



VR simulation of clinical conditions

1. IMPRINT

Academic Year	2026/2027
Department	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	Full time program
Type of module / course	Obligatory
Form of verification of learning outcomes	Completion
Educational Unit / Educational Units	Department of Dental Propaedeutics and Prophylaxis, 59 Nowogrodzka str., 02-006, Warsaw, phone: 22 625 66 02, e-mail: zpips@wum.edu.pl
Head of Educational Unit / Heads of Educational Units	Leopold Wagner DDS, PhD
Course coordinator	Małgorzata Ponto-Wolska DDS, PhD malgorzata.ponto-wolska@wum.edu.pl
Person responsible for syllabus	Małgorzata Ponto-Wolska DDS, PhD malgorzata.ponto-wolska@wum.edu.pl
Teachers	Małgorzata Ponto-Wolska DDS, PhD malgorzata.ponto-wolska@wum.edu.pl Łukasz Zadrożny DDS PhD, lukasz.zadrozny@wum.edu.pl

2. BASIC INFORMATION

Year and semester of studies	II year, III and IV semesters	Number of ECTS credits	1.00
FORMS OF CLASSES	Number of hours	ECTS credits calculation	
Contacting hours with academic teacher			
Lecture (L)	-		-
Seminar (S)	5 (5 e-learning forms)		0,17
Classes (C)	10		0,33

e-learning (e-L)	-	-
Practical classes (PC)	-	-
Work placement (WP)	-	-
Unassisted student's work		
Preparation for classes and completions	15	0,5

3. COURSE OBJECTIVES	
O1	Obtaining the ability to assess the condition of tooth tissues in dental simulation conditions.
O2	Obtaining the ability to plan and perform basic procedures in the reconstruction of mineralized tissues in simulation conditions.
O3	Obtaining the ability to prepare mineralized tissues and open tooth chambers in virtual reality conditions.

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:	
C.W36.	basic clinical procedures for hard dental tissue reconstruction and endodontic treatment;
Skills– Graduate* is able to:	
C.U11.	prepare a carious lesion and reconstruct the missing mineralized tissues in a phantom tooth;
C.U12.	conduct endodontic treatment in a dental simulation setting;
C.U15.	replicate anatomical occlusal relationships and perform occlusion analysis;

5. ADDITIONAL EFFECTS OF LEARNING (non-compulsory)	
Number of effect of learning	Effects in the fields of:
Knowledge – Graduate knows and understands:	

K1	
K2	

Skills– Graduate is able to:

S1	
S2	

Social Competencies – Graduate is ready for:

SC1	
SC2	

6. CLASSES

Form of class	Class contents	Effects of Learning
S1 – Seminar 1(e-learning form)	Topic: Introduction to dental simulation. Low and high-fidelity simulators, hybrid devices, applications (Android, iOS), and VR simulators. Directions of simulation development in dentistry.	C.W36.
S2 – Seminar 2-3 (e-learning form)	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.W36.
S3 – Seminar 4-5 (e-learning form)	Topic: Summary of completed tasks, discussion of reports (group, individual, case realization). Advantages and disadvantages of VR devices. Educational questionnaire.	C.W36., C.U11., C.U12.
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.U11., C.U15.
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.U11., C.U12., C.U15.

7. LITERATURE

Obligatory

1. Essentials of Operative dentistry. Sherwood IA. Jaypee Brothers Medical Publishers. 2010
2. Clinical endodontics. A textbook 3rd Edition. Tronstad L. Georg Thieme Verlag. 2009

Supplementary

8. VERIFYING THE EFFECT OF LEARNING

Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
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C.W36., C.U11., C.U12., C.U15.	evaluation of the performance of a given procedure in real-time accordance with the Simodont [®] Student app.	- tissue removal percentage (60%, 80% and 90%) - comparison with the planned preparation area - comparison with the correct preparation of class I, II and V cavities - proper opening of the tooth chamber
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9. ADDITIONAL INFORMATION

Didactic tutor: Małgorzata Ponto-Wolska PhD DDS, malgorzata.ponto-wolska@wum.edu.pl.

Completion: credit without a grade.

Assessment criteria: passing each of the 3 assessed parameters for each task based on the Simodont[®] Student application.

The condition for passing the course is participation in all seminars and exercises. Passing the exercises requires obtaining a positive assessment of each completed task. In the case of absence, the planned tasks must be passed on a date agreed with the academic teacher conducting the classes.

To absence from classes, the student is obliged to notify the course coordinator or another person designated by the head of the unit by e-mail or in writing no later than three working days after the day on which the classes took place. Late submission of the excuse is permissible if the student was unable to provide it for justified reasons; in such a case, the document should be submitted once the reason for the absence ceases to exist.

In a justified situation, the student may be late up to 10 minutes.

It is not allowed to use mobile phones or other electronic devices during classes. 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, and changed shoes.

Student Scientific Club at the Department of Propaedeutics and Dental Prophylaxis, supervisor: Łukasz Zadrożny, MD, PhD, e-mail: lukasz.zadrozny@wum.edu.pl

Department's website: <https://propedeutyka-stomatologiczna.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