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| **Regulacija protoka krvi** |  |
| **Kod** | MFMI… | Godina studija | 2, 3, 4. |
| **Nositelj/i predmeta** | Prof. dr. Zoran Valić | Bodovna vrijednost (ECTS) |      2 |
| Suradnici | Prof. dr. Darko Modun, Doc. dr. Ivana Mudnić, Doc. dr. Ante Obad | Način izvođenja nastave (broj sati u semestru) | P | S | V | T |  |
| 5 | 16 | 4 | 25 |
| Status predmeta |      Izborni | Postotak primjene e-učenja  |      0 |
| **OPIS PREDMETA** |
| Ciljevi predmeta | Razumijevanje fizioloških mehanizama odgovornih za regulaciju protoka krvi. |
| Uvjeti za upis predmeta i ulazne kompetencije potrebne za predmet | Odslušan predmet Fiziologija. |
| Očekivani ishodi učenja na razini predmeta (4-10 ishoda učenja)  | Identificirati, opisati i objasniti najvažnije funkcionalne značajke neuromuskularnog i kardiovaskularnog sustava.Opisati, raščlaniti i raspraviti kontrolne mehanizme neophodne za regulaciju protoka krvi.Nabrojati i raspraviti promjene koje nastaju u kontroli protoka krvi ukoliko dođe do otklona vrijednosti parametara unutar i izvan fizioloških granica.Kritički prosuđivati nastavne materijale, sudjelovati u argumentiranoj raspravi i iznositi mišljenje.Primijeniti pravila iz teoretske nastave u rješavanju konkretnih problemskih zadataka.Izvesti i vježbati mjerenje protokom posredovane vazodilatacije, te protumačiti dobivene rezultate. |
| Sadržaj predmeta detaljno razrađen prema satnici nastave  | Predavanja:P1 (1): Cirkulacija i srčani minutni volumen.P2 (1): Autonomni živčani sustav.P3 (2): Uloga endotela u kontroli protoka krvi.Seminari:S1 (3): Uloga autonomnog živčanog sustava u kontroli protoka krvi.S2 (3): Uloga preljeva acetilkolina u kontroli protoka krvi.S3 (5): Uloga mišićne crpke u kontroli protoka krvi.S4 (5): Uloga oslobođenih metabolita u kontroli protoka krvi. Uloga mehaničkih čimbenika.Vježba:V1 (4): Protokom posredovana dilatacija. |
| Vrste izvođenja nastave: | ☒ predavanja☒ seminari i radionice ☒ vježbe ☐ *on line* u cijelosti☐ mješovito e-učenje☐ terenska nastava | ☐ samostalni zadaci ☐ multimedija ☐ laboratorij☐mentorski rad☐       (ostalo upisati) |
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| Obveze studenata | Nazočnost na nastavi 80% predavanja, 90% seminari i 100% vježbe |
| Praćenje rada studenata *(upisati udio u ECTS bodovima za svaku aktivnost tako da ukupni broj ECTS bodova odgovara bodovnoj vrijednosti predmeta):* | Pohađanje nastave |       |  |       |  |       |
| Seminarski rad |       |  |       |       (Ostalo upisati) |       |
| Pismeni ispit |       |  |       |       (Ostalo upisati) |       |
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|  |       |  |       |       (Ostalo upisati) |       |
| Ocjenjivanje i vrjednovanje rada studenata tijekom nastave i na završnom ispitu | Pisani ispit |
| Obvezna literatura (dostupna u knjižnici i putem ostalih medija) | **Naslov** | **Broj primjeraka u knjižnici** | **Dostupnost putem ostalih medija** |
| Guyton – Hall: Fiziologija, 13. izd., Medicinska naklada 2017.Izabrani članci o regulaciji protoka krviPrezentacije nastavnika |       |  |
| Dopunska literatura  |  |
| Načini praćenja kvalitete koji osiguravaju stjecanje utvrđenih ishoda učenja | -Analiza kvalitete nastave od strane studenata i nastavnika, -Analiza prolaznosti na ispitima, -Izvješća Povjerenstva za kontrolu provedbe nastave, -Izvaninstitucijska evaluacija (posjet timova za kontrolu kvalitete Nacionalne agencije za kontrolu kvalitete, uključenje u TEEP). |
| Ostalo (prema mišljenju predlagatelja) |       |

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| **NAME OF THE COURSE** |  |
| **Code** | MFMI… | Year of study | 2, 3, 4. |
| Course teacher | Prof. dr. Zoran Valić | Credits (ECTS) | 2 |
| Associate teachers | Prof. dr. Darko Modun, Doc. dr. Ivana Mudnić, Doc. dr. Ante Obad | Type of instruction (number of hours) | L | S | E | T |
| 5 | 16 | 4 | 25 |
| Status of the course | Elective | Percentage of application of e-learning | 0 |
| **COURSE DESCRIPTION** |
| Course goal | Understanding of physiological mechanisms responsible for blood flow regulation.  |
| Course enrolment requirements and entry competences required for the course | Attendance in Physiology course.  |
| Learning outcomes expected at the level of the course (4 to 10 learning outcomes) | Identify, define and describe most important functional characteristics od neuromuscular and cardiovascular systems. Describe, analyze and discuss control mechanisms necessary for blood flow regulation. List and discuss changes in blood flow that occur if physiological parameters are changed within and outside normal range. Express critical view of teaching materials, participate in positive discussion and express personal views. Apply rules from theoretical part of the course on problem solving.Participate in performing of the flow mediated practical and interpretation of obtained data.  |
| Course content broken down in detail by weekly class schedule (syllabus) | Lectures:L1 (1): Circulation and cardiac output.L2 (1): Autonomic nervous system.L3 (2): Role of endothelium in blood flow control.Seminars:S1 (3): Role of autonomic nervous system in blood flow control. S2 (3): Role of acetylcholine spillover in blood flow control.S3 (5): Role of muscle pump in blood flow control.S4 (5): Role of released metabolites in blood flow control. Role of mechanical factors.Exercise:E1 (4): Flow mediated dilation. |
| Format of instruction | ☒ lectures☒ seminars and workshops☒ exercises ☐ *on line* in entirety☐ partial e-learning☐ field work | ☐ independent assignments☐ multimedia ☐ laboratory☐ work with mentor☐       (other) |
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| Student responsibilities | In accordance to Rules of studying and Deontological code for USSM students. |
| Screening student work *(name the proportion of ECTS credits for each* *activity so that the total number of ECTS credits is equal to the ECTS value of the course)* | Class attendance |       | Research |       | Practical training |       |
| Experimental work |       | Report |       |       (Other) |       |
| Essay |       | Seminar essay |       |       (Other) |       |
| Tests |       | Oral exam |       |       (Other) |       |
| Written exam |       | Project |       |       (Other) |       |
| Grading and evaluating student work in class and at the final exam | Written exam. |
| Required literature (available in the library and via other media) | **Title** | **Number of copies in the library** | **Availability via other media** |
| Textbook of Medical Physiology, Guyton and Hall, 13.ed. |       |       |
| Selected articles on blood flow regulation. |       |       |
| Teacher’s presentations. |       |       |
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| Optional literature (at the time of submission of study programme proposal) |  |
| Quality assurance methods that ensure the acquisition of exit competences | * Teaching quality analysis by students and teachers
* Exam passing rate analysis
* Committee for control of teaching reports
* External evaluation
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| Other (as the proposer wishes to add) |       |