2025/2026

Univerza v Mariboru

UČNI NAČRT PREDMETA / COURSE SYLLABUS	
Predmet:	**Orofacialna genetika**
Course title:	**Orofacial Gentics**

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Year of study	Semester Semester
Dentalna medicina/Dental Medicine 2. stopnja/2nd cycle		**3**	**6.**

Vrsta predmeta / Course type Obvezni/Compulsory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje Clinical training	Druge oblike študija Other forms of study	Samost. delo Individual work	ECTS
5	**40**				**45**	**3**

Nosilec predmeta / Lecturer: **Red. prof. dr. Danko Bakarčić**

Jeziki / Languages:
Predavanja / Lectures: slovenščina/slovene
Vaje / Tutorial:

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:

Biologija
Morfologija zob (anatomija in fiziologija ustne votline)

Prerequisits:

Biology
Tooth morfology (anatomy and phisiology of oral cavitiy)

Vsebina:

Zgodovina in pomen orofacialne genetike. Epidemiologija kraniofacialnih malformacij in pogostnost genetskih bolezni v populaciji. Dismorfije kraniofacialnih struktur (minor in major anomalije). Geni in kromosomi kot nosilci dednosti (normalne in abnormalne strukture). Metode v genetiki: analiza družine, študije prebivalstva, dvojčki, kromosomi, dermatoglifi. Pregled in ocena kraniofacialne regije pri kraniofacialnih dismorfijah. Genetske nepravilnosti zob: anomalije števila, oblike, velikosti in strukture zoba. Najpogostejši kromosomski sindromi, ki zajemajo orofacialne strukture (Down, Fragilni X, Klinefelterjev, Turnerjev sindrom). Ektodermalna displazija: razvrstitev, diagnosticiranje in odkrivanje heterozigotov. Presnovne motnje in kraniofacialne strukture (mukopolisaharidoze, mukolipidose, homocistinurija, Lesch-Nyhan sindrom). Genetske motnje paradontnih struktur. Nevrokutani sindromi in orofacialne strukture. Heiloshiza in razcepi ustnice in neba in sindromi z razcepi (Rovinova sekvenca, EEC sindrom, Vander-Woudov sindrom). Genetsko svetovanje v zobozdravstvu.

Content (Syllabus outline):

History and significance of orofacial genetics. Epidemiology of craniofacial malformations and frequency of genetic diseases in the population. Dysmorphia of craniofacial structures (minor and major anomalies). Genes and chromosomes as carriers of the inheritance (normal and abnormal structures). Methods in genetics: family analysis, population studies, twins, chromosomes, dermatoglyphs. Examination and evaluation of craniofacial region in cranial dismorphia. Genetic anomalies of the teeth: anomalies in number, shape, size and structure of tooth. The most frequent chromosomal syndromes that affects orofacial structures (Down, fragile X, Klinefelter, Turner syndrome). Ectodermal dysplasia: classification, diagnosis and detection of heterozygotes. Metabolic disorders and craniofacial structures (mucopolysaccharidosis, mucillipidosis, homocystinuria, Lesch-Nyhan syndrome). Genetic Disorders of periodontal structures. Syndromes with cleft lips and palate (Robins sequence, EEC syndrome, Vander-Woude syndrome). Genetic counseling in dental medicine.

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Temeljni literatura in viri / Readings:

1. Škrinjarić I. Orofacijalna genetika. Školska knjiga, Zagreb, 2006
2. Ajila V, Babu S, Harini K. Orofacial genetics. London: Lambert Academic Publishing; 2013.
3. Jurić H ur. *Dječja dentalna medicina*. Naklada Slap, Jastrebarsko, 2015:187-211.
4. Zukanović A, Gržić R. *Stomatološko liječenje medicinski kompromitiranih pacijenata*. HKDM, Zagreb, 2012:319-41.

Cilji in kompetence:	**Objectives and competences:**
Obvladovanje znanja, potrebnega za preprečevanje, diagnozo in zdravljenje genskih motenj. Študenti se morajo naučiti identificirati genske komponente v etiologiji bolezni za diagnozo, prognozo in racionalen pristop k zdravljenju.	Mastering the knowledge necessary for the prevention, diagnosis and treatment of genetic disorders regarding orofacial structures. Students need to learn to identify genetic components in the etiology of the diseases for diagnosis, prognosis and rational approach to treatment.
Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: • Opisati zgodovino in pomen orofacialne genetike. • Opredeliti malformacije dedne etiologije. • Določiti sindrome. • Definirati sindrome z orodentalnimi anomalijami. • Opisati epidemiologijo kraniofacialnih malformacij. • Razlikovati pogostnost genskih bolezni v populaciji. • Opisati dismorfije kraniofacialnih struktur (manjših in glavnih anomalij), • Razlikovati genetske anomalije zob: anomalije števila, oblike, velikosti in strukture. • Opisati in razlikovati simptomatologijo orofacialne regije pri motnjah rasti. • Opisati in razlikovati simptomatologijo pri najpogostejših sindromih različnih genov z manifestacijami v orofacialni regiji. • Opisati najpogostejše kromosomske sindrome, ki zajemajo orofacialne strukture (Down, Fragilni X, Klinefelterjev, Turner sindrom). • Opisati ektodermalne displazije (razvrstitev, diagnosticiranje in odkrivanje heterozigotov). • Opisati metabolične motnje kraniofacialne strukture (mukopolisaharidoza, mukolipidoza, homocistinurija, Lesh-Nyhanov sindrom.) • Opisati genetske motnje paradontalnih struktur • Opisati in razlikovati cepitev ustnic, čeljusti in neba. • Razlikovati sindrome (Rovinovo zaporedje, sindrom EEC, Vander-Woudeov sindrom). • Razlikovati kombinacije, pri katerih se srečujemo s sindromi z orodentalnimi anomalijami. • Opisati pregled in oceno kraniofacialne regije pri kraniofacialni dismorfijah. • Razlikovati metode v genetiki (družinska analiza, populacijske študije, dvojčki, kromosomi, dermatoglifi). • Opraviti genetsko svetovanje v dentalni medicini.	Knowledge and understanding: • describe the history and significance of orofacial genetics • define malformations of hereditary etiology • define syndromes • define syndromes with orodental anomalies • describe epidemiology of craniofacial malformations • distinguish the frequency of genetic diseases in the population • describe the dysmorphy of craniofacial structures (minor and major anomalies) • distinguish genetic anomalies of the teeth: anomalies of the number, shape, size and structure of the teeth. • describe and differentiate the symptomatology of the growth disorders in orofacial region • describe and distinguish symptomatology in the most common syndromes with manifestations in the orofacial region • describe the most frequent chromosomal syndromes that affect theoretic structures (Down, fragile X, Klinefelter, Turner syndrome). • describe ectodermal dysplasia (classification, diagnosis and detection of heterozygous) • describe the metabolic disorders of the craniofacial structure (mucopolysaccharidosis, mucillipidosis, homocystinuria, Lesch-Nyhan syndrome) • describe genetic disorders of periodontal structures • describe and distinguish differences between the cleft lips and the palate. • distinguish syndromes (Robins sequence, EEC syndrome, Vander-Woude syndrome) • distinguish combinations that is encountered with orodental anomalies • describe the examination and evaluation of the craniofacial region in craniofacial dysmorphia • distinguish methods in genetics (family analysis, population studies, twins, chromosomes, dermatoglyphs) • perform counseling in dental medicine

Metode poučevanja in učenja:	Learning and teaching methods:
Predavanja Seminarji	Lectures Seminars

Načini ocenjevanja:	Delež (v %) / Weight (in %)	Assessment:
Način (pisni izpit, ustno izpraševanje, naloge, projekt):		Type (examination, oral, coursework, project):
Pisni izpit	**100 %**	**Written exam**

Reference nosilca / Lecturer's references:

-Bakarčić D, Vlah N, Cicvarić O, Petrović D, Šimunović-Erpušina M, Janković S, Dragaš Zubalj N, Kresina S, Mohorić S, Gržić R, et al. An Oral Health Promotion Model Implemented in the Primorje-Gorski Kotar County. *Medicina*. 2025; 61(2):217.

-Ivančić Jokic N, Matičić L, Šimunović Erpušina M, Petrović D, Cicvarić O, Bakarčić D. Dental Anxiety Among Students of the University of Rijeka, CroatiaActa stomatol Croat. 2024;58(2):177-184. DOI: 10.15644/asc58/2/7

-Petrovic D. Cicvaric O. Šimunovic-Erpušina M. Ivancic Jokic N. Bakarcic D. Bucevic Sojcic P. Juric H. The Role of Family Factors in the Development of Dental Anxiety in Children. Medicina 2024, 60, 180.https://doi.org/10.3390/medicina60010180

-Cicvaric O, Grzic R, Siminovic Erpusina M, Ivancic Jokic N, Bakarcic D. Association of masticatory efciency with deep carious lesions in children. European Archives of Paediatric Dentistry

-Cicvarić O, Gržić R, Šimunović-Erpušina M, Simonić-Kocijan S, Bakarčić D, Ivančić Jokić N. Association of Masticatory Efficiency and Reduced Number of Antagonistic Contacts Due to Extraction, Changing Dentition or Malocclusion in Children. Dent. J. 2023, 11, 64.