Appendix No.3
to Resolution No. 2303
of Senate of Wroclaw Medical University
of 28 April 2021

Syllabus for academic year: 2021/2022 Training cycle: 2017/2018-2021-2022														
Description of the course														
Course	**Faculty - Digital and aesthetic dentistry**												Group of detailed education results Group code: F Group name: V- Clinical sciences	
Faculty	Dentistry													
Major	dentistry													
Level of studies	**X** uniform magister studies													
Form of studies	**X** full-time X part-time													
Year of studies	V							Semester:	X winter					
Type of course	X free choice / optional													
Language of study	**X** English													
Number of hours														
Form of education														
	Lectures (L)	Seminars (SE)	Auditorium classes (AC)	Major Classes – not clinical (MC)	Clinical Classes (CC)	Laboratory Classes (LC)	Classes in Simulated Conditions (CSC)	Practical Classes with Patient (PCP)	Foreign language Course (FLC)	Physical Education (PE)	Vocational Practice (VP)	Directed Self-Study (DSS)	E-learning (EL)	
Winter semester:														
Laboratory for Digital Dentistry, Departament of Conservative Dentistry with Endodontics														
Direct (contact) education[1]		30												
Distance learning[2]														
Educational objectives (max. 6 items) C.1. Learning of the optimal use of materials (ceramic, resin composites),														

1

2

C.2. Learning of digital techniques (CAD / CAM, Digital smile design, CBCT, color measurement, templates) used for planning and aesthetic reconstruction of hard tissues reconstruction of teeth after root canal treatment, correction of malformation and tooth color
C.3. Acquiring the ability to choose the optimal therapeutic procedure in each clinical situation, treatment planning and using digital techniques,
C.3. Acquisition of scanning skills (digital impressions),
C.4. Knowledge of techniques and materials for adhesive cementation of indirect reconstructions made of ceramics and / or composite materials,
C.5. Mastering the techniques of color selection (manual, digital and ELAB system), learning the basic principles of smile aesthetics.

Education result for course in relation to verification methods of the intended education result and the type of class:

Number of deteiled education result	Student who completes the course knows/is able to	Methods of verification of intended education results	Form of didactic class **enter the abbreviation*
F. W11	The student can diagnose a patient (in the field of dental treatment) and is able to plan comprehensive interdisciplinary dental treatment. The student can present a treatment plan to a patient and work in a group to consult and solve any problems encountered	Preparation and presentation of a treatement plan	SE
F. W11	The student knows the aesthetic methods of indirect reconstruction (CAD-CAM system)	Oral response	SE
F. W11	The student can choose the optimal adhesive system, restorative material and reconstruction techniques in a given clinical situation	Oral response	SE
F. W11	Student is able to scan the surface of the prepared tooth, opposing teeth and register the bite, can determine the color of the tooth and choose the appropriate color and material for reconstruction	Oral response	SE
F. W11	The student knows the technique and methods of selecting the optimal color	Oral response	SE

* L- lecture; SE- seminar; AC- auditorium classes; MC- major classes (non-clinical); CC- clinical classes; LC- laboratory classes; CSC- classes in simulated conditions; PCP- practical classes with patient; FLC- foreign language course; PE- physical education; VP- vocational practice; DSS- directed self-study; EL- E-learning

Student's amount of work (balance of ECTS points):

Student's workload (class participation, activity, preparation, etc.)	Student Workload
1. Number of hours of direct contact:	30
2. Number of hours of distance learning:	
3. Number of hours of student's own work:	6
4. Number of hours of directed self-study	
Total student's workload	36
ECTS points for course	1

Content of classes: (please enter topic words of specific classes divided into their didactic form and remember how it is

translated to intended educational effects)

Seminars

No	Seminars
1	Aesthetic dentistry - objective parameters determining the smile and face aesthetics, golden proportion; treatment planning, patient examinations - CBCT analysis, OPG, photography of face, teeth and smile. Assignment of cases to prepare the presentation and self-study.
2	What we see: Color, gloss, translucency, opalescence, Color selection: traditional - shade guides (Vita Classic vs Vita 3D Linear Guide), digital color measurement with a spectrophotometer (digital shade guide) and digital photography in polarized light, communication with dental technician, practical exercises in "manual" color selection, taking pictures in polarized light, measuring with a digital shade..
3	Milling materials. Ceramics vs composite vs hard tissues (how to choose the optimal comparison of mechanical properties, advantages and disadvantages), adhesive technique for ceramics and composite cementation (step by step), optimal hard tissue preparation for indirect restaurations. Presentations prepared by students. Discussion.
4	The adhesive bonding of ceramics and composite to the hard tissues (step by step), optimal preparation of the tooth tissue and the restoration surface. Factors influencing the quality of the adhesive connection. Presentations prepared by students. Discussion.
5	Chair side CAD / CAM system, digital workflow protocols, scanning, software, design, milling, optimal toth preparation, preparation tools, preparation of the tooth surface and soft tissue for scanning, endocrown vs post and crown.
6	Chair side CAD / CAM system, digital workflow protocols, scanning, software, design, milling, front teeth reconstruction.
7	3D printing – additive manufacturing, materials and biomaterials for printing, printing technology, 3D printing application in dentistry, optimal tooth preparation, errors, basics of communication with the technician, algorithms for optimal cair side CAD / CAM application. Presentations prepared by students. Discussion
8	Digital smile - Digital smile design - reconstruction of anteriores using the chairside CAD / CAM CER system (presentation of cases and digital design workshops, advantages and limitations of digital dentistry, comparison of ceramic and resin composites for milling with hard tissues) Presentations prepared by students. Discussion
9	Non vital teeth - reconstruction and fracture protection, endocrowns versus glass fibers, cuspid covering rules. Presentations prepared by students. Discussion
10	Optimal treatment planning - clinical cases analysis; aesthetic problems solving, case studies, discussion of prepared treatment plans.

Others

1.Personal preparation of a patient's treatment plan based on CBCT, scans and photographs

2. Preparation of the model for 3D printing

3. Self-study of free CBCT and CAD / CAM analysis software

Basic literature (list according to importance, no more than 3 items)

1. Kidd E.A.M., Joyston-Bechal S.: *Essentials of dental caries*. 4rd ed. Oxford University Press, Oxford 2016
2. Banerjee A., Watson T.F.: *" Pickard's Guide to Minimally Invasive Operative Dentistry"*, 10th ed. Oxford

University Press, Oxford 2015
3. Heymann H., Swift E. and alt: *Sturdevant's Art and Science of Operative Dentistry.* Elsevier 6th ed., 2013

Additional literature and other materials (no more than 3 items)

D A Terry, W Geller: Estethic and restorative dentistry. Material selection and techniques 2013 Second edition. Quintessence Publishing Co Inc

Free software (selfstudy):

1. **Meshmixer - https://www.meshmixer.com/download.html**
2. **BlueSkyPlan - https://www.blueskyplan.com**

Preliminary conditions: (minimum requirements to be met by the student before starting the course)
Student is admitted to 5th year classes after successful completion of the final test summarizing knowledge of the subject from the 4rd year.
The student is entered on the list of participants (optional classes)

Conditions to receive credit for the course: (specify the form and conditions of receiving credit for classes included in the course, admission terms to final theoretical or practical examination, its form and requirements to be med by the student to pass it and criteria for specific grades)

1. attendance at seminars,

2. self-development of 1 treatment plan

3. preparation of the model for 3D printing

Unit realizing the course:	**Laboratory for Digital Dentistry, Departament of Conservative Dentistry with Endodontics**
Unit address:	Krakowska 26, 50-425 Wrocław
Telephone:	Tel.: (71) 784 0361
E-Mail:	stomzach@umed.wroc.pl

Person responsible for the course:	Wojciech Grzebieluch, DDS,PhD
Telephone:	Tel.: (71) 784 0361
E-Mail:	wojciech.grzebieluch@umed.wroc.pl

List of persons conducting specific classes:

Name and surname	Degree/scientific or professional title	Discipline	Performed profession	Form of classes
Wojciech Grzebieluch	DDS,PhD	Dentistry	GP	SE

Date of Syllabus development

28.08.2021

Syllabus developed by

Wojciech Grzebieluch, DDS,PhD

UNIWERSYTET MEDYCZNY
IM. PIASTÓW ŚLĄSKICH WE WROCŁAWIU

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Dean's signature

Uniwersytet Medyczny we Wrocławiu
WYDZIAŁ
LEKARSKO-STOMATOLOGICZNY
DZIEKAN

.....prof. dr hab. Marcin Mikulewicz.....

Signature of Head(s) of teaching unit(s)

Uniwersytet Medyczny we Wrocławiu
Wydział Lekarsko-Stomatologiczny
KATEDRA STOMATOLOGII ZACHOWAWCZEJ
Z ENDODONCJĄ
kierownik

dr hab. n. med. Katarzyna Skośkiewicz-Malinowska