, and making available medical records, including e-documentation, as well as personal data protection;

Skills– Graduate* is able to:

A.U1.	interpret anatomical relationships illustrated by basic radiological diagnostic methods (radiological images and images with contrasting agents), with particular emphasis on the head and neck
A.U3.	recognize anatomical features of natural teeth.
B.U3.	assess the harmfulness of the dose of ionising radiation and comply with the principles of radiological protection
C.U5.	analyze the clinical course of diseases in pathological processes.
E.U1.	conduct differential diagnosis of the most common diseases.
E.U3.	plan diagnostic and therapeutic procedures in the case of the most common diseases.

E.U5.	identify normal and pathological structures and organs in additional imaging (X-ray, ultrasound, computed tomography – CT);
F.U1.	take a medical and dental history with a patient or their family by following the principles of professional communication.
F.U6.	perform a dental physical examination of the patient.
F.U8.	maintain medical records, make referrals for specialised dental and general medical examinations or treatment.
F.U9.	order additional examinations and interpret their results and schedule consultations
F.U19.	diagnose and treat basic diseases of mineralised tissues;
F.U20.	diagnose and treat diseases of the pulp and periradicular tissues to a basic extent;
F.U24.	diagnose and provide non-surgical treatment of periodontal and peri-implant diseases
F.U31.	interpret results of radiological examinations used in dental diagnoses.
G.U24.	apply the legal regulations on practicing the profession of dentist
G.U26.	keep medical records

* In appendix to the Regulation of Minister of Science and Higher education from 29th of September 2023 „graduate”, not student is mentioned.

5. ADDITIONAL EFFECTS OF LEARNING (non-compulsory)

Number of effect of learning	Effects in the fields of:
Knowledge – Graduate knows and understands:	
W1	
Skills– Graduate is able to:	
U1	
Social Competencies – Graduate is ready for:	
K1	

6. CLASSES

Form of class	Class contents	Effects of Learning
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Seminars	S1 – Principles of referring for x-ray imaging, principles of keeping, storing and providing access to medical records; intraoral X-rays: types, techniques of taking, indications. Atomic law (Act and Regulations of the Minister of Health). Discussion of intraoral X-ray imaging. S2 - Radiologic symptomatology and differential diagnosis of caries. Radiologic symptomatology of the periodontal disease Discussion of normal imaging and radiographic symptoms of pathology in marginal periodontitis and dental hard tissues. S3 – Radiological diagnosis in endodontic treatment. Parallax (Clark's rule). Radiological symptoms of periapical periodontitis. Discussion of normal imaging and radiographic symptoms of periapical periodontal pathology. Projections to facilitate diagnosis during endodontic treatment. S4 – Symptomatology of disease processes taking place in the dental alveolar processes. Discussion of the normal image and radiological signs of pathology in the area of the alveolar processes.	B.W8., C.W28., E.W5., F.W25., G.W27., B.U3., F.U8., F.U9., G.U24., G.U26. A.W3., F.W25., A.U1., A.U3., C.U5., E.U3., E.U5., F.U31. A.W3., F.W25., A.U1., A.U3., C.U5., E.U3., E.U5., F.U31. A.W3., E.W22., F.W10., F.W17., F.W25., A.U1., A.U3., C.U5., E.U1., E.U3., E.U5., F.U31.
	C1 – Technique of performing intraoral X-ray images – examination on a phantom. Discussion of theoretical and technical aspects of intraoral imaging. C2 – Performing intraoral images and radiographic anatomy of intraoral images in virtual reality. C3 – Identification and radiographic anatomy of intraoral images. Correct radiographic anatomy in intraoral imaging. C4 – Radiological diagnostics of lesions in mineralized tooth tissues. Radiological signs of pathology within the hard tissues of the tooth. C5 – Differential diagnosis of chronic inflammation of periapical periodontal tissues. Radiological signs of pathology within the periapical periodontium. PAI index. Radiological diagnostics in endodontic treatment. C6 – Diagnostics of disease processes occurring in the alveolar process of the maxilla and the alveolar part of the mandible. Focal changes on intraoral images. C7 – Symptomatology of chronic inflammation of marginal periodontal tissues. Radiological signs of pathology within the marginal periodontium. C8 – Patient examination: technique of performing intraoral X-ray images. Discussion of practical aspects of intraoral imaging and performing intraoral images.	B.W8., C.W28., E.W5., F.W25., G.W27., B.U3., F.U8., F.U9., G.U24. B.W8., B.W23., F.W1., F.W7., F.W25., A.U1., A.U3., E.U5. A.W3., F.W1., F.W7., F.W25., A.U1., A.U3., E.U5. F.W23., F.W25., C.U5., E.U1., E.U3., E.U5., F.U19., F.U31. F.W7., F.W14., F.W17., F.W25., C.U5., E.U1., E.U3., E.U5., F.U20., F.U31. E.W22., F.W10., F.W17., F.W23., F.W25., C.U5., E.U1., E.U3., E.U5., F.U31. F.W12., F.W17., F.W25., C.U5., E.U1., E.U3., E.U5., F.U24., F.U31. B.W8., C.W28., F.W25., F.U1., F.U6., F.U9., G.U24.

7. LITERATURE

Obligatory

1. Whaites E., Drage N. Essentials of Dental Radiography and Radiology. Churchill Livingstone Elsevier 2013.
2. White SC., Pharoah MJ. Oral Radiology — principles and interpretation. Elsevier Mosby 2013.
3. Langlais RP., Miller C. Exercises in Oral Radiology and Interpretation Elsevier 2017.

Supplementary

1. Coulthard P, Horner K, Sloan P, Theaker E. Master dentistry, volume one: Oral and maxillofacial surgery, radiology, pathology and oral medicine. Churchill Livingstone Elsevier 2008.
2. 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.W3. B.W7. B.W8. B.W25. C.W28. E.W5. E.W22. F.W1. F.W7. F.W10. F.W12. F.W17. F.W25. G.W27. A.U1. A.U3. B.U3. C.U5. E.U1. E.U3. E.U5. E.U12. F.U1. F.U6. F.U8. F.U9.. F.U19. F.U20. F.U24. F.U31. G.U15. G.U18.	Seminar completion requirements – attendance at all seminars is mandatory. Material covered during seminars is required knowledge for the final examination 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: 5 entrance: first one from anatomy (20 questions); remaining 4 containing 10 questions : 5 single-choice (5 points), 5 multiple-choice questions, or short-answer questions (10 points), (20 minutes to complete). 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. Failure to obtain credit for the classes results in the inability to take the final credit test. The colloquium (for a total of 60 minutes) consists of two parts: Part I: Anatomy (landmark identification): a. 10 test questions on anatomy in intraoral 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, 30 questions, (30 points). Up to 10 questions, one answer pattern, 3-5 distractors, 1 possible answer: a) all; b) II; c) III; d) I and II; e) I and III b. 20 multiple choice test questions; 8 distractors, up to 8 correct answers. A question is credited only when all correct answers have been selected. (20 points) Students are obliged to pass all e-learning radiological courses as an unassisted student's work. Passing classes in the Technical Radiology Lab on the last day of classes and completing the Card Credits during classes or during additional classes duty hours; correct patient positioning for intraoral X-rays, error analysis.	Active participation in seminars Active participation in practical classes, passing a test on imaging techniques (minimum pass threshold: 100%), and obtaining a 60% of the points from all entry tests are required for completion of the course. Lack of preparation for classes may result in their failure to be credited by the instructor. Final exam: – anatomy 90%: failure to pass anatomy results in failure of the entire exam – other questions – passing threshold 61% of points. Passing by sending your answers to the email address provided on the e-learning platform. Failure to send your answers will result in a fail grade for the e-learning course.

1. ADDITIONAL INFORMATION

1. 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).
2. A protective laboratory coat is required for the practical sessions involving patient examination.
3. The use of mobile phones and taking photographs of the discussed examinations are strictly prohibited during classes.
4. Three instances of tardiness are considered equivalent to one absence.
5. 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.
6. 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).
7. An unexcused absence may result in failure to complete the course requirements.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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