

UČNI NAČRT PREDMETA / COURSE SYLLABUS								
Ime predmeta:		Mehanizmi in biomehanika poškodb						
Course title:		Mechanisms and Biomechanics of Injury in Trauma						
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:				Izr. prof. dr. Andrej Čretnik				
Jeziki /Languages:		Predavanja / Lectures:		Slovenski/Slovenian				
		Vaje / Tutorial:		Slovenski/Slovenian				
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):				
<p>Predmet pokaže kako obravnava mehanizma in biomehanike poškodb lahko pomaga pri triaži in optimiziranju oskrbe poškodovanca. Predstavljen bo pregled biomehanike in odnosa med različnimi mehanizmi poškodb in kliničnimi vzorci poškodb in kako razumevanje le tega izboljša odkrivanje poškodb in komplikacij. Predmet predstavi aktualne ocenjevalne lestvice za poškodbe in uporabo istih.</p> <p>Predmet obsega:</p> <ol style="list-style-type: none"> Mehanizmi poškodb in triaža Mehanizmi poškodb in vzorci poškodb <ol style="list-style-type: none"> Biomehanika topih poškodb Mehanizmi poškodb pri prometnih nesrečah (vozilo, kolesar, motorist, pešec) Mehanizmi poškodb pri padcih 				<p>The subject reviews how consideration of the mechanism of injury can assist in making triage decisions in order to optimize care and to determine the disposition of the trauma patient. The biomechanics of trauma will be reviewed. Examination will also be made of the relationship between various mechanisms of injury and clinical injury patterns in order to improve detection of injuries and anticipation of complications. The subject will be explain trauma scores and application in the work.</p> <p>The subject content:</p> <ol style="list-style-type: none"> Mechanism of injury and triage decisions Patterns of injury and mechanism of injury <ol style="list-style-type: none"> Biomechanics of Blunt Trauma 				

<p>d) Biomehanika in mehanizmi penetratnih poškodb (vbodne in strelne poškodbe)</p> <p>e) Eksplozivne poškodbe</p> <p>f) Termalne poškodbe</p> <p>3. Ocenjevalne (točkovne) lestvice v travmi</p>	<p>b) Mechanisms of injury of traffic accidents (motor vehicle crashes, motorcycle and bicycle crashes, pedestrian)</p> <p>c) Mechanism of injury of falls</p> <p>d) Biomechanics and mechanisms of penetrating trauma (stab and gunshot wounds)</p> <p>e) Explosion injury</p> <p>f) Thermal injury</p> <p>3. Trauma scoring</p>
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Temeljni literatura in viri / Reading materials:

American College of Surgeons, Committee on Trauma. Advanced Trauma Life Support for Doctors, Student Course Manual, 10th Edition. Chicago: American College of Surgeons, 2018.

Mattox KL, Felicano DV, Moore EE eds. Trauma, 8th Edition, New York, McGraw-Hill, 2017. ISBN-13: 978-1259860676

Vincent, Jean Louis (ur.), et al. *Textbook of critical care*. 7th ed. Philadelphia: Elsevier. 2017.

Brinker MR. Review of Orthopaedic Trauma. 2nd ed., Philadelphia, Lippincott, 2013.

Smernice za delovanje sistema nujne medicinske pomoči ob množičnih nesrečah. Eds. Dujić D, Simčič B. Ljubljana: MZ; 2013. http://www.mz.gov.si/fileadmin/mz.gov.si/pageuploads/kakovost/NMP_2013/mnozicne_nesrece/Smernice_NMP_mnozicne_tisk_2.pdf

Cilji in kompetence:	Objectives and competences:
Uporaba načel biomehanike in mehanizmov poškodb pri delu z poškodovanci pri triaži kar prispeva izboljšanju predbolnišnične in bolnišnične oskrbe poškodovanca. Seznanjenost z obstoječimi točkovnimi- ocenjevalnimi lestvicami poškodb in kvalitetna uporaba le teh pri kvalitetni oskrbi poškodovanca. Epidemiološko raziskovanje poškodb in zbiranje podatkov. Nadzor nad poškodbo z zmanjšanjem umrljivosti, zbolewnosti in invalidnosti.	The application of principles of biomechanics and mechanisms of injury in work in trauma. The history of the traumatic event and the physical observations of the trauma scene by healthcare personnel may provide important information in the prehospital and hospital phases of patient care. Overview of existing trauma –scoring systems and state-of-art trauma scoring systems used for quality assessment. Injury epidemiology. Injury control with reduce injury mortality, morbidity and disability.
Predvideni študijski rezultati:	Intended learning outcomes:
Znanje in razumevanje: Uporaba mehanizmov, biomehanike poškodb in ocenjevalnih lestvic za hitro in uspešno triažo več poškodovanih, ocenjevanje stopnje prizadetosti in rizika resnih poškodb, spremljanje stanja poškodovanca in predvidevanje razpleta. Uporaba protokolov in sodelovanje pri zbiranju epidemioloških podatkov poškodovancev.	Knowledge and understanding: Application of mechanisms, biomechanics and trauma-scoring systems for immediately triage and they become an essential tool in trauma care management where they have been applied in examination of injury and the risk of serious injury, outcome evaluation, quality assessment, and resource allocatio. Using of protocols and collecting of data for trauma epidemiology.
Prenosljive/ključne spretnosti in drugi atributi: Monitoring, tehnike proste venske poti, endotrahealna intubacija, kapnografija, odčitavanje EKG-a, uporaba medikamentov v urgentnih situacijah(volumna resuscitacija, inotropi, vazoaktivna terapija) hitra sekvenčna intubacija, tehnike predihavanja, torakalna drenaža, perikardiocenteza, osnove imobilizacije, uporaba točkovnih lestvic. Reševanje scenarija po načelu PBL (problem basic learning)	Transferable/key competences and other abilities: Monitoring, intravenous access, endotracheal intubation, capnography, electrocardiography and cardiac monitoring, drugs in emergencies (volume resuscitations, inothropes, vasopressors), rapid sequence intubation, ventilatory management, chest tube insertion, pericardiocentesis, fundamentals of immobilisation, applications of soring-systems in trauma. PBL scenarios.

Metode poučevanja in učenja:		Learning and teaching methods:
Predavanja Seminarji Vaje (Simulacijski center, samostojno projektno seminarsko delo izbranih poglavji, PBL, ogled in delo na instrumentih) Samostojno delo		Lectures Seminars Tutorial (laboratory work in Centre of simulation, project seminar, PBL, observation and work with instruments) Individual work
Načini ocenjevanja:	Delež (v %) / Share (in %)	Assessment methods:
Način (pisni izpit, ustno izpraševanje, naloge, projekt) Projektna seminarska naloga z javno predstavitvijo Ustni izpit	 50 % 50 %	Method (written or oral exam, coursework, project): Project seminar – coursework with public demonstration Oral examination
Reference nosilca / Course coordinator's references:		
<p>"KOŠIR, Roman, ČRETNIK, Andrej. Extremity compartment syndromes. V: VINCENT, Jean Louis (ur.), et al. Textbook of critical care. 7th ed. Philadelphia: Elsevier. 2017, str. 1147-1156, ilustr. https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780323376389001686. [COBISS.SI-ID 5952575] kategorija: 3NK (S) (nova izdaja); tip dela je verificiral OSICM točke: 1.25, št. avtorjev: 2"</p> <p>FEKONJA, Anita, ČRETNIK, Andrej, TAKAČ, Iztok. Hypodontia prevalence and pattern in women with epithelial ovarian cancer. The Angle orthodontist, ISSN 0003-3219, 2014, vol. 84, no. 5, str. 810-814. http://www.angle.org/doi/pdf/10.2319/112813-876.1, doi: 10.2319/112813-876.1.</p> <p>"ČRETNIK, Andrej, KOSANOVIĆ, Miloš, KOŠIR, Roman. Long-term results with the use of modified percutaneous repair of the ruptured Achilles tendon under local anaesthesia : (15-year analysis with 270 cases). The journal of foot and ankle surgery, ISSN 1542-2224, Sep. 2019, vol. 58, iss. 5, str. 828-836, ilustr. https://www.sciencedirect.com/science/article/pii/S1067251618305246?via%3Dihub, doi: 10.1053/j.jfas.2018.11.029. [COBISS.SI-ID 6774079], [JCR, SNIP, WoS do 27. 9. 2019: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0, Scopus do 27. 9. 2019: št. citatov (TC): 0, čistih citatov (CI): 0, čistih citatov na avtorja (CIAu): 0] kategorija: 1A4 (Z); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICM točke: 19.72, št. avtorjev: 3"</p>		