Univerza v Mariboru
Medicinska fakulteta

UČNI NAČRT PREDMETA / COURSE SYLLABUS			
Ime predmeta:	**Izbrana poglavja iz urgentne medicine**		
Course title:	**Chosen Chapters from Emergency Medicine**		
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	**30**	**SV**	**LV**	**RV**			**135**	**6**

Nosilec predmeta / Course coordinator:	Izr. prof. dr. Matej Strnad

Jeziki /Languages:	**Predavanja / Lectures:**	Slovenščina/Slovene
	Vaje / Tutorial:	-

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):**
Vsebina študijskega predmeta »Izbrana poglavja iz urgentne medicine« zajema proučevanje novih metodologij za diagnostiko, spremljanje in zdravljenje najpogostejših patoloških stanj v urgentni medicini. Predmet zajema tudi proučevanje znanj in novih metodologij obposteljnega (»point-of-care«) ultrazvoka (UZ) za diagnostiko in spremljanje zdravljenja (»monitoring«) izbranih bolezenskih entitet s področja urgentne medicine. V okviru predmeta bodo slušatelji, poleg preučevanja tehnik, indikacij in omejitve ter interpretacij dobljenih rezultatov, preučevali tudi umeščenost obposteljne ultrazvočne diagnostike v proces obravnave kritično obolelega pacienta (princip »z obposteljnim ultrazvokom« podprtega diagnostično-terapevtskega odločanja).	The contents of the study programme »Chosen chapters from emergency medicine« comprise the studying of new methodologies for diagnosis, evaluation and monitoring of treatment of most common disease entities in/from the field of emergency medicine. The students will study various ultrasound (US) technics, indications and limitations of point-of-care ultrasound, interpret point-of-care ultrasound findings as well as research the importance of point-of-care ultrasound in management of critically ill patients (principle of point-of-care ultrasound enhanced diagnostic processes and therapeutic decision-making). The study will represent a connection between clinical work, clinical scientific research and new

Študij bo predstavljal povezavo med kliničnim delom, kliničnim znanstvenim raziskovanjem ter novimi spoznanji sodobnih diagnostičnih preiskav in zdravljenja.Poudarek bo predvsem na naslednjih področjih urgentne medicine: •dispečerski sistem •oživljanje (reanimacija) •srčno žilne bolezni •bolezni pljuč •bolezni centralnega živčnega sistema •akutni abdomen •poškodbe •sepsa • UZ pri motnjah zavesti (transkranialni ultrazvok, ultrazvočno določanje intrakranialnega tlaka, ocena zeničnih reakcij), • UZ dihalne poti, • UZ pri dispnoičnem bolniku in bolniku s prsno bolečino (ultrazvok stene prsnega koša, ultrazvok pljuč, usmerjena ehokardiografija, ultrazvok globokega venskega sistema), • UZ pri bolniku z bolečino v trebuhu (usmerjeni ultrazvok žolčnika, ledvic, črevesnih vijug in slepiča, prisotnost proste tekočine), • UZ pri nediferenciranem šokiranem bolniku (ultrazvočni protokol RUSH) • UZ pri kritično prizadetem poškodovancu (ultrazvočni protokoli FAST, E-FAST in FAST-ER).	knowledge acquired by modern diagnostic investigation and treatment. The stress will be above all on the following fields of emergency medicine: • dispatch system • resuscitation • cardio vascular diseases • lung diseases • central nervous system diseases • acute abdomen • trauma • sepsis • US in altered mental status and head trauma patients (transcranial ultrasound, evaluation of intracranial pressure with ultrasound, evaluation of pupil reactions), • US of airway, • US in patients with acute dyspnoea and chest pain (ultrasound of thoracic wall, lung ultrasound, focused echocardiography, deep venous ultrasound), • US in patients with acute abdominal pain (focused ultrasound of gallbladder, kidneys, intestine and appendix, free fluid in abdomen), • US in undifferentiated patients in shock (RUSH protocol) • US in patients with life threatening injuries (FAST, E-FAST, FAST-ER protocols).

Temeljni literatura in viri / Reading materials:

- Tintinalli JE, Kelen GD, Stapczynski JS. Emergency medicine – A comprehensive study guide – 7th ed. , Mcgraw-Hill, New York 2011.
- Marx JA, Hockberger RS, Walls RM. Rosen's Emergency Medcine: concpets and clinical practice, 8th ed., Philadelphia, Mosby-Elsevier, 2014.
- American college of surgeons. Advanced trauma life support. 9th ed. American College of Surgeons, Chicago, 2012.
- Monsieurs KG, Nolan JP, Bossaert LL et al. European resuscitation council guidelines for resuscitation 2015. Section 1. Executive summary. Resuscitation 2015 (95):1-80.
- Perkins GD, Handley AJ, Koster RW et al. European resuscitation council guidelines for resuscitation 2015. Section 2. Adult basic life support and automated external defibrillation. Resuscitation 2015 (95): 81-99.
- Soar J, Nolan JP, Böttiger BW et al. European resuscitation council guidelines for resuscitation 2015. Section Adult advanced life support. Resusciattion 2015 (95): 100-147.
- Noble VE, Nelson B. Manual of emergency and critical care ultrasound. 2nd ed. Cambridge: Cambridge University Press 2011.
- Ma JO, Mateer JR, Reardon RF, Joing SA. Ma and Mateer's Emergency Ultrasound. 3th ed. McGraw Hill 2014.
- De Backer D, Cholley BP, Slama M, Vieillard Baron A, Vignon P. Hemodynamic monitoring using echocardiography in the critically ill. Springer Verlag 2011.

– Lichtenstein DA. General ultrasound in the critically ill. Springer Verlag 2007.

Cilji in kompetence:	**Objectives and competences:**
Namen predmeta »Izbrana poglavja v urgentni medicini« je pridobiti širše znanje in razumevanje patofiziologije iz posameznih področij urgentne medicine, razumevanje in kritično vrednotenje obposteljne ultrazvočne diagnostike v procesu obravnave kritično obolelega; kritično vrednotenje ter možnost prenosa v klinično prakso novih obposteljnih ultrazvočnih aplikacij (transkranialni ultrazvok, ultrazvočno merjenje IKT, okularni ultrazvok, ultrazvok dihalnih poti, ultrazvočni protokoli za obravnavo nediferenciranih bolnikov); razumevanje tehnik, indikacij, omejitev in interpretacij dobljenih rezultatov obposteljne ultrazvočne preiskave. Zato je cilj uvajanje novih ter izboljševanje obstoječih diagnostičnih ter terapevtskih postopkov ter njihov prenos v vsakdanjo klinično prakso.	The objective of the study »Chosen chapters from emergency medicine« is to acquire knowledge and comprehension of pathophysiology from specific fields of emergency medicine; comprehension and evaluation of point-of-care ultrasound diagnostics in management of critically ill patients; applicability evaluation and transfer of new point-of-care ultrasound applications into clinical praxis (transcranial ultrasound, evaluation of intracranial pressure with ultrasound, ocular ultrasound, airway ultrasound, ultrasound protocols for undifferentiated patients); comprehension of technics, indications, limitations and interpretations of point-of-care ultrasound findings. Therefore, the objective will be the introduction of new and improvement of contemporary diagnostic and therapeutic procedures and their transfer into everyday clinical practice.
Predvideni študijski rezultati:	**Intended learning outcomes:**
Znanje in razumevanje: Osvojitev novih znanj s posameznih področij urgentne medicine in njihovo razumevaje, ki jih bo mogoče neposredno koristiti v procesu zdravljenja in spremljanja bolezni. Osvojitev novih znanj s področja ultrazvoka v urgentni medicini ter njihovo razumevaje, ki jih bo mogoče neposredno koristiti v procesu zdravljenja in spremljanja kritično obolelih. Ključne veščine ultrazvoka v urgentni medicini.	**Knowledge and understanding:** Acquired new knowledge from specific fields in emergency medicine, which can be applied directly in the processes of treatment and monitoring of critically ill patients. Acquired new knowledge in the field of ultrasound in emergency medicine, which can be applied directly in the processes of treatment and following of critically ill patients. Key skills in emergency medicine ultrasound.
Prenosljive/ključne spretnosti in drugi atributi: Odvisno od raziskovalnega področja in samega raziskovalnega projekta.	**Transferable/key competences and other abilities:** Depends on the research field and on the research project.
Metode poučevanja in učenja:	**Learning and teaching methods:**
Predavanja Seminarji (seminarske vaje) Samostojno delo	Lectures Seminars (tutorials) Individual work

Načini ocenjevanja:	**Delež (v %) / Share (in %)**	**Assessment methods:**
Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Method (written or oral exam, coursework, project):
Ustno izpraševanje Seminarska naloga	**50 %** **50 %**	Oral examination Coursework

Reference nosilca / Course coordinator's references:

STRNAD, Matej, PROSEN, Gregor, BOROVNIK LESJAK, Vesna. Bedside lung ultrasound for monitoring the effectiveness of prehospital treatment with continuous positive airway pressure in acute decompensated heart failure. European journal of emergency medicine, ISSN 1473-5695, 2016, vol. 23, iss. 1, str. 50-55. http://journals.lww.com/euro-emergencymed/Abstract/2016/02000/Bedside_lung_ultrasound_for_monitoring_the.11.aspx, doi: 10.1097/MEJ.0000000000000205. [COBISS.SI-ID 512583224], [JCR, SNIP, WoS do 14. 7. 2019: št. citatov (TC): 16, čistih citatov (CI): 16, čistih citatov na avtorja (CIAu): 5.33, Scopus do 29. 5. 2019: št. citatov (TC): 15, čistih citatov (CI): 15, čistih citatov na avtorja (CIAu): 5.00] kategorija: 1A2 (Z, A1/2); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICM točke: 33.2, št. avtorjev: 3

STRNAD, Matej, BOROVNIK LESJAK, Vesna, VUJANOVIĆ, Vitka, KRIŽMARIĆ, Miljenko. Predictors of mortality in patients with isolated severe traumatic brain injury. Wiener klinische Wochenschrift, ISSN 1613-7671. [Online ed.], 2017, vol. 129, iss. 3, str. 110-114. https://link.springer.com/article/10.1007%2Fs00508-016-0974-0, doi: 10.1007/s00508-016-0974-0. [COBISS.SI-ID 512595256], [JCR, SNIP, WoS do 15. 9. 2019: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 0.75, Scopus do 29. 8. 2019: št. citatov (TC): 3, čistih citatov (CI): 3, čistih citatov na avtorja (CIAu): 0.75] kategorija: 1A3 (Z); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICM točke: 16.48, št. avtorjev: 4

BOROVNIK LESJAK, Vesna, ŠORGO, Andrej, STRNAD, Matej. Development, validation and assessment of the test on knowledge about basic life support and use of automated external defibrillator among schoolchildren. Scandinavian journal of trauma, resuscitation and emergency medicine, ISSN 1757-7241, 2019, vol. 27, art. no. 117, str. 1-7. https://sjtrem.biomedcentral.com/articles/10.1186/s13049-019-0683-6. [COBISS.SI-ID 25017352], [JCR, SNIP] kategorija: 1A1 (Z, A', A1/2); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICD točke: 33.33, št. avtorjev: 3