| Attachment No. 3 | | Course program for the first cycle of studies | | | | |
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| 1. | Course title | Temporomandibular joint disorders | | | | |
| 2. | Code | DMETM6 | | | | |
| 3. | Study program | Dentistry - integrated first and second cycle of studies | | | | |
| 4. | Organizer of the study program (unit, i.e., institute, department, division) | UKIM - Faculty of Dentistry,<br>Department of Prosthodontic Dentistry | | | | |
| 5. | Degree (first, second, third cycle) | Integrated First and Second Cycle Studies | | | | |
| 6. | Academic year/semester | Year | 6 | semester | 11 | |
| 7 | Course workload expressed | 2 | | | | |

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| | in ECTS credits | |
| 8. | Teacher (in case of multiple teachers, designated teacher in charge) | Prof. Dr. Aneta Mijoska - Teacher in charge (teachers and associates from the Department of Prosthodontic Dentistry) |
| 9. | Language in which the curriculum is conducted | English |
| 10. | Necessary prerequisites for taking and passing the course | No |
| 11. | Course objectives (competences) and learning outcomes: | Through theoretical teaching, the students are introduced to the issues of temporomandibular joint dysfunctions by establishing a diagnosis and choosing conservative or invasive treatment for temporomandibular joint and muscle irregularities. |
| 12. | Detailed course content by chapters and units, with learning outcomes for each chapter | 1. Chapter - Etiology of functional disorders in the masticatory system<br>Introduction, concept and definition of TMD.....1 class<br>Etiology of TMD (occlusion, trauma, psychosocial factors, stress, parafunctions).....1 class<br>Outcomes from chapter 1: the students will learn about TMD and the etiological factors for the occurrence of the disorders<br>2. Chapter - Signs and symptoms of temporomandibular disorders<br>Muscular symptoms - protective hypercontraction, localized muscle pain, myofascial pain, myospasm, myalgia, fibromyalgia, chronic pain.....1 class<br>Joint symptoms - disc disorders, subluxations, dislocation, loose joint, inflammation, synovitis, capsulitis, arthrosis. .....1 class<br>Chapter 2 Outcomes: The students will gain the competencies to recognize the signs and symptoms of TMD originating from the masticatory muscles, TMJ, and surrounding tissues<br>Chapter 3 - History and examination of temporomandibular disorders<br>Functional examination of the masticatory muscles and determination of normal and limited movement of the lower jaw, functional examination of the TMJ (presence of sounds or crepitus, palpation and auscultation), disc disorders and dislocations with and without reduction, headache and migraine....2 classes<br>Outcomes from chapter 3: The students will be introduced to the procedures for properly performing the clinical examination and examination of muscle and TMJ disorders<br>Chapter 4 - Diagnosis of temporomandibular disorders<br>Diagnostic procedures - palpation, auscultation, registration of disorders in the movement of the lower jaw, examination of the teeth (mobility, cracks, fractures, hypercementosis, abrasive facets and abfractions, dental occlusion, central and centric relation, vertical dimension, eccentric and unstable contacts), examination of the joints (orthopantomograph, lateral tomography, CT, MRI, CBCT). 2 classes<br>Outcomes from chapter 4: The students will learn about all available diagnostic clinical and paraclinical methods for the diagnosis of TMD/<br>5. Chapter - General guidelines in the treatment of temporomandibular disorders<br>Conservative (reversible) therapeutic methods.....1 class<br>Non-conservative (irreversible) therapeutic methods.....1 class<br>Outcomes from chapter 5:<br>The students will learn about the two basic therapeutic methods in TMD, conservative and non-conservative approach, will learn about the first choice of therapeutic procedures, and how the patient is monitored in the further course of the disease<br>Chapter 6. Treatment of masticatory muscle disorders<br>Non-invasive treatment - pharmacotherapy, dietary regimen, cognitive therapy, stress therapy, relaxation, biofeedback therapy, physical therapy, laser, ultrasound, tens, acupuncture, passive and active myofunctional exercises, neuromodulators)1 class<br>Outcomes from chapter 6: The students will be introduced to modern methods for the treatment of myofunctional symptoms of the disease, will learn |

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| | | modern procedures for electro and neuromodulatory therapy of TMD<br>7. Chapter - Treatment of temporomandibular joint disorders<br>Conservative therapeutic procedures (education, manual manipulation, non-conservative therapeutic procedures (injections with corticosteroids, anesthetics, or hyaluronidase into the intraarticular space, joint surgery, arthroscopy, arthrotomy, discectomy) ……1 class<br>Outcomes from chapter 7: The students will be introduced to the modern methods for the treatment of arthrogenic symptoms of the disease, will learn about modern procedures for the treatment of TMJs.<br>8. Chapter - Treatment of chronic mandibular hypomobility<br>The term mandibular hypomobility - a chronic form of reduced mandibular mobility (ankylosis - fibrous and capsular, muscle contracture, and coronoid inconsistency), degree of severity. Therapeutic modalities for hypomobility - conservative and surgical approach. ....1 class<br>Outcomes from chapter 8: The students will be introduced to the modern methods for the treatment of muscular and arthrogenic hypomobility of the lower jaw, and learn about possible options for improving the condition<br>9. Chapter - Therapy with occlusal intraoral inserts<br>Introduction, concept and classification of occlusal inserts - splints, division according to material, place of placement and effect of action. Stabilization and restrictive therapeutic occlusal inserts...1 class<br>Outcomes from chapter 9: The students will be introduced to the general knowledge about the use of occlusal inserts as a modern, conservative, reversible therapeutic procedure in the treatment of TMD. They will learn what splints are for the treatment of acute conditions with pain and limited opening, what devices are used in chronic joint diseases, what the effect of their action is, and what materials they are made of for the most effective long-term treatment of the disorder.<br>10. Chapter - General guidelines in occlusal therapy<br>Reversible occlusal therapy - occlusal inserts<br>Irreversible occlusal therapy - occlusal equilibration (selective scaling, occlusal adjustment), orthodontic and prosthodontic treatment (crowns and bridges), application of the "rule of thirds" in irreversible scaling, use of diagnostic studio models, factors that influence the choice of type of therapy. .....1 class<br>Outcomes from chapter 10: The students will be introduced to the general knowledge of the use of reversible or irreversible occlusal therapy to achieve relief of the symptoms of the disorder, will acquire the knowledge to independently make decisions about the most appropriate therapeutic method in the treatment<br>Total .....15 classes<br>Practical teaching-seminars<br>Covering topics from the relevant course, presentation of the topics by the students, and active involvement of the students in the discussion of the given issue.<br>Total .....15 classes | | |
| 13 | Interrelation of subjects | Interrelation with Gnathology | | |
| 14. | Detailed description of the teaching and working methods for the subject | Interactive instruction, laboratory or clinical exercises, working in small groups, presentation and performance of laboratory procedures, demonstration of instruments and methods used, teamwork (according to the specifics of the course) | | |
| 15. | Total available time | 60 classes | | |
| 16. | Forms of teaching activities | 16.1. | Lectures - theoretical teaching classes | 20 classes |
| | | 16.2. | Exercises (laboratory, auditorium), seminars, teamwork: classes | 10 classes |
| | | 16.3. | Practice: classes | |
| 17. | Other forms of activities | 17.1. | Project assignments: classes | |
| | | 17.2. | Independent assignments: classes | |
| | | 17.3. | Home study - assignments | 30 classes |
| 18 | Signature requirements | In order to receive a signature, the students must fulfill the obligations during the theoretical instruction and seminars. To take the final exam, they must | | |

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| | | pass the prescribed test. | | | | |
| 19 | Grading method | | | | | |
| | 19.1. | Tests: points | | | 30 | |
| | 19.2. | Seminar paper/project, written and oral presentation: points | | | 10 | |
| | 19.3. | Final exam: points | | | 60 | |
| 20 | Grading criteria (points/grade) | | up to 59 points | | 5 (five) (F) | |
| | | | from 60 to 68 points | | 6 (six) (E) | |
| | | | from 69 to 76 points | | 7 (seven) (D) | |
| | | | from 77 to 84 points | | 8 (eight) (C) | |
| | | | from 85 to 92 points | | 9 (nine) (B) | |
| | | | from 93 to 100 points | | 10 (ten) (A) | |
| 21. | Method of monitoring the quality of instruction | | Self-evaluation by students, control by assistants in carrying out practical instruction and assessment of the students' success, as well as the pass rate of students who have passed the course | | | |
| 22. | Literature | | | | | |
| | 22.1. | Required literature | | | | |
| | | Ord. No. | Author | Title | Publisher | Year |
| | | 1. | Guguvchevski Lj. | Dysfunction of the temporomandibular joint | | Skopje 2014 |
| | 22.2. | Additional literature | | | | |
| | | Ord. No. | Author | Title | Publisher | Year |
| | | 1. | Jeffrey P. Okeson | Management of temporomandibular disorders and occlusion, edition 6 | Elsevier, Mosby | 2008 |
| | | 2. | Axel Bumann and Ulrich Lotzmann | TMJ Disorders and Orofacial Pain | Grammlich, Pliezhausen | 2002 |