



## VR simulation of clinical conditions

<b>1. IMPRINT</b>	
<b>Academic Year</b>	2023/2024
<b>Department</b>	Faculty of Medicine and Stomatology
<b>Field of study</b>	Medicine and Dentistry
<b>Main scientific discipline</b>	Medical science
<b>Study Profile</b>	General academic
<b>Level of studies</b>	Uniform MSc
<b>Form of studies</b>	Extramural study (paid)
<b>Type of module / course</b>	Obligatory
<b>Form of verification of learning outcomes</b>	Completion
<b>Educational Unit / Educational Units</b>	Department of Dental Propaedeutics and Prophylaxis, 59 Nowogrodzka str., 02-006, Warsaw, phone: 22 625 66 02, e-mail: zpips@wum.edu.pl
<b>Head of Educational Unit / Heads of Educational Units</b>	Leopold Wagner PhD DDS

<b>Course coordinator</b>	Małgorzata Ponto-Wolska PhD DDS, malgorzata.ponto-wolska@wum.edu.pl
<b>Person responsible for syllabus</b>	Małgorzata Ponto-Wolska PhD DDS, malgorzata.ponto-wolska@wum.edu.pl
<b>Teachers</b>	Małgorzata Ponto-Wolska PhD DDS, malgorzata.ponto-wolska@wum.edu.pl Łukasz Zadrozny Phd DDS, lukasz.zadrozny@wum.edu.pl

<b>2. BASIC INFORMATION</b>			
<b>Year and semester of studies</b>	II year, III semester	<b>Number of ECTS credits</b>	1,00
<b>FORMS OF CLASSES</b>		<b>Number of hours</b>	<b>ECTS credits calculation</b>
<b>Contacting hours with academic teacher</b>			
Lecture (L)		-	-
Seminar (S)		5 (5 e-learning forms)	0,17
Discussions (D)		-	-
e-learning (e-L)		-	-
Practical classes (PC)		10	0,33
Work placement (WP)		-	-
<b>Unassisted student's work</b>			
Preparation for classes and completions		15	0,5

<b>3. COURSE OBJECTIVES</b>	
C1	Obtaining the ability to diagnose carious lesions in various clinical situations.
C2	Obtaining the ability to plan and perform basic clinical procedures in the reconstruction of mineralized tissues.
C3	Obtaining the ability to establish an individual prosthetic treatment plan.
C4	Obtaining the ability of the preparation skills for the inlay and the covering crown.

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

<b>Code and number of effect of learning in accordance with standards of learning</b>	Effects in the field of preclinical science and legal and organizational foundations of medicine
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**Knowledge – Graduate\* knows and understands:**

B.W13.	dental office equipment and instruments used in dental procedures
C.W28.	basic clinical procedures for the reconstruction of hard dental tissues and endodontic treatment, as well as methods and technical and laboratory procedures for dental prostheses
F.W4.	symptoms, course and management of specific diseases of the oral cavity, head and neck, taking into account age groups
F.W14.	methods of rehabilitation of the masticatory systems

**Skills– Graduate\* is able to:**

C.U9.	carry out endodontic treatment and reconstruct missing mineralised tissues in the phantom tooth
C.U11.	select restorative, prosthetic and bonding biomaterials based on material properties and clinical conditions
C.U13.	design prosthetic restorations in accordance with the principles of their laboratory implementation
F.U.22.	perform prosthetic rehabilitation in simple clinical and laboratory procedures

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

<b>Number of effect of learning</b>	<b>Effects of learning in time</b>
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**Knowledge – Graduate knows and understands:**

K1	-
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**Skills– Graduate is able to:**

S1	-
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**Social Competencies – Graduate is ready for:**

SC1	-
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<b>6. CLASSES</b>		
<b>Form of class</b>	<b>Class contents</b>	<b>Effects of Learning</b>
S1 – Seminar 1 (e-learning form)	Topic: Introduction to simulation classes. Low and high-fidelity simulators, hybrid devices, applications (Android, iOs), and VR simulators. Directions of simulation development in dentistry.	B.W13.
S2 – Seminar 2-5 (e-learning form)	Topic: VR simulators. Principles of operation and educational possibilities of the Simodont VR simulator. Software assessment of the effectiveness of tasks performed in real-time, data archiving, and automatic determination of changes in the level of skills.	C.W28., F.W4.
PC1 – Practical Class 1-5	Topic: Training tasks. Preparation of carious lesions on 10 training models and 3 levels of difficulty in VR simulation conditions.	C.U9.
PC2 – Practical Class 6-10	Topic: Tasks on clinical cases. Preparations of class I, II and V cavities under VR simulation conditions and teeth chamber opening on 5 training models.	C.U6., C.U11,

<b>7. LITERATURE</b>
<b>Obligatory</b>
<ol style="list-style-type: none"> <li>Essentials of Operative dentistry. Sherwood IA. Jaypee Brothers Medical Publishers. 2010</li> <li>Clinical endodontics. A textbook 3rd Edition. Tronstad L. Georg Thieme Verlag. 2009</li> <li>Prosthetic treatment of the edentulous patient. Basker RM, Davenport JC, Thomason JM. Chichester: Wiley-Blackwell. cop. 2011</li> </ol>
<b>Supplementary</b>
<ol style="list-style-type: none"> <li>“FUNDAMENTALS OF FIXED PROSTHODONTICS” Shillingburg HT. et al. Quintessence Publishing.2012</li> </ol>

<b>8. VERIFYING THE EFFECT OF LEARNING</b>		
<b>Code of the course effect of learning</b>	<b>Ways of verifying the effect of learning</b>	<b>Completion criterion</b>
C.W28., F.W4., F.W14., C.U6., C.U9., C.U11., C.U13., F.U.22.	evaluation of the performance of a given procedure in real-time accordance with the Simodont® Student app.	<ul style="list-style-type: none"> <li>- tissue removal percentage (60%, 80% and 90%)</li> <li>- comparison with the planned preparation area</li> <li>- comparison with the correct preparation of class I and II cavities and under the protective crown.</li> </ul>

<b>9. ADDITIONAL INFORMATION</b>
<p>Didactic tutor of the faculty Małgorzata Ponto-Wolska PhD DDS, malgorzata.ponto-wolska@wum.edu.pl. Completion of the faculty: credit without a grade. Assessment criteria: passing each of the 3 assessed parameters for each task based on the Simodont® Student application. In a justified situation, the student may be late up to 15 minutes. A student may bring only things permitted by the teacher to the simulation room. Students in the classroom must wear a medical (surgical) apron with a stand-up collar, knee-length 100 cm, tied at the back with strings, disposable gloves, a surgical mask and changed shoes.</p>

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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