



Univerza v Mariboru

Medicinska fakulteta

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta:	Biomehanika z osteologijo in osteosintezo							
Course title:	Biomechanics, Osteology, Osteosynthesis							
Študijski program in stopnja Study programme and cycle	Študijska smer Study option			Letnik Year of study	Semester Semester			
Biomedicinska tehnologija/3. stopnja				2	3 ali 4			
Biomedical Technology/3rd Degree								
Vrsta predmeta (obvezni ali izbirni) / Course type (compulsory or elective)				Izbirni Elective				
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
15	20	10					135	6
		AV	LV	RV				
Nosilec predmeta / Course coordinator:				dr. Andrej Čretnik*				
Jeziki /Languages:		Predavanja / Lectures:		Slovenščina/Slovene				
		Vaje / Tutorial:		Slovenščina/Slovene				
Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti:				Prerequisites for enrolling in the course or for performing study obligations:				
Vsebina (kratek pregled učnega načrta):				Content (syllabus outline):				
Osteologija (embriologija, histologija, patološka anatomija), zlomi kosti (mehanizem, matematični modeli, Nevittov faktor krhkosti, kostna kvantiteta, kostna kvaliteta), celjenje kostnega zloma (primarno, sekundarno) Osteosinteza (zgodovina, materiali, ektrafokalna, intramedularna, ekstramedularna, zunanji fiksator prve, druge in tretje generacije, unilateralni, prostorski).				Osteology (embryology, histology, pathological anatomy), bone fractures (mechanism, mathematical models, Nevitt's fragility factor, bone quantity, bone quality), Bone fracture healing process (primary, secondary) Osteosynthesis (history, materials, extrafocal, intramedullary, extramedullary, external fixators of the 1st, 2nd, 3rd generation, unilateral, 3-dimensional).				
Temeljni literatura in viri / Reading materials:								
– Buckley RE, Moran CG, Apivotthakakul T. AO Principles of fracture Management, 3rd ed., New York: Thieme; 2018. https://d368h3i68ww1zu.cloudfront.net/thieme_publishers/188201/viewinside/157881/images/20190107084102/3.jpg – Miller MD, Thompson S. Miller's Review of Orthopaedics, 7th ed. Philadelphia: Elsevier; 2016. – Stannard JP, Schmidt AH. Surgical Treatment of Orthopaedic Trauma, Stuttgart, New York, Delhi, Rio: Thieme; 2016.								

– Brinker MR. Review of Orthopaedic Trauma. 2nd ed., Philadelphia, Lippincott, 2013.		
Cilji in kompetence:		Objectives and competences:
Razumevanje principov nastanka, diagnostike in zdravljenja zlomov, kostna komponenta, komponenta osteosintetskega materiala		Understanding of rationale mechanisms, diagnosis and treatment of bone fractures with bone and osteosynthetic material component.
Predvideni študijski rezultati:		Intended learning outcomes:
Znanje in razumevanje: osteologije, vzrokov za nastanek zloma, načinov zdravljenja z uporabo materialov in tehnologije, specifični vplivi kostne kvantitete in kostne kakovosti na nastanek in zdravljenje zloma.		Knowledge and understanding: of osteology, fracture mechanisms, way of treatment with different materials and technologies, specific influence of bone quantity and bone quality.
Prenosljive/ključne spretnosti in drugi atributi: laboratorijske vaje osteosinteze s ploščo in vijaki, z zunanjim fiksatorjem, z endomedularnim žeblijem		Transferable/key competences and other abilities: practical exercises with plate and screws, with external devices, with endomedullary nail
Metode poučevanja in učenja:		Learning and teaching methods:
Predavanja Seminarji (seminarske obravnave) Vaje (laboratorijske vaje – kirurški praktikum) Samostojno delo		Lectures Seminars Tutorial (practical exercises) Individual work
Načini ocenjevanja:	Delež (v %) / Share (in %)	Assessment methods:
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Method (written or oral exam, coursework, project):
Pisni seminar / izpit	50 %	Written seminar / examination test
Ustna predstavitev	50 %	Oral presentation
Reference nosilca / Course coordinator's references:		
FEKONJA, Anita, ZUPANČIČ HARTNER, Tjaša, ČRETNIK, Andrej. Mandibular retrognathia correction using a fixed sagittal guidance appliance individually manufactured by selective laser melting manufacturing technology. Rapid prototyping journal, ISSN 1758-7670, 2018, vol. 24, issue 2, str. 416-423, ilustr. https://www.emeraldinsight.com/eprint/YGJU9TTN4CPRZ4V97ZDM/full , https://doi.org/10.1108/RPJ-10-2016-0163 , doi: 10.1108/RPJ-10-2016-0163. [COBISS.SI-ID 6318911], [JCR, SNIP, WoS do 9. 6. 2019: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 29. 8. 2019: št. citatov (TC): 1, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0] kategorija: 1A2 (Z, A1/2); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICM točke: 33.06, št. avtorjev: 3		
BAKOTA, Bore, ČRETNIK, Andrej. Advances in trauma and reconstructive surgery in Croatia despite the covid-19 pandemic. Injury, ISSN 1879-0267, 2021, vol. 52, suppl. 5, str. S1-S2. https://doi.org/10.1016/j.injury.2021.08.021 , https://www.sciencedirect.com/science/article/pii/S0020138321007221?via%3Dihub , doi: 10.1016/j.injury.2021.08.021. [COBISS.SI-ID 79373315], [JCR, SNIP, WoS do 7. 10. 2021: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 7. 10. 2021: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0] kategorija: 1A2 (Z, A1/2); uvrstitev: SCI, Scopus, MBP; tip dela še ni verificiran kategorija: 1A2 (Z, A1/2); uvrstitev: SCI, Scopus, MBP; tip dela še ni verificiran točke: 44.66, št. avtorjev: 2		
KAFTANDZIEV, Igor, BAKOTA, Bore, TRPESKI, Simon, ARSOVSKI, Oliver, SPASOV, Marko, ČRETNIK, Andrej. The effect of the ankle syndesmosis reduction quality on the short-term functional outcome following ankle		



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fractures. Injury, ISSN 1879-0267, 2021, vol. , issue , [v tisku][str. 1-5], ilustr.
<https://www.sciencedirect.com/science/article/pii/S0020138321003569?via%3Dihub>, doi:
10.1016/j.injury.2021.04.047. [COBISS.SI-ID 63598595], [JCR, SNIP] kategorija: 1A2 (Z, A1/2); uvrstitev: SCI,
Scopus, MBP; tip dela še ni verificiran točke: 15,7, št. avtorjev: 6