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| **Syllabus 2020/2021****training cycle: Recruitment 2016/2017** |
| **Description of the course** |
| **Module/Course** | **Laserotherapy** |
| **Faculty** | English Division, Faculty of Dentistry |
| **Major**  | Faculty of Dentistry |
| **Specialties** |  |
| **Level of studies** | Uniform magister studies X\*1st degree studies 2nd degree studies 3rd degree studies postgraduate studies  |
| **Form of studies** | X full-time X part-time |
| **Year of studies**  | V | **Semester** **IX** |  X Winter Summer |
| **Type of course** | X obligatory limited choice free choice / elective  |
| **Course** | X major basic |
| **Language of instruction** |  Polish X English other |
| \* mark with an **X** |
| **Number of hours** |
| Form of education |
| Unit teaching the course | 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) | Specialist Classes – magister studies (SCM) | Foreign language Course (FLC) | Physical Education obligatory (PE) | Vocational Practice (VP) | Self-Study (Student's own work) | E-learning (EL) |
| **Winter Semester** |
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| **Summer Semester** |
|  |  |  |  |  | 25 |  |  |  |  |  |  |  |  |  |
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| **TOTAL per year: 25** |
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| **Educational objectives** (max. 6 items)**C1. Learning the basics of the operation and use of lasers in dentistry. Learning the physical fundamentals and types of tissue response to laser light.****C2. Differences between devices, differences between wavelength, absorption by particular tissues, frequency in impulse, impulse power and pulse length.** **Properties of lasers in dentistry and the principles of low-, medium- and high-power lasers.** **Principles of safe work.****C3. Use of lasers in the prevention and diagnosis of caries, the development of defects in enamel and dentine, treatment of diseases of the liver, mucosal diseases, treatment of inflammation of peri-rectal tissues and endodontic treatment.****C4. The influence of laser radiation on cell metabolism (biostimulation) and photodynamic therapy in dentistry.****C5. Familiarize students with instrumentation and techniques of diode laser, CO2 laser, Nd: YAG laser, Er: YAG laser, Er laser, Cr: YSGG.** |
| **Education result matrix for module/course in relation to verification methods of the intended education result and the type of class** |
| Number of course education result  | Number of major education result  | Student who completes the module/course knows/is able to | Methods of verification of intended education results (forming and summarising) | Form of didactic class*\*\*enter the abbreviation* |
| **W 01**  | **(F.W6.)** | Student knows the physical and operating principles of low- and high-power lasers; Knows the modes and effects of the laser | Oral answer, test | CC |
| **W 02**  | **(F.W 15)** | Student knows and understands the principles of safe work, can classify individual lasers, distinguish between their principles and indications for work. | Oral answer, test | CC |
| **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. | CC |
| **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. | CC |
| **U 03** | **F.U18** | Sets the treatment for dental diseases of the stomatoghathic system | Direct observation of student demonstrating the skill assessed. | CC |
| **K 01** | **D.K01** | Actively takes part in the procedures | Direct observation of student demonstrating the skill assessed. | CC |
| **K 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 - seminar; AC – auditorium classes; MC – major classes (non-clinical); CC – clinical classes; LC – laboratory classes; SCM – specialist classes (magister studies); CSC – classes in simulated conditions; FLC – foreign language course; PCP practical classes with patient; PE – physical education (obligatory); VP – vocational practice; SS – self-study, EL – E-learning .  |
| 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** (class participation, activity, preparation, etc.) | **Student Workload (h)** |
| 1. Contact hours: | 25 |
| 2. Student's own work (self-study): | 15 |
| Total student's workload | 40 |
| **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,20032.C.E. Mish: Contemporary Implant Dentistry, Mosby, 2008,Edition 33. S.J.Froum, W. Blackwell: Dental Implant Complication, Springer, 2007**Additional literature and other materials** (no more than 3 items)1.Wray D. [et al.]: Textbook of general and oral surgery. Churchill Livingstone, 20032.Fragiskos, Fragiskos D.: Oral surgery.: Springer 2007, ISBN-13: 978-35402518423.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 office2. 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)IMPORTANT! Class attendance cannot be a condition for passing the subject.1. Receipt of a positive assessment of oral answers2. Passing the test3. Positive assessment of skills by the teacher |
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| **Grade:** | **Criteria** (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) |  |
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| **Name and address of module/course teaching unit, contact: telephone and e-mail address**Katedra i Zakład Chirurgii Stomatologicznej Uniwersytetu Medycznego im. Piastów Śląskich ul. Krakowska 26, 50-425 Wrocław SEKRETARIAT Jolanta PilarskaTel: 717840251, Fax: 717840253 mail: jolanta.pilarska@umed.wroc.pl**Coordinator / Person responsible for module/course, contact: telephone and e-mail address**dr n. med. Kinga Grzech-Leśniak- adiunkt **List of persons conducting specific classes: full name, degree/scientific or professional title, discipline, performed profession, form of classes**.1. dr n. med. Kinga Grzech-Leśniak- adiunkt (clinical classes) 2. dr n. med. Artur Błaszczyszyn - adiunkt (clinical classes) 3. lek. dent. Jakub Hadzik - asystent (clinical classes) 4. lek. dent. Artur Pitułaj- asystent (clinical classes) 5. lek. dent. Klaudia Kazubowska- asystent (clinical classes) 6. lek.dent. Paweł Popecki- asystent (clinical classes) 7. lek.dent. Aleksandra Całkosińska- studia doktoranckie (clinical classes)

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| **Date of Syllabus development**  | **Syllabus developed by**Lek. dent. Artur Pitułaj  |
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| **Signature of Head of teaching unit** |
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**Signature of Faculty Dean**  |
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