

Syllabus for academic year: 2021/2022													
Training cycle: 2017/2018-2021/2022													
Description of the course													
Course	Laser Therapy										Group of detailed education results		
											Group code	Group name	
											F	SPECIALISED CLINICAL SCIENCES (SURGICAL)	
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 obligatory												
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:													
Department of Oral Surgery (Unit realizing the course)													
Direct (contact) education					25								
Distance learning													
Educational objectives													
C1. Learning the basics of operation and application of lasers in dentistry. Learning the physical basics and types of tissue reactions to laser light.													
C2. To familiarize students with the differences between devices, the differences between the wavelength, absorption by individual tissues, frequency in pulse work, power in a pulse and pulse length. To acquaint students with the properties of lasers in dental procedures and the principles of operation of low-, medium- and high-power lasers. Acquainting with the principles of safe work.													
C3. Keeping medical records. To familiarize students with the use of lasers in the prevention and diagnosis of caries, preparation of cavities in enamel and dentin, treatment of periodontal diseases, mucosa diseases, in the treatment of peri-implant inflammation and in endodontic treatment.													

C4. To acquaint students with the knowledge of the influence of laser radiation on cellular metabolism (photobiomodulation) and photodynamic therapy in dentistry.
C5. To acquaint students with the instruments and techniques of working with a diode laser, CO2 laser, Nd: YAG laser, Er: YAG laser, Er, Cr: YSGG laser.

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

Number of detailed education result	Student who completes the course knows/is able to	Methods of verification of intended education results	Form of didactic class <i>*enter the abbreviation</i>
F. W4	In terms of knowledge the graduate knows and understands symptoms, course and management of specific oral, head and neck diseases, taking into account patient age groups	Test, oral answer	CC
F. W9	In terms of knowledge the graduate knows and understands periodontal tissue and oral cavity mucosa diagnosis and treatment methods	Test, oral answer	CC
F. W11	In terms of knowledge the graduate knows and understands indications and contraindications for cosmetic dentistry procedures	Test, oral answer	CC
F. W12	In terms of knowledge the graduate knows and understands causes of complications of stomatognathic system diseases and the principles of handling such complications	Test, oral answer	CC

* 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:	25
2. Number of hours of distance learning:	
3. Number of hours of student's own work:	5
4. Number of hours of directed self-study	
Total student's workload	30
ECTS points for course	1,5

Content of classes:

Classes

- Physical basics and principles of laser operation. The reaction of tissues to laser light (the phenomenon of reflection, absorption, scattering, transmission). Laser operation modes, photothermal, photoionization, photochemical, phototoxic, photomechanical and photostimulating effects. Classification of lasers used in dentistry (diode lasers, CO2 lasers, Nd: YAG lasers, Er: YAG lasers, Er, Cr: YSGG lasers). Beam diameter control, operating modes. Principles of safe work. (5 hours)
- Laser as a tool for caries diagnostics. The influence of laser radiation on the enamel. The use of laser in caries prophylaxis. The use of laser in the preparation of enamel and dentin cavities. Lasers in endodontic treatment. (5 hours)

<p>3. The use of lasers in the treatment of periodontal diseases and diseases of the oral mucosa. The use of lasers in dental surgery and implantology. (5 hours)</p> <p>4. Photodynamic therapy (mechanism of action, indications). The use of photoactive disinfection in the treatment of mucosal diseases, in the treatment of periodontal diseases, in the treatment of inflammation of the peri-implant tissues, in conservative and endodontic treatment. (5 hours)</p> <p>5. Laser biomodulation; the effect of radiation on cellular metabolism, application techniques, indications). (5 hours)</p>
<p>Basic literature</p> <ol style="list-style-type: none"> 1. Chiapasco M.: Manual Of Oral Surgery. Third Edition. Edra, 2018 2. Peterson's Principles of Oral and Maxillofacial Surgery 2011 3. Fragiskos D.F. Oral surgery. Springer, 2007. <p>Additional literature and other materials (no more than 3 items)</p> <ol style="list-style-type: none"> 1. Stanley F.Malamed.: Handbook of local anesthesia.2004, Elsevier Mosby 2. Pedlar J., Frame J.: Oral and Maxillofacial Surgery an objective-based textbook.2007,Churchill Livingstone Elsevier 3. Wray D. [et al.]: Textbook of general and oral surgery. Churchill Livingstone
<p>Preliminary conditions: Completion of the subjects in dental surgery and periodontology in the fourth year.</p>
<p>Conditions to receive credit for the course: The condition for completing the course is obtaining positive grades from tests and oral answers during the semester.</p>

Criteria for courses ending with a credit	
Credit	Obtaining at least 60% correct answers on the final final test in the subject

Unit realizing the course:	Chair and Department of Oral Surgery – Wrocław Medical University
Unit address:	26 Krakowska Street , 50-425 Wrocław
Telephone:	71 7840251, Fax: 71 7840253
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Person responsible for the course:	Prof. dr hab. Marzena Dominiak			
Telephone:	71 7840251			
E-Mail:	Marzena.dominiak@umed.wroc.pl			
List of persons conducting specific classes:				
Name and surname	Degree/scientific or professional title	Discipline	Performed profession	Form of classes
Marzena Dominiak	Prof. dr hab.	Medical sciences	Professor	Clinical classes
Kinga Grzech-Leśniak	dr hab	Medical sciences	Lecturer	Clinical classes

Artur Błaszczyszyn	dr n. med	Medical sciences	Lecturer	Clinical classes
Jacek Matys	dr n. med	Medical sciences	Assistant	Clinical classes

Date of Syllabus development

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Syllabus developed by
Uniwersytet Medyczny we Wrocławiu
KATEDRA I ZAKŁAD
CHIRURGII STOMATOLOGICZNEJ
adiunkt dydaktyczny ED
lek. dent. Artur Piłaj



Uniwersytet Medyczny we Wrocławiu
KATEDRA I ZAKŁAD CHIRURGII
STOMATOLOGICZNEJ
kierownik

prof. dr hab. Marzena Dominiak

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

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Dean's signature
Uniwersytet Medyczny we Wrocławiu
WYDZIAŁ
LEKARSKO-STOMATOLOGICZNY
DZIEKAN
prof. dr hab. Marcin Mikulewicz