

			Sylla	bus fo	or acad	demic	year: 2	2020/2	2021					
			Trair	ning cy	vcle: R	ecruiti	ment 2	2016/2	2017					
				De	scriptio	on of tl	ne coui	rse						
Module/Course							Group of detailed education						1	
					Laser	otherap	ру		re	results				
		-						G	roup		Group r	ame		
								СС	code					
Faculty	English Division, Faculty of Dentistry													
Major		Facult	/ of De	entistry	/									
Unit realizing the subje	ct	t Department of Oral Surgery												
Specialties														
Level of studies			Unifor	m mag	gister s	tudies	*							
			1 <sup>st</sup> deg	ree stu	udies 🛛									
			2 <sup>nd</sup> de	gree st	udies									
			$3^{rd}$ degree studies $\Box$											
			postgraduate studies $\Box$											
Form of studies			X full-time X part-time											
Year of studies			V Semeste					ester	X Winter					
			IX						□ Summer					
Type of course			X obligatory											
			limited choice											
			□ free choice / elective											
Course			X major 🗆 basic											
Language of instructior	۱		□ Polish X English □ other											
* mark $\square$ with an X														
					Num	ber of l	nours							
	-		-	-	Form	of edu	cation							-
Unit teaching the course	(1)	5 (SE)	um classes (AC)	asses – not clinical	lasses (CC)	ry Classes (LC)	r Simulated ns (CSC)	Classes with Patient	t Classes – magister SCM)	anguage Course (FLC)	Education obligatory	al Practice (VP)	y (Student's own	g (EL)
	Lectures	Seminars	Auditoriu	Major Cl (MC)	Clinical C	Laborato	Classes i Conditio	Practical (PCP)	Specialis studies (	Foreign I	Physical (PE)	Vocation	Self-Stuc work)	E-learnin
Winter Semester														
Direct (contact)														
education				25										
Online learning														
(synchronous)														
(asynchronous)														



Summer Semest	er																
Direct (contact)																	
education																	
Online learning																	
(synchronous)																	
Online learning																	
(asynchronous)																	
TOTAL per year:	25																
Direct (contact)																	
education																	
Online learning																	
(synchronous)																	
Online learning																	
(asynchronous)																	
Educational obje	ectives (ma	x. 6 it	ems)														
C1. Learning the	basics of t	he op	eratio	n and	use	of lase	rs in de	entis	stry.	Learr	ning t	he phys	sical	fund	amer	ntals	and
types of tissue re	esponse to	laser	light.				1 .		1		· 1-				c		
C2. Differences I	oetween d	evices	, diffei	rence	s bet	ween	wavele	ngtr	n, ac	osorpt	ion b	y partic	cular	tissu	jes, ti	equ	ency
Droportion of los	lise power	and p	uise ie	ngth.	مامام	c of los		مانات		nd hia	h no	vorlas	orc				
Properties of las	ers in dent work	isti y c		2 prine	lihie	5 01 101	v-, me	uiuii	I- di	iu nig	n-po		ers.				
C3 Use of lasers	in the nre	ventic	on and	diagr	nosis	of cari	es the	dev	elor	omen	t of d	efects i	n en	ame	land	den	tine
treatment of dis	eases of th	e live	r. muc	osal d	iseas	ses. tre	atmer	nt of	infla	amma	ition	of peri-	recta	al tiss	sues a	and	ciric,
endodontic trea	tment.	-	.,			,						o. po					
C4. The influenc	e of laser r	adiati	on on (	cell m	etab	olism	biostir	nula	tion	) and	phot	odynar	nic tl	hera	py in		
dentistry.											-						
C5. Familiarize s	tudents wi	th inst	trumer	ntatio	n an	d techi	niques	of d	iode	e lasei	r, CO2	2 laser,	Nd: `	YAG	laser,	Er:	YAG
laser, Er laser, Ci	r: YSGG.					laser, Er laser, Cr: YSGG.											
Education result matrix for module/course in relation to verification methods of the intended education result																	
	: matrix for	modu	ule/cou	urse ir	n rela	ation to	o verifi	catio	on m	netho	ds of	the int	ende	d ed:	lucati	on r	esult
	: matrix for	modu	ule/cou	urse ir	n rela and	ation to the ty	o verifi pe of c	catio	on m	netho	ds of	the inte	ende	d ed	lucati	on r	esult
	<b>: matrix for</b> Number of	modu	ule/cou	urse ir	n rela and	ation to the ty	o verifi pe of c	catio lass	on m	netho Metho	<b>ds of</b>	<b>the int</b>	ende	e <b>d ed</b>	l <b>ucati</b> n of di	on r dacti	esult
Number of course	<b>matrix for</b> Number of major	modu	ule/cou Student	u <b>rse ir</b> : who c	omplies	ation to the ty etes the ws/is ab	o verifi pe of c	catio lass	on m	netho Metho of inte	<b>ds of</b> ods of ended	<b>the int</b> o verificati educatio	ende	ed ed Forr	l <b>ucati</b> n of di	on r dacti	esult
Number of course education result	Number of major education	modu	ule/cou Student module	urse ir : who c /course	on relation and	ation to the ty etes the ws/is ab	<b>o verifi</b> pe of c	catio lass	on m	netho Metho of inte results	ds of ods of onded s (form	the interverificati educatio	ende on n	Forr class **en	n of di	on r	esult c
Number of course education result	Number of major education result	modu	Jle/cou Student module	urse ir : who c /course	ompla ompla e knor	ation to the ty etes the ws/is ab	<b>o verifi</b> pe of c le to	catio	on m	Metho of inte results summ	ds of ods of onded s (form arising	the interverificati educatio ning and g)	ende on n	Forr class **en abbr	n of di s oter the reviation	on r dacti	esult c
Number of course education result <b>W 01</b>	Number of major education result (F.W6.)		Jle/cou Student module Studer	urse ir : who c /course nt kno	ompla ompla knor	ation to the ty etes the ws/is ab	o verifi pe of c le to ysical a	catio lass	on m	Metho of inte results summ Oral	ds of ods of onded s (form arising answ	the interverification education ning and g) er, test	ende on n	Forn class **en abbr	n of di s neter the reviation	on r dacti	esult c
Number of course education result <b>W 01</b>	Number of major education result (F.W6.)		Student module Studer	urse ir : who c /course nt kno ting p	ompla ompla knows trinci	ation to the ty etes the ws/is ab the phy ples of	o verifi pe of c le to ysical a	catio lass and and	n no	Metho of inte results summ Oral	ds of ods of onded of (form arising answ	the interverificati educatio ning and s) er, test	on n	Forn class **en abbr	n of di s nter the reviation	on r dacti	esult c
Number of course education result <b>W 01</b>	Number of major education result (F.W6.)		ule/cou Student module Studen operat	urse ir who c /course nt knc ting p ower	omple and omple kno ows t rinci lase	ation to the ty etes the ws/is ab the phy ples of rs; Kno	b verifi pe of c le to ysical a low- a bws th	catio lass and and e	on m	Metho of inte results summ Oral	ds of ended s (form arising answ	the interverificati educationing and g) er, test	on n	Forr class **en abbr	n of di s nter the reviation	on r dacti	esult c
Number of course education result <b>W 01</b>	Number of major education result (F.W6.)	modu	Jle/cou Student module Studer operat high-p modes	urse ir who c /course nt kno ting p ower s and	ompla ompla e know ows t rinci lase effed	ation to the ty etes the ws/is ab the phy ples of rs; Kno	le to ysical a low- a bws the	catio lass and and e er	on m	Metho of inte results summ Oral	ds of ods of nded s (form arising answ	the interverificati educatio aing and g) er, test	on n	Forr class **en abbr CC	n of di s ater the eviation	on r dacti	esult c
Number of course education result <b>W 01</b>	Number of major education result (F.W6.)	modu	Student module Studen Studen operat high-p modes	urse ir who c /course nt kno ting p ower s and	omplo omplo e knows t rinci lase effec	ation to the ty etes the ws/is ab the phy ples of rs; Kno cts of t	o verifi pe of c le to ysical a ows the he lase	catio lass and and e er	n nc	Metho of inte results summ Oral	ds of ods of onded s (form arising answ	the intervention of the in	on n	Forr class **en abbr CC	n of di s nter the reviation	on r dacti	esult c
Number of course education result W 01	Number of major education result (F.W6.)		Student Student Studer operat high-p modes Studer	urse ir who c /course ting p ower s and nt kno	ompla ompla ompla ows t rinci lase effect	ation to the ty etes the ws/is ab the phy ples of rs; Kno cts of t	o verifi pe of c le to ysical a cows the he lase dersta	catio lass and and e er unds	n nc	Metho of inte results summ Oral	ds of ods of ods (form arising answ	the intervention of the in	on n	Forr class **en abbr CC	n of di s iter the eviation	on r dacti	c
Number of course education result W 01	Number of major education result (F.W6.)		Student module Studer high-p modes Studer the pr	urse in who c /course nt knc ting p ower s and nt knc inciple	omplo omplo omplo e kno ows t lase effect ows a es of	ation to the ty etes the ws/is ab the phy ples of rs; Kno cts of t	le to vsical a vsical a vsical a dersta vork, c	catio lass and and e er er ands an	n n	Metho of inte results summ Oral	ds of inded is (form arising answ	the intervention of the in	on n	Forr class **en abbr CC	n of di s nter the reviation	on r dacti	esult c
Number of course education result W 01	Number of major education result (F.W6.)		Student module Studer operat high-p modes Studer the pr classif	urse ir who c /course nt kno ting p ower s and nt kno inciple y indi	omplo omplo e knows t rinci lase effect ows a es of	ation to the ty etes the ws/is ab the phy ples of rs; Kno cts of t and un safe v al lase	o verifi pe of c le to ysical a vows the he lase dersta vork, c	catio lass and e er inds can	on n	Metho of inte results summ Oral	ds of ods of onded s (form arising answ	the intervention of the in	on n	Forr class **en abbr CC	n of di s ter the eviation	on r dacti	esult c
Number of course education result W 01 W 02	Number of major education result (F.W6.)		Student module Studer operat high-p modes Studer the pr classif disting	urse in who c /course nt knc ting p ower s and nt knc inciple y indi guish	omplo omplo e knows t rinci lase effect ows a es of vidua	ation to the ty etes the ws/is ab the phr ples of rs; Kno cts of t and un safe v al lase veen th	o verifi pe of c le to ysical a tows the he lase dersta vork, c cs, neir	catio lass and e er mds can	on m	Metho of inte results summ Oral	ds of ended s (form arising answ	the intervention of the in	on n	Forr class **en abbr CC	n of di s etter the eviation	on r dacti	c
Number of course education result W 01 W 02	Number of major education result (F.W6.)		Student module Studer high-p modes Studer the pr classif disting princip	urse ir who c /course nt kno ting p ower s and nt kno inciple y indi guish bles a	omplo omplo omplo e kno ows t rinci lase effec ows a es of vidua betw nd ir	ation to the ty etes the ws/is ab the phy ples of rs; Kno cts of t and un safe v al lase veen the ndicatio	le to vsical a low- a vsical a low- a bws the he lase vork, c rs, heir ons for	catio lass and e er er ands can	n nc	Metho of inte results summ Oral	ds of ods of anded a (form arising answ	the intervention of the in	on n	Forr class **en abbr CC	n of di s nter the reviation	dacti	esult c
Number of course education result W 01 W 02	Number of major education result (F.W6.)		Student module Studer operat high-p modes Studer the pr classif disting princip work.	urse ir who c /course nt kno ting p ower s and nt kno inciple y indi guish l oles a	omplo omplo e knor ows t rinci lase effect ows a es of vidua betw nd ir	ation to the ty etes the ws/is ab the phy ples of rs; Kno cts of t and un safe v al lase veen the ndicatio	o verifi pe of c le to ysical a tows the he lase dersta vork, c rs, heir ons for	catio lass and e er inds an	n n     	Metho of interesults summ Oral	ds of ods of onded s (form arising answ	the intervention of the in	on n	Forr class **en abbr CC	n of di s iter the eviation	on r dacti	c



W 03	(F.W19)	Student knows the theory of caries, hard tissue development, indications and principles of periodontal diseases, application of lasers in endodontics, surgery and implantology	Oral answer, test	CC
W 04	(F.W22)	Student knows and understands the principles of laser biostimulation and photodynamic therapy for the treatment of mucosal disorders, periodontal treatment, peritonitis and conservative and endodontic treatment.	Oral answer, test	CC
U 01	F.U6	Interpretes the results of additional tests. Is able to use knowledge of dental anatomy and radiology then planning treatment	Direct observation of student demonstrating the skill assessed.	СС
U 02	F.U7	Determines the indications for performing the procedure. Can propose and indicate appropriate clinical management.	Direct observation of student demonstrating the skill assessed.	СС
U 03	F.U18	Sets the treatment for dental diseases of the stomatoghathic system	Direct observation of student demonstrating the skill assessed.	СС
K 01	D.K01	Actively takes part in the procedures	Direct observation of student demonstrating the skill assessed.	СС
К 02	D.K02	Cooperates in a group during patient examination, surgery and directly during the postoperative period	Direct observation of student demonstrating the skill assessed.	CC
** L - lecture; SE - SCM – specialist cl: with patient; PE –	seminar; AC – aud asses (magister stu physical education	ditorium classes; MC – major classes (non-clir udies); CSC – classes in simulated conditions; F n (obligatory); VP – vocational practice; SS – se	nical); CC – clinical classes; I EC – foreign language cours elf-study, EL – E-learning .	.C – laboratory classes; e; PCP practical classes



Please mark on scale 1-5 how the above effects place your classes in the following categories: communication of knowledge, skills or forming attitudes: Knowledge: +++ Skills: + Social competences: ++ Student's amount of work (balance of ECTS points) Student's workload Student Workload (h) (class participation, activity, preparation, etc.) 25 1. Contact hours: 2. Online learning hours (e-learning): 15 3. Student's own work (self-study): 40 Total student's workload ECTS points for module/course 1,5 Comments 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) Lectures Not applicable. Seminars Not applicable. Practical classes 1. Physical principles. Principles of laser operation. Tissue reaction to laser light (reflection, absorption, diffusion, transmission). Laser modes, photothermal, photo ionization, photochemical, phototoxic, photomechanical and photostimulation. 2. Classification of lasers used in dentistry (diode lasers, CO2 lasers, Nd: YAG lasers, Er: YAG lasers, Er, Cr: YSGG lasers). Beam diameter control, working modes. Principles of safe work. 3.Laser as a tool for caries diagnosis. Influence of laser radiation on enamel. Application of laser in caries prevention. Application of laser in the development of enamel and dentine defects. 4. Laser biostimulation; Influence of radiation on cell metabolism, application techniques, indications). Photodynamic therapy (mechanism of action, indication). The use of photoactive disinfection in the treatment of mucosal disorders, in the treatment of periodontal diseases, in the treatment of periapical papillary inflammation, in conservative and endodontic treatment. 5. Lasers for endodontic treatment. The use of lasers in the treatment of periodontal disease and oral mucosal diseases. Application of lasers in dental surgery and implantology. Other ... **Basic literature** (list according to importance, no more than 3 items) 1. Peterson, Ellis, Hupp, Tucker .: Contemporary Oral and Maxillofacial Surgery, 2003 2.C.E. Mish: Contemporary Implant Dentistry, Mosby, 2008, Edition 3 3. S.J.Froum, W. Blackwell: Dental Implant Complication, Springer, 2007 Additional literature and other materials (no more than 3 items)



Wray D. [et al.]: Textbook of general and oral surgery. Churchill Livingstone, 2003
Fragiskos, Fragiskos D.: Oral surgery.: Springer 2007, ISBN-13: 978-3540251842
Koerner K.R.: Manual of minor oral surgery for the general dentistry. Blackwell, 2006

**Didactic resources requirements** (e.g. laboratory, multimedia projector, other...) Multimedia projector, models with teeth and toothless, lasers, protective goggles

**Preliminary conditions** (minimum requirements to be met by the student before starting the module/course)

- 1. Presence of the student list from Dean's office
- 2. Acquaintance of instruction book of work in Oral Surgery Department

**Conditions to receive credit for the course** (specify the form and conditions of receiving credit for classes included in the module/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. Receipt of a positive assessment of oral answers
- 2. Passing the test
- 3. Positive assessment of skills by the teacher

Grade:	<b>Criteria</b> (only for courses/modules ending with an examination)
Very Good	
(5.0)	
Good Plus	
(4.5)	
Good	
(4.0)	
Satisfactory Plus	
(3.5)	
Satisfactory	
(3.0)	
	Criteria (only for courses/modules ending with e credit)
Credit	



Appendix to Resolution No. 2186 of Senate of Wroclaw Medical University of 1 July 2020

Grade:	Criteria (examination evaluation criteria)
Very Good	
(5.0)	
Good Plus	
(4.5)	
Good	
(4.0)	
Satisfactory Plus	
(3.5)	
Satisfactory	
(3.0)	
Unit realizing the	
subject	
Unit address	
Telephone	
E-Mail	

Person responsible	Prof. dr hab. Marzena Dominiak
for module	
Coordinator	Lek. dent. Artur Pitułaj
Telephone	71 784 02 51
E-Mail	Jolanta.pilarska@umed.wroc.pl

List of persons conducting specific classes							
Full name	Degree/scientific or	Discipline	Performed	Form of classes			
	professional title		profession				
Artur Pitułaj	Lek. dent.	Oral Surgery	Dentist	Clinical classes			
Artur	Dr n. med.	Oral Surgery	Dentist	Clinical classes			
Błaszczyszyn							
Paweł Popecki	Lek. dent.	Oral Surgery	Dentist	Clinical classes			
Kinga Grzech-	Dr n. med.	Periodontology	Dentist	Clinical classes			
Leśniak							
Daniel Selahi	Lek. dent.	Oral Surgery	Dentist	Clinical classes			
Barbara	Lek. dent.	Oral Surgery	Dentist	Clinical classes			
Sterczała							



Appendix to Resolution No. 2186 of Senate of Wroclaw Medical University of 1 July 2020

Jakub Hadzik	Dr n. med.	Oral Surgery	Dentist	Clinical classes

## Date of Syllabus development

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Syllabus developed by

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Signature of Head of teaching unit

.....

Signature of Faculty Dean

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