

Study program: Integrated academic studies in dentistry			
Type and level of the study program: integrated academic studies			
Course title: Maxillary orthopedics I (DIV-MXORT)			
Teacher: Djordje D. Petrovic, Predrag V. Vucinic, Stojan M. Ivic			
Course status: compulsory			
ECTS Credits: 8			
Condition: Gnathology; Radiology			
Course aim The objective of the course in Orthodontics I is to acquaint students with jaw growth and development and to enable him to understand and identify the age-related general and local factors, as well as the diverse interventions and procedures (extraction of milk teeth and permanent teeth, tooth fillings, etc.) that can induce a range of orthodontic disorders. Learning mutual connections between diverse general and local disorders and conditions and development of chewing organs and face, the students will develop ability of critical thinking and conclusion making.			
Expected outcome of the course: - Learning on normal growth and development of jaws and teeth; development of normal occlusion - Etiological factors associated with the occurrence of malocclusions - Morphological diagnostic procedure as a baseline for orthodontic treatment planning (analysis of teeth position, shape and size of the jaws and occlusion findings on dental study models in sagittal, vertical and transverse plane of space). - Knowing basic principles of orthodontic abnormalities in sagittal, vertical and transverse plane of space. - Taking anatomical imprints, molding and creating of working and study models - Analysis of study models using instrumentation for gnathometric analysis (differentiating between milk teeth and permanent teeth, determining the middle point of the jaw, analysis of teeth position and dental arch development, analysis of occlusal relationships) - Creation of retention and active wire elements for mobile orthodontic apparatus			
Course description <i>Theoretical education</i> 1. Definition, tasks and objectives of the course; Psychological and social-economical importance of orthodontics 2. History of orthodontics; first records on orthodontic disorders; records on orthodontic therapy before Engel and towards modern orthodontic therapy approach. 3 Prenatal development of head and face. 4. Prenatal development of teeth. 5. Postnatal development of the head, face, jaws and teeth from birth to first milk teeth eruption. 6. Development of masticatory organs from first milk teeth eruption to completion of milk teeth series (to 2.5 years). 7. Development of masticatory organs in the period of first milk teeth series and early mixed teeth series (early mixed dentition). 8. Development of masticatory organs in the period of late mixed teeth series (late mixed dentition). 9. Development of masticatory organs in the period of permanent teeth series (permanent dentition). 10. Normal occlusion – ideal occlusion and articulation. 11. Motor functions – general characteristics of muscles and their overall function, normal breathing function and its influence on the development of orofacial system. 12. Normal function of feeding – breast-feeding and swallowing and their effect on orthofacial region development. 13. Function of feeding – chewing and its effect on normal development of orthofacial system. 14. Function of speech focusing on articulation of sounds in oral cavity and its importance in masticatory organ development. 15. Features and importance of the imprint in orthodontics. 16. Importance and creation of study models. 17. Instruments used for analysis of study models. 18. Schwartz analysis of study models, measuring points for width and height of dental arch, median values. 19. Analysis of teeth position in transversal plane in the upper and lower jaw, determining the mid-point of upper and lower jaw. 20. Analysis of teeth position in sagittal plane in the upper and lower jaw. 21. Analysis of teeth position in vertical plane of space, shape and height of the palate. 22. Analysis according to Moyers and Bolton. 23. Assessment of sagittal relationship of jaws, terminology of the occlusal finding. 24. Importance and analysis of intraoral and extraoral X-ray scans. 25. Rtg craniometry and Rtg cephalometry. 26. Analysis of profile Ro scan according to Schwartz and Steiner. 27. Etiology of malocclusion, classification of malocclusions, biochemical basis of inheritance, inheritance pathways. 28. Effects/role of inheritance on orofacial region. 29. General diseases and disorders of endocrine function and their effects on the occurrence of malocclusions. 30. Nutrition deficiency, congenital anomalies and their impact on the occurrence of malocclusions. 31. Local diseases and trauma and their impact on the occurrence of malocclusions. 32. functional disorders and bad habits and their impact on the occurrence of malocclusions. 33. Hyperdontia and hypodontia, macro- and microdontia, persistence of milk teeth and their impact on the occurrence of malocclusions. 34. Impairments in the view of teeth position. 35. Impairments in the view of the number and size of teeth. 36. Impairments of dental arch – crooked teeth, irregular shape or size. 37. Impairments of I class. 38. Impairments of II class. 39. Impairments of III class. 40. Transversal and vertical impairments. 41. Congenital anomalies – Cheilognathopalatoshisis. 42. Congenital anomalies – syndromes. <i>Practical education: exercises, other forms of education, research related activities</i> 1. Taking anatomical imprints, individual bite was moulds; working models and creating the base plate. 2. Instruments for performing gnathometric analysis. 3. Toothless jaw (milk teeth, permanent) and its characteristics; deviation from normal occlusion at all three planes – displaying characteristic cases. 4. Differentiation between milk teeth and permanent dentition. 5. Determining dental age. 6. Analysis of study models – teeth status, labeling, numbering, type and shape of teeth. 7. Determining the mid-point of the upper jaw. Transferring the median to the lower jaw. Rtg spine mentalis. 8. Analysis of the symmetry/asymmetry of teeth; reconstruction. 9. Schwartz analysis: measuring of the upper and lower jaw/width and height of the dental arch/median value. 10. Comparison of the teeth series in the upper and lower jaw at all three planes in space (sagittal, vertical and transversal). 11. Bite classification according to Engel. 12. Tooth ratio and dentition analysis (Moyers, Bolton). 13. Diagnostics of occlusal finding (terminology), therapy plan, description. 14. Morphological diagnosis and therapy plan. 15. Mechanical features of the wire and types of orthodontic forceps. 16. Practicing the techniques of dental wire twisting. 17. Components and basic characteristics of particular orthodontic apparatus. 18. Twisting of retention and active wire elements of the orthodontic apparatus. 19. Knowledge test.			
Literature <i>Compulsory</i> 1. Gardiner J.H. Orthodontics for dental students. Oxford University Press, 1998. 2. Rakosi T. Color Atlas of Dental Medicine, Orthodontic Diagnosis. Thieme,1993. <i>Additional</i> 1. Proffit WR, Fields HW, Sarver DM. Contemporary Orthodontics. Mosby Co. 2013.			
Number of active classes			Other:
Lectures: 45	Practice: 75	Other types of teaching:	Research related activities:
Teaching methods			
Student activity assessment (maximally 100 points)			
Pre-exam activities	points	Final exam	points
Lectures	20	Written	
Practices	20	skills	
Colloquium		Oral	60
Essay			