



Orthodontics

1. IMPRINT	
Academic Year	2026/2027
Faculty	Faculty of Medicine and Dentistry
Field of study	English Dentistry Division
Main scientific discipline	Medical science
Study Profile	General academic
Level of studies	Uniform MSc
Form of studies	Stationary
Type of module / course	Obligatory
Form of verification of learning outcomes	Completion
Educational Unit	Department of Orthodontics, Medical University of Warsaw, Binieckiego 6, 02-097 Warsaw, Poland, tel.: 22 116 64 54, e-mail: ortodoncja@wum.edu.pl

Head of Educational Unit / Heads of Educational Units	Prof. dr hab. n. med. Ewa Czochrowska
Course coordinator	Prof. dr hab. n. med. Ewa Czochrowska ewa.czochrowska@wum.edu.pl
Person responsible for syllabus	Prof. dr hab. n. med. Ewa Czochrowska; email: ewa.czochrowska@wum.edu.pl
Teachers	Prof. dr hab. n. med. Ewa Czochrowska; ewa.czochrowska@wum.edu.pl Dr n.med. Martyna Czerkies; martyna.czerkies@wum.edu.pl Dr hab. n. med. i n. o zdr. Katarzyna Mańka-Malara; katarzyna.manka-malara@wum.edu.pl Lek. dent. Paulina Tokarska; paulina.m.tokarska@gmail.com

2. BASIC INFORMATION

Year and semester of studies	4 th year, 7 th and 8 th semester	Number of ECTS credits	6
FORMS OF CLASSES		Number of hours	ECTS credits calculation
Contacting hours with academic teacher			
Lecture (L)		5 (5 as e-learning)	0,17
Seminar (S)		20	0,67
Exercise (E)		104	3,47
e-learning (e-L): exercises			
Practical classes (PC)			
Work placement (WP)			
Unassisted student's work			
Preparation for classes and completions		51	1,69

3. COURSE OBJECTIVES

C1	To acquire the knowledge in the field of malocclusion diagnostics
C2	To acquire the knowledge in the field of diagnostic methods in orthodontics
C3	To acquire the knowledge in the field of etiology and epidemiology of abnormalities of the masticatory organ

C4	To acquire the knowledge in the field of orthodontic prophylaxis
C5	To acquire the knowledge in the field of orthodontic medical documentation

4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING

Code and number of effects of learning in accordance with standards of learning	Effects in time
Knowledge – Graduate* knows and understands:	
C.W33.	basic clinical procedures of orthodontic prophylaxis
F.W1.	occlusal norms at different stages of individual development and deviations from the norms
F.W2.	principles of prophylactic and therapeutic procedures in diseases of the masticatory system at various stages of development
F.W4.	symptoms, course and management in selected diseases of the oral cavity, head and neck, considering age groups
F.W12.	causes of complications of the stomatognathic system diseases and the principles of management in case of such complications
F.W14.	methods of masticatory apparatus rehabilitation
F.W15.	therapeutic methods of pain reduction and relief and anxiety and stress reduction
F.W17.	principles of construction and application of removable and fixed orthodontic appliances
F.W18.	principles of radiological diagnostics
F.W19.	pathomechanism of oral disease impact on general health
F.W22.	procedure for diseases of masticatory apparatus tissues, injuries to teeth and jaw bones
F.W23.	characteristics of dental care for patients with a general illness and the principles of cooperation with a medical doctor treating the underlying disease
Skills– Graduate* is able to:	
C.U16.	plan basic stages of preventive care in patients with orthodontic needs
F.U1.	conduct a medical interview with the patient or his family
F.U2.	conduct a dental physical examination of the patient
F.U3.	explain the symptoms to the patient, determine the method of treatment confirmed by the patient's informed consent and prognosis

F.U4.	provide the patient or his family with information about poor prognosis
F.U6.	interpret results of additional tests and consultations
F.U7.	determine indications and contraindications for a specific dental procedure
F.U9.	provide treatment in the event of general and local complications during and after dental procedures
F.U11.	keep current patient records, make referrals for dental and general medical examination or treatment
F.U12.	define research issues in the field of dentistry
F.U13.	present selected medical issues verbally or in writing in a manner appropriate to the level of recipients
F.U15.	advise treatment of diseases of stomatognathic system tissues
F.U18.	diagnose, differentiate and classify malocclusions
F.U19.	provide help in case of damage to the orthodontic appliance
F.U20.	make simple orthodontic appliances
F.U21.	carry out treatment to prevent malocclusion during the period of primary and early mixed dentition
F.U23.	describe dental and panoramic radiographs
G.U15.	provide the patient with the necessary information on oral health awareness
G.U20.	work in accordance with the principles of ergonomic work organization
G.U26.	keep medical records

*In Appendices for the Regulations of the Minister of Science and Higher Education from 26th July 2019 is written "a graduate", not "a student"

5. ADDITIONAL EFFECTS OF LEARNING *(non-compulsory)*

Number of effects of learning	Effects of learning i time
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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
Lectures	L1* – Lecture 1 – Diagnosis of malocclusion and dental abnormalities. Definition of malocclusion according to WHO, orthodontic norm, Angle's classification, skeletal classification, Andrew's 6 keys of normal occlusion, Polish diagnostics according to Orlik-Grzybowska, diagnostics according to Ackerman and Proffit, dental abnormalities regarding tooth number, morphology, position and time of eruption. L2* – Lecture 2 - Elements of orthodontics in dental practice. Interdisciplinary treatment - cooperation of an orthodontist with other specialists. Orthodontic norm in deciduous and permanent dentition, transition of dentition, functional examination of masticatory system, indications for treatment in deciduous, mixed and permanent dentition, orthodontic prophylaxis, cooperation of an orthodontist with other specialists. L3* – Lecture 3 - The possibilities of contemporary orthodontic treatment Directions of development related to new diagnostic methods, directions of development related to treatment planning, directions of development related to new methods of treatment, limitations and contraindications of orthodontic treatment, complications of orthodontic treatment. * Lectures will be available on the e-learning platform (5 hours).	F.W1., F.W19., F.U6., F.U18. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23. F.U15., F.U18., F.U21. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., F.U7., F.U9., F.U15., F.U18., F.U21.
Seminars	S1 – Seminar 1 - Diagnosis of malocclusions in the fronto-orbital plane Characteristic of malocclusions in the fronto-orbital plane, distocclusions – distocclusions and retrogenia, mesiocclusions – mesiocclusions and progenia, differentiation between skeletal and functional malocclusions – functional tests. S2 – Seminar 2 – Diagnosis of malocclusions in the sagittal and Frankfurt planes Characteristic of malocclusions in the sagittal plane, crossbites and scissor bites, laterogenia – functional and morphological – differentiation, functional test for malocclusions in the sagittal plane, characteristic of malocclusions in the Frankfurt plane, open and deep bites. S3 – Seminar 3 – Diagnostics of dental abnormalities Tooth crowding, tooth spacing and diastema, classification of dental abnormalities, description of abnormalities in tooth morphology, tooth number, tooth position and time of tooth eruption. S4 – Seminar 4 - Etiopathogenesis of malocclusion. Clinical pathology of the temporomandibular joint. Aetiology and epidemiology of malocclusion, dysfunctions and parafunctions. Aetiology of the temporomandibular joint disorders, principles of the orthodontic and orthopaedic treatment, the most common TMJ pathologies: clinical cases. S5 – Orthodontic prophylaxis. Treatment of malocclusions in preschool children.	F.W1., F.U7., F.U18. F.W1., F.U7., F.U18. F.W1., F.W18., F.U6., F.U7., F.U18., F.U23. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U12., F.U15., F.U18., G.U15. F.W1., F.W2., F.W4., F.W12., F.W14.,

	Principles of orthodontic prophylaxis in infants, toddlers and preschool children, principles of orthodontic prophylaxis in school children, etiopathogenesis of malocclusion and orthodontic treatment in preschool children, types of orthodontic appliances and indications for treatment. S6 – Seminar 6 – Removable orthodontic appliances. Classification of removable appliances, indications and contraindications for removable appliances, mechanical removable appliances – Schwartz's plate, main and additional components, modifications, functional removable appliances – activator, Stockfish, Klammt, Frankel, Balters, Bimler and twin-block appliances, main and additional components, modifications of functional appliances, mechanical-functional appliances, construction bite – principles of performing. S7 – Seminar 7– Orthodontic appliances – fixed and extraoral appliances. Types of fixed appliances, main components of fixed thin- and thick-wire appliances, thick-wire appliances used for maxillary expansion – Hyrax, Haas, NiTi expander, other thick-wire maxillary appliances: Pendex/Pendulum, transpalatal bar, Nance plate, thick-wire mandibular appliances: lip bumper, lingual arch. Types of extraoral appliances, face-mask: types, indications and contraindication for the application, force exerted by elastics, recommendations for the patient, head-gear: types, indications and contraindications for the application, force exerted by elastics, recommendations for the patient. S8 – Seminar 8 – Principles of treatment of malocclusion in school children. General guidelines of indications and contraindications for treatment in school children, principles of treatment of malocclusions in the fronto-orbital plane in school children - distocclusions and mesiocclusions, principles of treatment of malocclusions in sagittal plane in school children - crossbites and scissor bites, laterogenia, principles of the treatment of malocclusions in Frankfort plane in school children - open bites and deep bites. S9 – Seminar 9 – Orthodontic indications for tooth extraction in deciduous and permanent dentition. Consequences of extractions in the deciduous and permanent dentition, indications and contraindications for extractions of deciduous and permanent teeth. S10 – Seminar 10 – Adult treatment General indications for orthodontic treatment in adults, contraindications for orthodontic treatment in adults, principles of adult treatment, orthodontic treatment of patients with periodontitis.	F.W17., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21., G.U15. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20., F.U21., C.W33. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W22., C.U16., F.U1., F.U4., F.U6., F.U7., F.U15., F.U18., F.U21., C.W33. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23. F.U3., F.U6., F.U7., F.U9., F.U15., F.U18., G.U15.
Exercises	Exercises – 1st semester C1. Introduction to orthodontic diagnosis. Knowing normal occlusion in deciduous dentition.	F.W1., F.U6., F.U7., F.U18., G.U15.

	General information, Angle's classification, canine classification, Baum's classification, skeletal classification, overjet and overbite, Andrew's 6 keys of normal occlusion, facial symmetry and proportion, analysis of profile, biometric field, diagnosis of malocclusion according to Orlik-Grzybowska. Analysis of diagnostic models in the deciduous dentition – measurements and indices. C2. Knowing normal occlusion in mixed dentition. Analysis of diagnostic models in mixed dentition – measurements and indices. C3. Knowing normal occlusion in permanent dentition. Analysis of diagnostic models in permanent dentition – measurements and indices. C4. Recognition of malocclusions in the frontal-orbital plane – evaluation of development of dental arches, measurements on diagnostic models. C5. Recognition of malocclusions in the sagittal plane – evaluation of development of dental arches – measurements on diagnostic models. C6. Recognition of malocclusions in the Frankfurt plane – evaluation of development of dental arches – measurements on diagnostic models. C7. Recognition of dental anomalies– evaluation of development of dental arches – measurements on diagnostic models. C8. Analysis of panoramic radiographs regarding recognition of dental anomalies in tooth morphology, number, position and time of eruption. C9. Cephalometric radiographs used for diagnosis and orthodontic treatment. History of cephalometry, indications for a cephalometric examination, cephalometric analysis – according to Steiner, Schwartz, Segner and Hasund, Jarabak and McNamara, computer analysis. Cephalometric radiographs used for diagnosis and orthodontic treatment. C10. Examination of face. Orthodontic photography – principles. C11. Functional examination. Rehabilitation of speech, swallowing and breathing. Elements of the functional examination, examination of masticatory muscles, examination of the TMJ function, reeducation of the stomatognathic system, myotherapy, rehabilitation of speech, breathing and swallowing. C12. Principles of orthodontic treatment including the type of malocclusion and patient's age.	F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U6., F.U18., G.U15. F.W1., F.U2., F.U3., F.U6., F.U7., F.U18. C.W33., F.W1., F.W2., F.W12., F.W14., F.W19., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U15., F.U21., G.U15. C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U13., F.U15., F.U18.,
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		F.U20., F.U21., F.U23., G.U20.
	C13. Orthodontic materials.	F.W15., F.W17., F.U1., F.U6., F.U7., F.U15., F.U20.
	C14. Colloquium. The colloquium comprises knowledge from lectures, seminars and excersises	C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., F.W15., F.W17., F.W18., F.W19., F.W22., F.W23. C.U16., F.U1, F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U11., F.U12., F.U13., F.U15., F.U18., F.U19., F.U20., F.U21., F.U23., G.U15., G.U20., G.U26.
	C15. Discussion on Colloquium and its correction.	
	Exercises – 2nd semester	
	C1. Dentofacial deformities - primary and secondary palate cleft, ectodermal dysplasia.	F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., F.U1., F.U3., F.U4., F.U7., F.U9., F.U15., F.U18., F.U23., G.U15.
	C2. Dentofacial deformities - Down syndrome, cleidocranial dysostosis, Goldenhar syndrome, Apert syndrome, Pierre-Robin syndrome, Crouzon syndrome.	F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., F.W23., F.U1., F.U3., F.U4., F.U7., F.U9., F.U15., F.U18., F.U23., G.U15.
	C3. Orthodontic appliances – introduction, instructional films.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
	C4. Removable orthodontic appliances – part 1: types, construction, mechanical appliances used in early treatment, mechanical appliances – Schwartz's plate.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
	C5. Removable orthodontic appliances – part 2: functional, removable orthodontic appliances: monoblock, Klammt, Stockfish, Frankel and twin-block appliances. Construction bite – principles and management, planning of orthodontic appliances, schemas.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.
	C6. Orthodontic appliances: extraoral (head-gear, face mask), fixed thick-wire appliances: (Pendex, lip bumper, transpalatal arch, lingual arch, quad-helix, Hyrax).	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20.

	C7. Fixed thin-wire orthodontic appliances – elements of fixed appliances, instruments used for fixed appliances, phases of treatment. C8. Learning how to fill-in patients' records – electronic documentation, paper documentation, informed consent. C9. REPETITION C10. Evaluation of practical skills in orthodontic diagnosis (diagnostic models, photographs, radiological examination, orthodontic appliances) – so called "PINS" part 1. C11. Evaluation of practical skills in orthodontic diagnosis (diagnostic models, photographs, radiological examination, orthodontic appliances) – so called "PINS" part 2. C12. Clinical exercises. Anamnesis and clinical examination, diagnosis of malocclusions. C13. Clinical exercises. Anamnesis and clinical examination, diagnosis of malocclusions.	F.W1., F.W2., F.W4., F.W14., F.W17., F.U7., F.U15., F.U18., F.U19., F.U20. F.W1., F.W2., F.W4., F.W14., F.W15., F.W17., F.W18., F.W19., F.W22., F.W23., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U11., F.U13., F.U15., F.U18., F.U23., G.U26. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U12., F.U15., F.U18., F.U20., F.U21., F.U23. F.W1., F.W2., F.W4., F.W12., F.W14., F.W17., F.W18., F.W19., F.W22., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U12., F.U15., F.U18., F.U19., F.U20., F.U21., F.U23. C.W33., F.W1., F.W12., F.W14., F.W15., F.W18., F.W19., F.W22., F.W23., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U11., F.U12., F.U13., F.U15., F.U18., F.U19., F.U20., F.U21., F.U23., G.U15., G.U20., G.U26. C.W33., F.W1., F.W12., F.W14., F.W15., F.W18., F.W19., F.W22., F.W23., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U11., F.U12., F.U13., F.U15., F.U18., F.U19., F.U20.,
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	C14. Colloquium. C15. Discussion and repetition of colloquium.	F.U21., F.U23., G.U15., G.U20., G.U26. C.W33., F.W1., F.W12., F.W14., F.W15., F.W18., F.W19., F.W22., F.W23., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U11., F.U12., F.U13., F.U15., F.U18., F.U19., F.U20., F.U21., F.U23., G.U15., G.U20., G.U26.
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7. LITERATURE

Obligatory

1. Preclinical orthodontics. Zadurska M & Czochrowska E. Dział Wydawnictw Warszawskiego Uniwersytetu Medycznego 2016.
2. Zarys Ortodoncji Współczesnej pod red. Ireny Karłowskiej. PZWL 2016.
3. Współczesna diagnostyka ortodontyczna pod red. B.Biedziak, I. Szarmach i M. Zadurskiej. Med. Tour Press International 2025.
4. Ortopedia szczękowa. Red. Florentyna Łabiszewska-Jaruzelska. PZWL 1997.
5. Contemporary Orthodontics 5th edition, Tom 1, chapters: 3, 4, 5, 6. Proffit WR, Fields HW, Sarver DM. Elsevier, 2009.
6. Materiały i techniki ortodontyczne pod red. Anny Komorowskiej. Polskie Towarzystwo Ortodontyczne, Lublin 2009.

Supplementary

1. Handbook of orthodontics. 2nd edition. Cobourne M, DiBiase A, Elsevier 2015.
2. Wybrane choroby dziedziczne i wady rozwojowe w praktyce stomatologicznej pod red. Barbary Siemińskiej-Piekarczyk, Małgorzaty Zadurskiej. Med Tour Press International 2008.
3. Orthodontic Forum.

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
C.W33., F.W1., F.W2., F.W4., F.W12., F.W14., F.W15., F.W17., F.W18., F.W19., F.W22., F.W23., C.U16., F.U1., F.U2., F.U3., F.U4., F.U6., F.U7., F.U9., F.U11., F.U12., F.U13., F.U15., F.U18., F.U19., F.U20., F.U21.,	Credit for lectures – attendance obligatory, the knowledge delivered during lectures is required at the final colloquium. Credit for seminars in the 1th semester – attendance and preparation for a seminar is obligatory – oral examination at each of the seminars in case of a justified absence a written test from the content of a seminar is obligatory Credit for exercises is based on the attendance and the active participation, In case of a justified absence, attendance of the exercise at another time is obligatory until the end of the semester. The student is obliged to present at least one presentation on the given topic. The negative score from the exercises results in failure of the subject.	Active participation in all seminars Written colloquium in the 1th semester – 14 multiple-choice questions – each question has max. 2 points – max. 28 points, it is necessary to obtain a minimum of 17 points Positive result of “pins”

F.U23., G.U15., G.U20., G.U26.	in case of a justified absence or a failing at the first attempt of the examination, passing of a written multiple-choice test of 30 questions (30 points) is obligatory – criteria for credit the same as at the first attempt In case of an unsuccessful examination, a committee examination can be organized only by a permission from the head of the department	Written colloquium in the 2 nd semester - 30 multiple-choice questions (30 points), it is necessary to obtain a minimum of 18 points
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9. ADDITIONAL INFORMATION

1. Lectures are posted on e-learning platform and present the latest advances in the field of orthodontics.
2. Attendance at all seminars and exercises is mandatory. In the case of an excused absence, the date and form of credit must be arranged with the teacher.
3. Student reports to classes in protective clothes including changing of shoes and with ID including information: student, year, first name, surname. Bags must be placed on shelves in clinical rooms.
4. Non-compliance to safety regulations at work and oral hygiene is not allowed.
5. Please be on time to attend classes. Delay of more than 15 minutes will be treated as absence.
6. Using of mobile telephones is prohibited during classes and in clinical rooms.
7. The link to the department's website is: <http://ortodoncja.wum.edu.pl>
8. Coordinator of the 4th year EDD is: Prof. dr hab. n. med. Ewa Czochorowska, eczochrowska@wum.edu.pl

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ATTENTION

The final 10 minutes of the last class in the block/semester/year should be allocated to students' Survey of Evaluation of Classes and Academic Teachers