

**COLLEGE OF PROFESSIONAL STUDIES - INTERNATIONAL CENTER OF PROFESSIONAL
STUDIES**
(hereinafter: ICEPS)

Study program:

Undergraduate professional studies

PHYSIOTHERAPY

~ COURSE BOOK ~

Courses by semesters and years of study program Nursing, undergraduate professional studies

- **Marks for Form of Teaching:** **theor lect** = theoretical lectures; **exer** = theoretical exercises; **other** = other forms of teaching (individual work with students, project work...); **st-res pap** = study-research paper; **prof pract** = professional (clinical) practice (in the School's Teaching Bases)
- **Marks for Mandatory/Elective courses:** **m** = mandatory course; **e** = elective course
- **Marks for Type of Courses:** **ag** = academic-general education; **p** = professional; **pa** = professional-applicative

No	Course Code	Course Name	Sem.	Active Lessons				Prof pract	ECTS	Course m/e	Course Type
				theor lect	theor exer	other forms	st-res pap				
THE FIRST YEAR											
1	ft-01	Anatomy and Physiology	1	45	15	0	0	0	7	m	p
2	ft-04	Basics of Nursing	1	30	15	0	0	300	8	m	p
3	ft-06	Basics of Information and Communication Technologies	1	30	30	0	0	0	5	m	p
4	ft-07	Ethics in Health Care	1	30	30	0	0	0	5	m	ag
5	ft-izb-01	Elective Course 1	1	30	30	0	0	0	5	e	
5a	ft-izb-01-d	Business Communication Skills	1	30	30	0	0	0	5	e	pa
5b	ft-izb-01-b	Basics of Biochemistry	1	30	30	0	0	0	5	e	pa
5c	ft-izb-01-a	Geriatrics with Nursing in Geriatrics	1	30	30	0	0	0	5	e	p
5d	ft-izb-01-d	Radiology Physics and Basics of Radiology Work Methods	1	30	30	0	0	0	5	e	pa
5e	ft-izb-01-v	Specialized English for Medicine 1	1	30	30	0	0	0	5	e	ag
5f	ft-izb-01-g	Specialized German for Medicine 1	1	30	30	0	0	0	5	e	ag
6	ft-05	Hygiene with the Basics of Microbiology	2	30	30	0	0	330	5	m	p
7	ft-02	Biophysics with Biomechanics	2	15	45	0	0	0	3	m	pa
8	ft-08	Physical Factors in Therapy	2	15	15	0	0	150	6	m	p
9	ft-03	Physiotherapy Assessment	2	30	15	0	0	30	6	m	p
10	ft-09	Skills in Physiotherapy	2	30	45	0	0	30	5	m	pa
11	ft-izb-02	Elective Course 2	2	30	30	0	0	0	5	e	
11a	ft-izb-02-b	Marketing of Health Care Institutions	2	30	30	0	0	0	5	e	p
11b	ft-izb-02-a	Public Health	2	30	30	0	0	0	5	e	ag
11c	ft-izb-02-v	Health Care Education Methodology and Health Promotion	2	30	30	0	0	0	5	e	p
11d	ft-izb-02-g	Organization of Health Care Systems	2	30	30	0	0	0	5	e	ag
11e	ft-izb-02-d	Somatopedy	2	30	30	0	0	0	5	e	pa
Total number of classes and ECTS per year:				315	300	0		840	60		
THE SECOND YEAR											
12	ft-12	Functional Anatomy	3	15	15	0	0	0	3	m	p
13	ft-13	Pathophysiology	3	45	30	0	0	0	6	m	p
14	ft-14	Basics of Internal medicine	3	45	15	0	0	0	5	m	p
15	ft-15	Basics of Pediatrics	3	30	15	0	0	0	5	m	pa
16	ft-17	Clinical Kinesiology	3	15	45	0	0	0	5	m	p
17	ft-21	First Aid	3	30	30	0	0	0	5	m	p
18	ft-izb-03	Elective Course 3	3	30	30	0	0	0	5	e	
18a	ft-izb-03-a	Dietary Issues and Nutrition of Inpatients	3	30	30	0	0	0	5	e	p
18b	ft-izb-03-v	Specialized English for Medicine 2	3	30	30	0	0	0	5	e	ag
18c	ft-izb-03-g	Specialized German for Medicine 2	3	30	30	0	0	0	5	e	ag
18d	ft-izb-03-d	Nutritionism	3	30	30	0	0	0	5	e	ag
18e	ft-izb-03-k	Medical Genetics and Molecular	3	30	30	0	0	0	5	e	p

		<u>Biology</u>									
19	ft-18	<u>Clinical Kinesitherapy</u>	4	30	30	0	0	300	6	m	pa
20	ft-20	<u>Physiotherapy in Internal Medicine</u>	4	15	15	0	0	150	4	m	pa
21	ft-19	<u>Physiotherapy in Pediatrics</u>	4	30	15	0	0	150	4	m	pa
22	ft-16	<u>Manual Therapy</u>	4	30	30	0	0	300	4	m	pa
23	ft-11	<u>Psychology in Nursing and Health Care</u>	4	15	30	0	0	0	3	m	p
24	ft-izb-04	Elective Course 4	4	30	30	0	0	0	5	e	
24a	ft-izb-04-a	<u>Diagnostically-Therapeutic Program</u>	4	30	30	0	0	0	5	e	pa
24b	ft-izb-04-d	<u>Pharmacology and Drug Dosing</u>	4	30	30	0	0	0	5	e	p
24c	ft-izb-04-v	<u>Allergology</u>	4	30	30	0	0	0	5	e	p
24d	ft-izb-04-d	<u>Rare Diseases</u>	4	30	30	0	0	0	5	e	p
24e	ft-izb-04-e	<u>Occupational Therapy</u>	4	30	30	0	0	0	5	e	pa
Total number of classes and ECTS per year:				360	330	0		900	60		
THE THIRD YEAR											
25	ft-22	<u>Basics of Surgery with Orthopedics</u>	5	30	15	0	0	0	10	m	pa
26	ft-23	<u>Basics of Neurology</u>	5	15	15	0	0	0	4	m	p
27	ft-27	<u>Basics of Rheumatology</u>	5	15	15	0	0	0	4	m	pa
28	ft-25	<u>Physiotherapy in Surgery with Orthopaedics</u>	5	30	45	0	0	300	3	m	pa
29	ft-24	<u>Medical Rehabilitation</u>	5	30	30	0	0	150	10	m	pa
30	ft-22	Elective Course 5	5	30	15	0	0	0	5	e	
30a	ft-izb-05-b	<u>Mental Hygiene</u>	5	30	30	0	0	0	5	e	pa
30b	ft-izb-05-g	<u>Business English</u>	5	30	30	0	0	0	5	e	ag
30c	ft-izb-05-v	<u>Business German</u>	5	30	30	0	0	0	5	e	ag
31	ft-30	<u>Sports Medicine</u>	6	30	30	0	0	0	5	m	pa
32	ft-26	<u>Physiotherapy in Neurology</u>	6	30	30	0	0	300	3	m	p
33	ft-28	<u>Physiotherapy in Rheumatology</u>	6	15	15	0	0	300	3	m	p
34	ft-31	<u>Balneotherapy</u>	6	15	15	0	0	0	3	m	p
35	ft-29	<u>Health Care and Social-Security Legislation</u>	6	30	30	0	0	0	5	m	ag
36	ft-izb-06	Elective Course 6	6	30	30	0	0	0	5	e	
36a	ft-izb-06-g	<u>Research Methodology</u>	6	30	30	0	0	0	5	e	p
36b	ft-izb-06-v	<u>Quality Control</u>	6	30	30	0	0	0	5	e	p
36c	ft-izb-06-d	<u>Basics of Integrative Medicine</u>	6	30	30	0	0	0	5	e	p
36d	ft-izb-06-b	<u>Sports Activities of Persons with Disabilities</u>	6	30	30	0	0	0	5	e	ag
36e	ft-izb-06-c	<u>Protetics and Orthotics</u>	6	30	30	0	0	0	5	e	pa
36f	ft-izb-06-d	<u>Human Resources Management in Health Care</u>	6	30	30	0	0	0	5	e	pa
Total number of classes and ECTS per year:				300	300	0		1.050	60		

Total number of classes and ECTS per all three years of studies:				1.905				2.790	180		
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COURSE CONTENT
(in alphabetical order as listed below)

Anatomy and Physiology
Allergology
Balneotherapy
Basics of Biochemistry
Basics of Information and Communication Technologies
Basics of Integrative Medicine
Basics of Internal medicine
Basics of Neurology
Basics of Nursing
Basics of Pediatrics
Basics of Rheumatology
Basics of Surgery with Orthopedics
Biophysics with Biomechanics
Business Communication Skills
Business English
Business German
Clinical Kinesiology
Clinical Kinesitherapy
Diagnostically-Therapeutic Program
Dietary Issues and Nutrition of Inpatients
Ethics in Health Care
First Aid
Functional Anatomy
Geriatrics with Nursing in Geriatrics
Health Care and Social-Security Legislation
Health Care Education Methodology and Health Promotion
Human Resources Management in Health Care
Hygiene with the Basics of Microbiology
Manual Therapy
Marketing of Health Care Institutions
Medical Genetics and Molecular Biology
Medical Rehabilitation
Mental Hygiene
Nutritionism
Occupational Therapy
Organization of Health Care Systems
Pathophysiology
Pharmacology and Drug Dosing
Physical Factors in Therapy
Physiotherapy Assessment
Physiotherapy in Internal Medicine
Physiotherapy in Neurology
Physiotherapy in Pediatrics
Physiotherapy in Rheumatology
Physiotherapy in Surgery with Orthopaedics
Protetics and Orthotics
Psychology in Nursing and Health Care
Public Health
Quality Control
Radiology Physics and Basics of Radiology Work Methods
Rare Diseases
Research Methodology
Skills in Physiotherapy
Somatopedy
Specialized English for Medicine 1
Specialized English for Medicine 2
Specialized German for Medicine 1
Specialized German for Medicine 2
Sports Activities of Persons with Disabilities
Sports Medicine

ALLERGOLOGY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Allergology				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, fourth semester				
ECTS: 5				
Requirement: no				
Course objective: The objective of the course is to familiarize students with and their understanding of the basic principles of allergology, their capability to use specialist literature relating to this field and to state their opinion in the field of allergology.				
Course outcome: The outcome of the course is the acquisition of fundamental knowlede in allergology, familiarizaiton with the basics of diagnostics in allergology and capability of students of taking measures in the prevention of allergic reactions or their elimination. The outcome of the course is also familiarization of students with basic pathological cases in the field of allergology and their capability to use specialist literature relating to this field.				
Course content: <i>Lectures</i> Objects, definition and tasks of allergology; respiratory allergy (rhinitis, rhinoconjunctivitis, asthma); drug allergy; poison allergy (wasps, bees); allergic contact dermatitis; food allergy; latex allergy; hives (urticaria); plant allergy; pollen allergy; anaphylaxis; application of allergy elimination techniques; skin testing for allergy; provocation test; desensitization; allergen specific immunotherapy. <i>Exercises</i> Types of allergies – case studies; applications of allergy elimination techniques – case studies; analysis of most frequent allergic reactions in Serbia; first aid measures, nursing in case of allergic reactions; searching e-literature and presentation of certain less known allergic reactions; renowned health-care and scientific institutions in Serbia in the field of allergology.				
Literature: <i>Literature in English:</i> 1. Wesley Burks A., Holgate S. T., O'Hehir R. E., Broide D. H., Bacharier L. B.: Middleton's allergy: principles and practice, Elsevier, Amserdam, 2020. <i>Literature in Serbian:</i> 2. Ljajević J., Ljajević M., Dimčić Radovanović Z. (ur.): Alergologija i klinička imunologija u Srbiji, Evropski centar za mir i razvoj, Beograd, 2005. 3. Ramić Z., Pravica V., Popadić D.: Priručnik za nastavu iz imunologije, Medicinski fakultet, Beograd, 2020. 4. Dadarno P. Dž., Vitni K.: Alergije, Sezam book, Beograd, 2020.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	30			
Colloquiums/exam	30			

ANATOMY AND PHYSIOLOGY

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Anatomy and Physiology
Language of instruction:	Serbian
Course status:	mandatory
Semester:	first year, first semester
ECTS:	7
Requirement:	segment Anatomy is a condition for segment Physiology
Course objective:	Acquisition of knowledge on organ and human body system morphology; familiarity with and understanding normal anatomical and histological structures and notions; acquisition of knowledge in area of cell, tissue, organ system and human organism physiology aimed at understanding the changed, pathological functioning and treatment possibilities; knowledge of and understanding the role of organ control mechanisms, as well as understanding connection between regulatory systems in human organism; provision of theoretical basis required for learning other courses.
Course outcome:	Capability of defining, describing, integrating and reproducing notions relating to normal anatomical and histological structures; upon the completion of the course and passing the exam students will have a command of the corresponding part of medical nomenclature, be able to explain functioning of individual organs and organ systems, will be familiar with and will understand integrated functions of individual organs and the role of organism control mechanisms and they will know and understand the connection of the regulatory system of human organism enabling its adaptation to changes in internal and external environment under everyday conditions.
Course content:	<i>Lectures</i> Basic anatomical terminology; body areas and parts; upper extremities; bones, joints, muscles, blood vessels and nerves; lower extremities; bones, ankles, muscles, blood vessels and nerves; rib cage; walls, division and content of the thoracic cavity; lungs and pulmonary pleurae; heart; mediastinum organs; abdomen; walls, division and content of abdominal cavity; peritoneum, peritoneal cavity (liver, stomach, spleen, pancreas, small intestine and large intestine); retroperitoneal space (kidney, adrenal gland, aorta, inferior vena cava, celiac plexus); pelvis; wall and content; urinary bladder, rectum, male and female reproductive system, pelvic diaphragm; head and neck; head and facial bones; head and neck muscles; head and neck large blood vessels and nerves; central nervous system. Human physiology study; transport through cell membrane; intercellular communication; excitation physiology; membrane potential of inactivity; action potential; nervous impulse transmission; skeletal muscle physiology; neuro muscular synapse; morphophysiological characteristics of skeletal muscles; smooth muscle physiology; characteristics of smooth muscle tissue structure, types, innervation, electrical activity of smooth muscles, specific features of contraction; central nervous system organization, nerve cell; hematoencephalic barrier, cerebrospinal fluid, composition and function; spinal cord; medulla oblongata; midbrain; functional characteristics; reticulo-cortical relations, decerebration rigidity and skeletal muscle tone; cerebellum, structure and function; diencephalon, hypothalamus, vegetative nervous system; basal ganglia; cerebral cortex; senses; definition, importance and general principles of sensory systems; sense of hearing and balance; sense of taste and smell; eyesight; pain perception; introductory notes in pathophysiology. <i>Exercises</i> Demonstration of all teaching units on anatomical dummies. Use of atlas; video presentations. Membrane potentials and synaptic transmission. Patellar reflex and pupillary reflex. Impact of different factors on muscular contraction. Haemoglobin, erythrocyte and leukocyte concentration in human blood. Plasma buffer solution capacity. Coagulation. Discussion and analysis of selected physiological systems.
Literature:	<i>Literature in English:</i> 1. Scanlon V., Sanders T.: Essentials of Anatomy and Physiology, Kindle Edition, London, 2018. 2. Drake L. R., Wayne Vogl A., Mitchell A. W. M., et al.: Gray's Anatomy for Students, textbook, Elsevier, New York, 2014. 3. Arroyo J. P.: Back to Basics in Physiology, textbook, Academic Press, London, 2013. 4. Netter F. H., Machado C. A. G.: Atlas of Human Anatomy & CD, ILS, Mala velika knjiga, Novi Sad, 2005. <i>Literature in Serbian:</i> 5. Stojić-Džunja Lj.: Anatomija za studente zdravstvene nege, udžbenik, Medicinski fakultet, Novi Sad, 2017. 6. Veličković D.: Fiziologija za studente farmacije, udžbenik, Medicinski fakultet, Niš, 2013. 7. Despopoulos A., Silbernagl S.: Fiziološki atlas u boji za studente medicine, Medicinski fakultet, Niš, 2007. 8. Mačvanin Đorđe: Anatomija, udžbenik, Fakultet za menadžment u sportu, Alfa univerzitet, Beograd, Matica srpska, Novi Sad, 2005. 9. Milisavljević M. i sar.: Klinička anatomija, udžbenik, Nauka, Beograd, 2004. 10. Guyton A.C., Hall J. E.: Medicinska fiziologija, 11. izdanje, Savremena administracija, Beograd, 2006. 11. Mujović i sar.: Medicinska fiziologija, udžbenik, Medicinski fakultet, Kosovska Mitrovica (Priština), 2008.

Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
45	15	0	0	0
Methods of teaching: lectures and practical exercises with anatomical and hystological devices, use of atlas, video projections, computer animations and simulations of physiological processes.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	20 (Anatomy) +20 (Physiology)	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	10 (Anatomy) 10 (Physiology)			
Colloquiums	15 (Anatomy) 15 (Physiology)			

BALNEOTHERAPY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Balneotherapy				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, sixth semester				
ECTS: 3				
Requirement: no				
Course objective: Familiarization of student with basics of balneology (mineral water, peloids, medicinal gases) and human bioclimatology (medical meteorology, medical climatology, biological rhythms), as well as with elementary regimes and therapeutic measures in balneo-climatotherapy).				
Course outcome: Acquisition of medical conscience and humane principles in the applications of natural bath resources, adoption of knowledge in bioclimatology from the aspect of impact on human health for preventive and therapeutic purposes, possession of knowledge how to apply mineral waters, peloids, medicinal gases in prevention and treatment; being trained to know how to make assessments and selection of patients for the application of balneological and climate resources.				
Course content: <i>Lectures</i> Basics of balneology (mineral water, peloids, medicinal gases): regimes and therapeutic measures in balneoclimatology treatment. Basic of human bioclimatology (medical meteorology – weather-pathology, measures of prevention of meteorotropism, medical climatology, climate factors, climatoprophylaxis, climatotherapy; biological rhythms – daily and annual). <i>Exercises</i> Preparation of mineral water, peloids, medicinal gases, familiarization with modern forms of treatment in baths. Use of questionnaires for evaluation of chronobiological types.				
Literature: <i>Literature in English:</i> 1. Russell J., Cohn R.: Balneotherapy, Book on Demand, New Jersey, 2012. <i>Literature in Serbian:</i> 2. Jovanović T., Janjić M., Popović G., Conić S.: Balneoklimatologija, udžbenik, Cibif, Beograd, 2005.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	15	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums/exam	30			

BASICS OF BIOCHEMISTRY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Biochemistry				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, first semester				
ECTS: 5				
Requirement: no				
Course objective: Student will acquire basic knowledge in biochemistry and understand the impact of biochemistry on other sciences, understand interrelationship between molecule structure and biological function, acquire knowledge on structure and function of cell membranes, understand enzyme action mechanism, acquire knowledge in basic metabolic pathways, acquire knowledge in intercellular signalling, understand reactions of biotransformations of exogenous and endogenous substances and acquire knowledge on nucleic acids and protein biosynthesis.				
Course outcome: Upon the successful completion of the course students are expected to be able to describe and analyse the course of principal catabolic, anabolic and common metabolic pathways, apply knowledge on enzyme kinetics and intercellular signalling in interpreting regulation of metabolic pathways in human organism, explain biochemical basis of protein synthesis, regulation and posttranslational modifications of proteins, as well as to successfully apply the acquired knowledge when attending classes and acquiring knowledge in medical biochemistry.				
Course content: <i>Lectures</i> Introduction; structure and mechanism of enzyme and coenzyme action, enzyme kinetics and inhibition; chemical composition of biological membranes and transport through membranes; basic principles of bioenergetics; carbohydrate catabolism; glycolysis; glycogenolysis; phosphogluconate pathway, catabolism of other hexoses; lipid catabolism: fatty acid oxidation, triglyceride, phospholipid, sphingolipid, cholesterol; nitrogen compound catabolic process, amino acids, urea, protein, nucleotide cycle; common metabolic pathways; citric acid cycle, respiratory chain and oxidative phosphorylation; carbohydrate anabolism: gluconeogenesis, glycogenesis; lipid anabolism; nitrogen compound anabolism; intercellular signalling: by G-protein-linked receptors, enzyme-linked receptors, ion channel receptors and nicotinic acetylcholine receptors; biotransformations: cytochrome P450, FM-monooxygenase systems; glucuronic acid conjugation; biotransformation of some exogenous and endogenous substances; biosynthesis of proteins and nucleic acids, replication, transcription, translation and posttranslational modifications of proteins in human organism. <i>Exercises</i> Repetition of the acquired knowledge on biomolecule, structure and function of fibrillar (keratin and collagen) and globular (hemoglobin and myoglobin) proteins. Solving problems relating to enzyme reaction kinetics and enzyme inhibition. Examples of disorders of some transport systems through cell membranes. Solving problems relating to certain metabolic pathway, linking theoretical knowledge in metabolism with practical examples. Part of the exercises is carried out in the biochemistry laboratory.				
Literature: <i>Literature in English:</i> 1. Rodwell V., Bender D., Botham K., Kennelly P., Anthony P. W.: Harper's Illustrated Biochemistry, textbook, McGraw-Hill Education, New York, 2018. 2. Nelson D. L., Cox M. M.: Lehninger Principles of Biochemistry, Worth Publishers, New York, 2000. <i>Literature in Serbian:</i> 3. Spasić S., Jelić-Ivanović Z., Spasojević-Kalimanovska V.: Opšta biohemija, udžbenik, Farmaceutski fakultet, Beograd, 2003. 4. Topić A., Stanojević-Bogavac N., Kotur-Stevuljević J.: Laboratorijske vežbe iz opšte biohemije, Farmaceutski fakultet, Beograd, 2009. 5. Stojanović S.: Zbirka zadataka iz hemije, Omega MS Pharmacy, Novi Sad, 2017. 6. Kovačević D.: Biohemija, udžbenik, Savremena administracija, Beograd, 2003. 7. Petrović J., Velimirović S.: Biohemija, udžbenik, Novi Sad, 2002. 8. Mihajlović M.: Biohemija, udžbenik, Naučna knjiga, Beograd, 2000.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, practical examples analyses, case study, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	

Attendance at lectures	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums	30		

BASICS OF INFORMATION AND COMMUNICATION TECHNOLOGIES

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Information and Communication Technologies				
Language of instruction: Serbian				
Course status: mandatory				
Semester: first year, first semester				
ECTS: 5				
Requirement: no				
Course objective: Course objective is to enable students to acquire basic knowledge in the area of application of information-communication technologies in health-care institutions, familiarizing with text processing software tools and with tabular calculations computer programs.				
Course outcome: Upon passing the exam students will be able to apply the acquired knowledge on computer hardware, peripheral units, software tools, multimedia and the internet in real-life situations in health-care institutions, or to use the acquired knowledge to improve the current work in health-care institutions. In addition to that, application of calculation or text processing program is important for everyday work of health-care professionals.				
Course content: <i>Lectures</i> Organization of information technology service in health-care institution; types of information systems; information systems within health-care system; acquisition and acceptance of new information systems in health-care, need for continuous updating; work of health-care worker within IT system; professional equipment; basics of system analysis; system functioning testing; standards of information technologies system in health care; patient recording; importance of permanent and timely entry of data into system; connection of the system with other national systems, unique system of patient tracking; trends of connecting health-care institutions system with pharmaceutical systems; patient data protection; the Internet, internet address, internet access, internet protocols, HTML, World Wide Web, internet services; Windows; specific program used in pharmacy practice; basic program languages used by health-care professionals (Word, Excell, Power Point); security systems in health-care institutions, panic keys. <i>Exercises</i> Types of information systems. Work of health-care worker within IT system. Need for continuous updating. Basics of telecommunications and forms of telecommunication systems. Patient recording. Importance of permanent and timely entry of data into system. Work in patient recording program. Use of internet. Basic program languages in the work of health-care professional (Word, Excel, Power Point), work in programs. Data processing, surveys. Graphic presentation and tabulating. Types of errors at data processing. Use of security system in health-care institution.				
Literature: <i>Literature in English:</i> 1. Biheller B. R., Evans J., Pinard T. K., Romer M. R.: Microsoft Office 2007: Introductory Course, textbook, Course Technology, Boston, 2007. <i>Literature in Serbian:</i> 2. Marčičević Ž., Marošan Z.: Primena informacionih tehnologija, udžbenik, Visoka poslovna škola strukovnih studija, Novi Sad, 2010. 3. Marošan Z., Vesin B.: Primena informacionih tehnologija, praktikum, Visoka poslovna škola strukovnih studija, Novi Sad, 2009. 4. Gerlič I.: Savremene informacione tehnologije u obrazovanju, udžbenik, Nacionalna izdavačka kuća Slovenija, Ljubljana, 2000. 5. Ringstrom D.: Otkrijte skrivena blaga Mikrosoft Eksela, Kompjuter Biblioteka, Beograd, 2022. 6. Arsić S.: Želim da naučim Eksel, Beosing, Beograd, 2005. 7. Softver HELIANT za rad u zdravstvenoj ustanovi, demo verzija. 8. Bunzel T.: Microsoft Office 2010 Kao od šale, CET, Beograd, 2010. 9. Tasić M., Čirić M.: Osnovi informatike, udžbenik, Prirodno-matematički fakultet, Niš, 2002. 10. Milošević Z., Bogdanović D.: Statistika i informatika u oblasti medicinskih istraživanja, udžbenik, Medicinski fakultet Univerziteta u Nišu, Niš, 2012.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, work with software, exercises.				

Grading (maximum 100 points)			
Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	30		
Colloquiums	30		

BASICS OF INTEGRATIVE MEDICINE

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Integrative Medicine				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, sixth semester				
ECTS: 5				
Requirement: no				
Course objective: The objective of the course is to provide students with basic information on different ideas and approaches to therapy, enable acquisition of knowledge on most important techniques included in the notion of integrative medicine, provide basic information on certain techniques of integrative medicine and provide preconditions for understanding the integrative approach to therapy. The objective of the course is that students understand integrative medicine as a medicine parallel, complementary to the conventional medicine that jointly result in an improved condition of the patient.				
Course outcome: Having passed the exam, the student will be capable of logical judgment on different approaches to therapy and treatment, approaches to therapy and treatment dealt with within integrative medicine, basic characteristics of certain methods; current application of different forms of integrative medicine in Serbia and global trends. In addition to that, students will be trained to interpret current laws of the Republic of Serbia relating to integrative medicine branches.				
Course content: <i>Lectures</i> Presentation of different concepts in defining the notions of conventional and integrative therapy, holistic and integrative approach to therapy; notions and technique presently classified as nonconventional therapy techniques; currently used therapeutic tools; basics of integrative medicine methods: acupuncture (acupressure, magnetotherapy, laser therapy), quantum medicine (Bi-Digital O-Ring Test, BRT, MRT), herbal and vitamin supplements, homeopathy, nonconventional approach to nutrition, essential oils, manipulative therapies (osteopathy, chiropractic), applied kinesiology, naturopathy, relaxation techniques (yoga, meditations, tai-chi, autogenic training, hypnosis etc.), massages (shiatsu, reflexotherapy), anthroposophic medicine, aromatherapy, colour therapy, smell therapy, sound therapy, crystal therapy, mud therapy, water therapy, qigong, reiki, environmental medicine; providing information on current and new forms of complementary therapies (information diagnostic and therapy); traditional medicine vs. integrative therapy; main assumptions of traditional medicine (acupuncture, tui na, herbal), campo, Indian (ayurveda), fundamentals of other traditional medicine; traditional systems of therapy in the Balkan region; safety at selection or use of complementary medicine methods. <i>Exercises</i> Visits to integrative medicine centres; familiarization with actual cases; discussion; case studies; internet presentations; field visits (to centres of certain integrative medicine branches).				
Литература: <i>Literature in English:</i> - Omura Yoshiaki: Practice of the Bi-Digital O-Ring Test, Ido No Nippon, Tokyo 1986. - Robson Terry: An introduction to Complementary Medicine, Allen & Unwin, Sydney, 2003. - Micozzi S. Marc: Fundamentals of Complementary and Alternative Medicine, Saunders, Philadelphia, 2010. - Kotsirilos Vicki, Vitetta Luis, Sali Avni: A Guide to Evidence-based Integrative and Complementary Medicine, Churchill Livingstone, Edinburgh, 2011. - Hecker Hans-Ulrich, Steveling Angelika, Peuker Elmar, Kastner Joerg: Color Atlas of Acupuncture: Body Points - Ear Points - Trigger Points (Complementary Medicine), Thieme, 2008. - Sutton Amy L: Complementary and Alternative Medicine Sourcebook, Omnigraphics, Detroit, 2010. - Zhanwen Liu, Liang Liu: Essentials of Chinese Medicine, Springer, London, New York, 2009. - Kligler Benjamin, Lee Roberta: Integrative Medicine principles for practice, Program in Integrative Medicine, University of Arizona. McGraw-Hill Companies, New York, Chicago, London, Madrid, Milan, Sydney, Toronto, Singapur, New Delhi, 2004. <i>Literature in Serbian:</i> - Grupa autora: Tajne alternativne medicine, Medicinska knjiga, Beograd, 2016. - Škokljek A.: Akupunkturologija, Naučna knjiga, Beograd, 1989. - Jovanović-Ignjatić Zlata: Kvantno hologramska medicina kroz prizmu akupunkturnih i mikrotalasno rezonantnih (samo) regulatornih mehanizama, Quanttes, Beograd, 2010.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.			
Grading (maximum 100 points)			
Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums/exam	30		

BASICS OF INTERNAL MEDICINE

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Internal Medicine				
Language of instruction: Serbian				
Course status: mandatory				
Semester: second year, third semester				
ECTS: 5				
Requirement: Basics of Nursing				
Course objective: Adoption of current theoretical and practical specialist knowledge in internal medicine, nursing of internal-medicine patients and training in application of acquired knowledge in health-care professional work.				
Course outcome: Upon the completion of the course students are trained to recognize in individual and team work cardiovascular, pulmonary, nephrology, endocrinology, gastroenterology, hematology and oncology conditions.				
Course content: <i>Lectures</i> Cardiology; specific features of nursing in heart rhythm, pacemaker implantation and electrophysiology ward; diagnostics, therapy and prevention of artery hypertension; specific features of nursing in cardiology wards; prevention, diagnostics and treatment coronary disease risk factors; diagnostics and treatment of acute coronary syndrome; most frequent and most important pulmonary diseases, diagnostics, prevention and treatment; specific features of nursing in pulmonary wards; most frequent and most important internal oncology diseases, diagnostics, prevention and treatment; specific features of administration of cytostatic therapy and chemotherapy in internal patients; most frequent and most important hematologic diseases, diagnostics, prevention and treatment; specific features of nursing in hematology wards; nursing and care of patients with hemorrhagic syndrome; nursing and care of immunocompromised patients; most frequent and most important gastrointestinal and biliopancreatic diseases, diagnostics, prevention and treatment; most frequent and most important liver diseases; endocrinology; most frequent and most important endocrinology diseases, diagnostics, prevention and treatment; specific features of nursing in endocrinology wards; insulin therapy regimes; diabetic foot nursing; most frequent and most important nephrology diseases, diagnostics, prevention and treatment; most frequent and most important immunology diseases, diagnostics, prevention and treatment; specific features of nursing in nephrology and immunology wards; specific features of nursing in dialysis wards; conducting peritoneal dialysis. <i>Exercises</i> Etiology and pathogenesis of cardiovascular diseases. Specific features of nursing in cardiology wards. Prevention, diagnostics and treatment of coronary disease risk factors. Diagnostics and treatment of acute coronary syndrome. Etiology and pathogenesis of pulmonary diseases. Function and general symptomatology of respiratory system diseases. Diagnostics of respiratory system diseases. Anamnesis, physical examination, abdomen inspection, additional examinations of digestive organs. Etiology and pathogenesis of digestive system organs diseases. Functional and general symptoms of digestive system organs. Functional and general symptoms of liver, gallbladder and biliary tract and pancreas diseases. Specific features of nursing in gastrointestinal wards. Preparation of patient for endoscopy diagnostic procedures. Examination and clinical testing of renal disease patient. Specific features of nursing in nephrology and immunology wards. Specific features of nursing in dialysis wards. Conducting hemodialysis and peritoneal dialysis. Propaedeutics of blood and blood forming organs. Specific features of nursing in hematology wards. Nursing and care of patients with hemorrhagic syndrome. Nursing and care of immunocompromised patients. Most frequent and most important endocrinology diseases, diagnostics, prevention and treatment. Specific features of nursing in endocrinology wards. Insulin therapy regimes. Specific features of nursing of patients with locomotor system diseases.				
Literature: <i>Literature in English:</i> 1. Farr C. B.: Internal Medicine for Nurses: Outlines of Internal Medicine for the Use of Nurses, Scholar's Choice, London, 2015. 2. Kasper D., Fauci A., Hauser S., Longo D.: Harrison's Principles of Internal Medicine, textbook, McGraw-Hill Professional, New York, 2015. <i>Literature in Serbian:</i> 3. Kopitović I.: Interna medicina za studente zdravstvene nege, udžbenik, Medicinski fakultet, Novi Sad, 2015. 4. Manojlović D. i dr.: Interna medicina I, II udžbenik, Zavod za udžbenike i nastavna sredstva, Beograd, 2003. 5. Antić S., Ilić S., Interna medicina, udžbenik, Medicinski fakultet, Niš, 2009. 6. Đurica S.: Interna medicina, udžbenik, Viša medicinska škola, Beograd, 2000. 7. Manojlović S.: Hitna stanja u internoj medicini, udžbenik, Zavod za udžbenike, Beograd, 2011.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with

				student, projects...)
45	15	0	0	0
Methods of teaching: lectures using different video material, exercises on dummy, exercises.				
Grading (maximum 100 points)				
Pre-Exam obligations		Points	Final Exam	Points
Lecture attendance		3	Exam	30
Activity		7		
Projects/Seminars		0		
Exercises/professional practice		30		
Colloquiums		30		

BASICS OF NEUROLOGY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Neurology				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, fifth semester				
ECTS: 4				
Requirement: Physical Factors in Therapy, Physiotherapy Assessment, Skills in Physiotherapy				
Course objective: At the end of the course, the student acquires knowledge about the symptoms and signs of diseases of certain nervous system deceases, about adequate treatment of patients with neurological symptoms, when to suspect a certain neurological entity, when to conduct an adequate diagnostic procedure and possibly start treatment.				
Course objective: Upon the completion of the course and passing the exam, students are able to recognize neurological symptoms in injuries and diseases of the nervous system, make a functional assessment, recognize needs of the patient, determine goals and tasks of the treatment, guide the course of treatments, monitor and control the results and keep appropriate medical documentation of the patient with neurological diseases, disorders and damage in all stages of the process of rehabilitation.				
Course content: <i>Lectures</i> Episodic consciousness disorders, coma, delirium. Sleep disorders. Epilepsies and epileptic syndromes. Headaches, neuralgiae, vertigo. Cerebrovascular diseases (ischemic) and cerebral edema. CNS infectious diseases and neurological complications of systemic diseases. Dementias. Neurological aspects of the nervous system trauma. CNS tumors. CNS demyelinating diseases. Movement disorders and cerebellar diseases. Development period neurology. Motor neuron diseases and polyneuropathies. Spinal cord diseases. Neuromuscular junction and muscular diseases. <i>Exercises</i> Neurological history. Examination of cranial nerves. Examination of the neck, upper and lower extremities (trophic, tonus, mobility, muscular reflexes, muscular strength, stretch tests). Extrapyramidal symptoms and signs. Cerebral signs testing. Testing higher cortical functions (speech, praxia, gnosis, lexis, calculia). Familiarization with diagnostic methods in neurology (EEG, video EEG, EMNG, EP, LP, isoelectric focusing of liquor). Doppler ultrasound, CT, MRI, PET, SPECT). Examination of patients in coma. Examination of myasthenia gravis patients. Neurological examination of a child. Walk disorder (differential diagnosis). Headaches. Overall neurological treatment of different neurological patients, differential diagnostic analysis.				
Literature: <i>Literature in English:</i> - Adams R. D., Victor M., Ropper A. H.: Principles of Neurology, McGraw-Hill, New York, 2005. - Kearney P., McGowan T., Anderson J., Strosahl D.: The Role of the Occupational Therapist on the Neuro-Rehabilitation Team, Springer Publishing Company, New York, 2007. <i>Literature in Serbian:</i> - Kostić V.: Neurologija za studente medicine, udžbenik, Medicinski fakultet, Univerzitet u Beogradu, 2007. - Radojčić B.: Neurološki pregled i osnovi kliničke neurologije, Elit Medica, Beograd, 2006. - Lević Z.: Osnovi savremene neurologije, Zavod za udžbenike, Beograd, 2009.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	15	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums	30			

BASICS OF NURSING

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Nursing				
Language of instruction: Serbian				
Course status: mandatory				
Semester: first year, first semester				
ECTS: 8				
Requirement: no				
Course objective: Adoption of basic notions in nursing and basic theoretical and practical (resourcefulness) specialist knowledge in nursing, and training in application of the acquired knowledge in professional and research work. Self-education aimed at own protection, protection of patients and other team members, development of critical thinking, independence in nursing and team work abilities.				
Course outcome: Adoption of a holistic approach in nursing; skills, development of professional awareness, responsibility, humanity, sense of deontology, aesthetics and communication with patients and professional team; student independence in nursing, mastered nurse intervention and interdependent nurse intervention in the field of diagnostics and therapy.				
Course content: <i>Lectures</i> Theoretical consideration of basic and general notions in medicine; development of nursing; nursing and society; requirements for quality nursing in hospital and out-of-hospital circumstances; nurse interventions at patient hospitalization; nursing process; data gathering and assessment of needs of patients for nursing; general (universal) problems in nursing; nursing of specific groups; nursing documentation; models (methods) of organization of provision of nursing; progressive nursing and patient categorization; improvement of nursing through research work of nurses. <i>Exercises</i> Analysis of basic values of nursing and necessary requirements for quality nursing in hospital and out-of-hospital conditions. Basics of good practice and infection control. Nurse interventions at patient hospitalization. Determining needs in nursing. Application of aids to data collecting. Recording vital signs and other health indicators as a form of observing in nursing. Nurse diagnosis and collaboration issue in nursing process. Nursing planning. Nursing plan realization. Practicing certain nurse interventions. Evaluation in nursing process and nurse documentation keeping.				
Literature: <i>Literature in English:</i> 1. Gulanick M., Myers J. L.: Nursing Care Plans-Nursing Diagnoses and Intervention, Elsevier, Mosby, New York, 2007. 2. Potter P. A., Perry A. G., Stockert P. A., Hall A.: Fundamentals of Nursing, textbook, Elsevier, New York, 2020. 3. Lynn P. B.: Taylor's Clinical Nursing Skills, A Nursing Process Approach, textbook, LWW, Liverpool, 2018. 4. Springhouse: Nursing procedures, prevod, Data Status, Beograd, 2010. <i>Literature in Serbian:</i> 5. Rajak S., Imbronjev V.: Osnovi zdravstvene nege, udžbenik, Omega MS Pharmacy, Novi Sad, 2018. 6. Kekuš D.: Zdravstvena nega u primarnoj zdravstvenoj zaštiti, Visoka zdravstvena škola, Beograd, 2015. 7. Rudić R., Kocev N., Munćan B.: Proces zdravstvene nege, Praktikum, Knjiga-komerc, Beograd, 2005. 8. Tijanić M., Đuranović D., Rudić R., Milović Lj.: Zdravstvena nega i savremeno sestrinstvo, udžbenik, Naučna KMD, Beograd, 2010. 9. Munćan B.: Zdravstvena nega, udžbenik, Beograd, 2014. 10. Babić L.: Zdravstvena nega u radiologiji, udžbenik, Licej, Beograd, 2011. 11. Stojković B.: Zdravstvena nega u radiologiji, udžbenik, Naučna knjiga, Beograd, 2006. 12. Maksimović J.: Uvod u medicinu sa teorijom medicine, udžbenik, Medicinski fakultet, Novi Sad, 2001.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	15	300	0	0
Methods of teaching: lectures using different video materials, exercises on dummy, simulation, exercises, case study, discussion, workshop.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			

Colloquiums	20		
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BASICS OF PEDIATRICS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Pediatrics				
Language of instruction: Serbian				
Course status: mandatory				
Semester: second year, third semester				
ECTS: 5				
Requirement: Basics of Nursing				
Course objective: Familiarizing students with medically healthy and sick children, pediatric treatment process and the role of health-care professional dealing with nursing in pediatrics. Study analysis and planning needs in pediatric nursing of patients for individuals and groups. Understanding the importance of inclusion of parents in nursing of children. Improvement of possibilities of successful communication of treated children, parents and medical team.				
Course outcome: Upon completion of the course and attending the exercises, i.e. passing the exam, the student should be capable of applying the acquired knowledge in pediatric expertise and nursing interventions in pediatrics, as well as communication skills in the field of pediatrics with young patients and their families. The student should be able to practically apply the acquired knowledge and skills within pediatric health care.				
Course content: <i>Lectures</i> Inclusion of parents in nursing of children and the young; evidence based on nursing in pediatrics; application of nursing process on individual basic activities – conceptual model by V. Henderson; care of all age children; nursing of prematurely born children; nursing of sick children; nursing of children with special needs; nursing of children suffering from pain; newborn nutrition; neonatology; genetics; growth and development of children; nutrition of children; nephrology and endocrinology; cardiology, pulmonology and dermatology; emergency medicine; psychiatry and neurology; social pediatrics; poisoning and injuries; disproportion of physical and psychical maturity; adolescent medicine. <i>Exercises</i> Pediatric nursing and application of theoretic model. Preparation of students for clinical training within seminars. Practical application of pediatric nursing, intervention in laboratory within V. Henderson conceptual model.				
Literature: <i>Literature in English:</i> 1. Ball J. W.: Pediatric Nursing, Pearson education, Prentice Hall, New Jersey, 2008. 2. Kliegman R. M., Jenson H. B., Behrman R. E.: Nelson Textbook of Pediatrics, textbook, Saunders, New York, 2000. 3. Aruchamy L.: Practical Pediatrics Paperback, textbook, Jaypee, New Jersey, 2020. 4. Goldbloom R.: Pediatric Clinical Skills, Saunders, Philadelphia, 2003. 5. Hockenberry M.: Wong's Essentials of Pediatric Nursing, Elsevier Mosby, St. Louis, 2007. 6. Muscari M. E.: Pediatrics nursing, Lippincott Williams & Wilkins, Philadelphia, 2005. 7. Potts N. L.: Pediatric Nursing, Thomson, New York, 2007. <i>Literature in Serbian:</i> 9. Jovanović Privrodski J.: Pedijatrija, udžbenik, Medicinski fakultet, Novi Sad, 2012. 10. Mardešić D.: Pedatrija, udžbenik, Školska knjiga, Zagreb, 2003. 11. Marinković Lj.: Zdravstvena nega u pedijatriji, udžbenik, G.A.D., Beograd, 2007. 12. Janković B. Vodič osnovno i specijalizovano zbrinjavanje novorođenčeta. Beograd:Institut za zdravstvenu zaštitu majke i deteta Srbije“Dr Vukan Čupić“, 2011. 13. Berman R., Kligman R., Dženson H., Nelson N.: Udžbenik pedijatrije, Bard-Fin, Beograd, 2009. 14. Felc Z.: Osnove neonatologije, udžbenik, Fakulteta za zdravstvene vede, Univerzitet u Mariboru, 2008. 15. Rončević N., Vukavić T. i sar.: Pedijatrijska propedeutika, Futura, Petrovaradin, 2005.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	15	0	0	0
Methods of teaching: lectures using different video material, exercises on dummy; exercises.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Attendance at lectures	3	Exam	40	
Activity	7			
Projects/Seminars	0			

Exercises/professional practice	20		
Colloquiums	30		

BASICS OF RHEUMATOLOGY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Rheumatology				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, fifth semester				
ECTS: 4				
Requirement: Physical Factors in Therapy, Physiotherapy Assessment, Skills in Physiotherapy				
Course objective: The objective of the course is to prepare students to apply the acquired knowledge and skills and recognize the symptoms, types, phases and stages of a disease, assess the conditions, planning physiotherapy, maintaining recovery process, control the results and keep medical records of patients suffering from rheumatism. Acquisition of knowledge on etiology, pathoanatomical changes, clinical features, course, prognosis, treatment and recovery of patients suffering from rheumatologic diseases from the aspect of kinesitherapy.				
Course outcome: Upon the completion of the course and passing the exam students will be trained to assess the patient from the aspect of work therapy, determine physiotherapeutic goals depending on the psychic function disorder, motivate individuals and/or groups, organize individual and group work, sports and recreational activities, select, apply and quantify physiotherapeutic procedures and methods and evaluate the effects of their work.				
Course content: <i>Lectures</i> Basics of functional anatomy of the nervous system. Correlative neuroanatomy and functional neurology. Syndromes of neurological damage. Diagnostic methods in rheumatology. Damage of cranial nerves. Consciousness and consciousness disorders. Epilepsies. Sleep and sleep disorders. Cranial-cerebral injuries. Spinal system. Vertebral column injuries. Intracranial tumors. Spinal canal tumors. Cerebrovascular diseases. Diseases of extrapyramidal system. Nerve root diseases. Diseases of plexus and individual nerves. Polyneuropathies and polyneuritis. Inflammatory diseases of the nervous system. Muscle diseases. Degenerative diseases of the nervous system. Dementias. Neurological diseases of development period. <i>Exercises</i> Basics of functional anatomy of the nervous system – recapitulation. Analysis of the most frequent diseases – examples from practice, possibility of physiotherapeutic treatment.				
Literature: <i>Literature in English:</i> 1. Goodacre L., McArthur M.: Rheumatology Practice in Occupational Therapy, Wiley-Blackwell, New Jersey, 2013. <i>Literature in Serbian:</i> 2. Pilipović H., Reumatologija, udžbenik, autorsko izdanje, Beograd; 2000. 3. Pavlović M.: Kineziterapija u reumatologiji, udžbenik, Visoka medicinska škola, Beograd; 2003. 4. Jovanović-Sretenović T.: Praktikum-radna terapija u reumatologiji, Viša zdravstvena škola strukovnih studija, Beograd, 2012. 5. Nedvidek B.: Osnovi fizikalne medicine i medicinske rehabilitacije, udžbenik, Medicinski fakultet, Novi Sad, 2003.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	15	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums	30			

BASICS OF SURGERY WITH ORTHOPEDICS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Basics of Surgery with Orthopedics				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, fifth semester				
ECTS: 10				
Requirement: Basics of Nursing				
Course objective: Acquisition of theoretical knowledge and skills in nursing patients in all surgery branches.				
Course outcome: Students are trained to practically apply the acquired knowledge from all surgical disciplines necessary for the acquisition of skills in the care of surgical patients, which includes previous mastering of practical knowledge and acquiring skills necessary for the care of surgical patients.				
Course content: <i>Lectures</i> Surgical diagnostics and seminology; war surgery doctrine; the organization of care for the injured in peacetime and wartime conditions; asepsis in surgery in war conditions; wounds, specifics of war wounds, surgical infections; surgical terminology and types of surgical interventions; post-operative complications, foreign bodies in surgery; surgical principles in oncology; neck surgery and surgical breast diseases; abdominal surgery; specificities of pediatric surgery, urgent conditions in neonatal surgery; surgery of the chest wall, pleura, and lungs, mediastinum, chest trauma; cardiothoracic and vascular surgery; surgical treatment of burns, basic principles of plastic surgery, soft tissue and skin tumors, general principles and methods in reconstructing skin defects, diseases and injuries of the hand; neurosurgery; urology; orthopedic surgery. <i>Exercises</i> Principles, methods, and means of sterilization and disinfection in surgery, asepsis in surgery and in wartime conditions. Physical examination of surgical patients, diagnostic procedures in surgery. Types of immobilization. Initial hospital care for the injured. Surgical wound management. Care of surgical infections. Initial treatment of burn patients. Minor surgical interventions. Operating room during operation. Postoperative care. Specifics of chest surgery, cardiothoracic surgery, oncological surgery, pediatric surgery, plastic and reconstructive surgery, vascular surgery, neurosurgery, urology, abdominal surgery, orthopedic surgery, traumatology of the locomotor system.				
Literature: <i>Literature in English:</i> 1. Pudner R.: Nursing the Surgical Patient, Elsevier, 2005. 2. Norton J., Barie P.S., Bollinger R.R., Chang A.E., Lowry S., Mulvihill S.J., Pass H.I., Thompson R.W.: Surgery: Basic Science and Clinical Evidence, Springer Publishing Company, New York, 2008. 3. Lewis L.S., Dirksen S.R., Heitkemper M.M., Bucher L.: Medical Surgical Nursing: Assessment and Management of Clinical Problems, Toronto, 2011. <i>Literature in Serbian:</i> 4. Maksimović Ž.: Hirurgija, udžbenik, CIBID, Beograd, 2008. 5. Stevović M. i sar.: Hirurgija za studente i lekare, Savremena administracija, Beograd, 2000. 6. Stojiljković J.: Zdravstvena nega u hirurgiji, Altera Books, Beograd, 2014. 7. Dragović M.: Ambulantna hirurgija, Velarta, Beograd, 2006. 8. Petković S., Bukurov S.: Hirurgija: udžbenik za medicinare i lekare, Medicinska knjiga, Zagreb, 1982. 9. Terzić N.: Zdravstvena nega u hirurgiji, Finegraf, Beograd, 2013. 10. Glišić R.: Zdravstvena nega u hirurgiji, Cicero, Beograd, 2011. 11. Domazet N.: Hirurgija sa ortopedijom i traumatologijom, udžbenik, Beograd, 1996.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	15	0	0	0
Methods of teaching: lectures using different video material, exercises, case studies, exercises on dummy, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			

Colloquiums	30		
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BIOPHYSICS WITH BIOMECHANICS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Biophysics with Biomechanics				
Language of instruction: Serbian				
Course status: mandatory				
Semester: first year, second semester				
ECTS: 3				
Requirement: no				
Course objective: To establish and acquire fundamental theoretical and practical knowledge in biophysics, necessary for the later, easier understanding of the biomechanical mechanisms of the human body, and for applying this knowledge within physiotherapy and medical rehabilitation of various disorders and diseases; to become familiar with the laws of physics relevant to physiotherapy, the dynamics of systems, and the basics of biomechanics.				
Course outcome: Familiarization with the biophysical foundations of biomechanics in specific systems of the human body, the application of computer-based methods in biomechanics, and understanding the principles of biomechanics and their applications in complex body systems.				
Course content: <i>Lectures</i> Biotransport. Membrane potential. Biophysics of sensory functions. Basics laws of biomechanics and dynamics. Principal rules of biomechanics. Elements of human locomotor system, levers. Biomechanical aspects of osteogenesis and mechanical model of bone form adaptation. Intermolecular forces. Elasticity at stretching and bending, bone fracture toughness. Impulse force. Characteristics of ultra sound, sources of ultra sound. X-ray techniques. Electrophysiology, examples of modelling in electrophysiology, alternate current passage through organism. Physical basics of diametry. Laser, laser in medicine. <i>Exercises</i> Computer simulations and demonstration of membrane potential; demonstration of electrophysical process; laser operation demonstration; visit to physiology laboratory; basic application of computing methods in biomechanics; familiarization with principles of biomechanics of breathing, muscles, bones, blood vessels, heart and nervous system.				
Literature: <i>Literature in English:</i> 1. William Bialek: Biophysics: Searching for Principles, Wiley, New York, 2014. 2. Duane Knudson: Fundamentals of Biomechanics, Springer, Munchen, 2012. <i>Literature in Serbian:</i> 3. Simonović J., Vuković J., Ristanović D., Radovanov R., Popov D.: Biofizika u medicini, II izd., udžbenik, Medicinska knjiga, 2003. 4. Vasiljev R.: Biomehanika: dinamička morfologija, položaj tela u prostoru, uslovi ravnoteže, Novi Sad, 2005. 5. Jevtić J.: Biohenika lokomotornog sistema, Kragujevac, 2004. 6. Vasiljev R.: Biomehanika, praktikum, Novi Sad, 2001.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	45	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case study, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums/exam	30			

BUSINESS COMMUNICATION SKILLS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Business Communication Skills				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, first semester				
ECTS: 5				
Requirement: no				
Course objective: Through active participation in the learning process, students should acquire knowledge in the field of communication with the aim of developing communication competence and the skills required for professional practice in the care and treatment of older persons, organizational and team communication, and communication with social partners.				
Course outcome: At the end of the course student should be capable to apply the acquired knowledge in communication skills and to practically implement the acquired knowledge and skills within nursing.				
Course content: <i>Lectures</i> General notions, aspects, types, parts of communication; communication competency in professional work; barriers in communication; specific characteristics of communication with elderly persons; importance of verbal and non-verbal communication with elderly persons; specific features of application of communication health-care education methods with elderly persons; communication and health-care educational counselling – supporting methods; first contact establishing and talking with patients; specific features and communication with persons with sensory perception disorders; ethics in communication; political and social correctness in communication; professional identity and communication; communication styles; emotional communication, empathy; communication as social support; communication and pathological distress in nursing elderly persons and in palliative care; therapy and informational communication; psychological-social aspect of communication; communication with persons under stress and in crisis; communication with persons of diminished sensory and verbal abilities; communication with families of elderly persons; communication in grievance; interpersonal communication; team work and social partners; public relations of organization with an aim of reaching mutual understanding and attaining common interests; communication in crisis situations; managing conflicts and their understanding. <i>Exercises</i> Aspects of communication. Verbal and non-verbal communication with the old. Empathy. Ethical principles. Creative workshops of exercising methods of verbal communication: speaking, listening, reading, writing. Non-verbal communication. Specific aspects of communication with patients with sensory perception disorders. Team work. Therapy and informational communication. Implementation of health-care educational methods with old persons. Managing conflicts and their solution. Application of SOLER technique. Communication and psychological distress in palliative care. Procedures in grievance period.				
Literature: <i>Literature in English:</i> 1. Hugman B.: Healthcare Communication, textbook, Pharmaceutical Press, London, 2009 2. Lloyd M., Bor R., Noble L.: Clinical Communication Skills for Medicine, textbook, Elsevier, New York, 2018 <i>Literature in Serbian:</i> 3. Kekuš D.: Komunikacije u profesionalnoj praksi zdravstvenih radnika, II izd., udžbenik, Beograd, 2010 4. Kekuš D.: Modeli integrisanih komunikacija u zdravstvu, udžbenik, Fakultet organizacionih nauka, Beogradu, 2009 5. Holí K.: Veština uspešne komunikacije, Laguna, Beograd, 2017 6. Lejman K., Djufrej D.: Poslovna komunikacija, Data Status, Beograd, 2015 7. Tomić Z.: Komunikacija i javnost, Čigoja štampa, Beograd, 2007 8. Tomić Z.: Preživeti kaos: Filozofski vodič kroz veštinu komunikacije, Laguna, Beograd, 2024 9. Grandov Z.: Pregovaranje u međunarodnom biznisu, Trgovačko društvo BTO, Beograd, 2004 10. Kekuš D, Stanisavljević S, Joković S. Primerenost terapijske i informativne komunikacije nivou zdravstvene pismenosti korisnika zdravstvenih usluga. Sestrinska reč 2017; 21(75): 4-7 11. Mandić T.: Komunikologija, Clio, Beograd, 2003				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: interactive lectures, demonstrations, practical exercises, practical example analysis, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	

Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums/exam	20		

BUSINESS ENGLISH

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Business English				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, fifth semester				
ECTS: 5				
Requirement: no				
Course objective: Course objective is familiarization with characteristics of the English language, adoption of phrases and patterns necessary for communication at professional level and adoption of techniques of written and oral expressing in professional communication.				
Course outcome: Students will be able to apply the acquired knowledge in professional communication, create corresponding written forms in accordance with their professional communication and use speech patterns appropriate to a given situation.				
Course content: <i>Lectures</i> Broadening of knowledge on past tenses, dependent and relative clauses; temporal conjunctions and temporal clause structure; historical and biographical texts; topics: health, connections and common life in English-speaking countries; extension of knowledge on future tenses, use of subjunctive, conjunctions, and relative clause structure; topics: sport, environment protections and business life in English-speaking countries; medical terminology relevant for student's profession. <i>Exercises</i> Students are taught to communicate in different situations (at doctor's, with service providers etc.), to seek and give information on the phone, to make bookings, to communicate in conflict situations, to express their views and feelings, to give accounts orally and in writing of past events through adequate use of past tenses and temporal conjunctions; students are taught to express their opinion orally and in writing on current topics, to participate in discussions, to independently present certain topics, to give reports on personal experience and to ask others on their experience.				
Literature: <i>Literature in English:</i> 1. Murphy R.: English Grammar in Use, Cambridge University Press, Cambridge, 2014. 2. MacLean J.: English in Basic Medical Science, textbook, Oxford University Press, Oxford, 2000. 3. Evans V., Dooley J., Tran T. M.: Career Paths, Medical Book 1, udžbenik, Express Publishing, Berkshire, 2018. 4. McCarthy M., O'Dell F.: English Vocabulary in Use, Cambridge University Press, Cambridge, 2006. 5. Hornby A. S.: Oxford Advanced Learner's Dictionary of Current English, Oxford University Press, Oxford, 2008. <i>Literature in Serbian:</i> 6. Dragović R.: Engleski za zdravstvene radnike, udžbenik, Naučna knjiga, Beograd, 2004.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, practical exercises, communication, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums	20			

BUSINESS GERMAN

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Business German				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, fifth semester				
ECTS: 5				
Requirement: no				
Course objective: Course objective is familiarization with characteristics of the German language, adoption of phrases and patterns necessary for communication at professional level and adoption of techniques of written and oral expressing in professional communication.				
Course outcome: Students will be able to apply the acquired knowledge in professional communication, create corresponding written forms in accordance with their professional communication and use speech patterns appropriate to a given situation.				
Course content: <i>Lectures</i> Broadening of knowledge on past tenses, dependent and relative clauses; temporal conjunctions and temporal clause structure; historical and biographical texts; topics: health, connections and common life in German-speaking countries; extension of knowledge on future tenses, use of subjunctive, conjunctions, and relative clause structure; topics: sport, environment protections and business life in German-speaking countries; medical terminology relevant for student's profession. <i>Exercises</i> Students are taught to communicate in different situations (at doctor's, with service providers etc.), to seek and give information on the phone, to make bookings, to communicate in conflict situations, to express their views and feelings, to give accounts orally and in writing of past events through adequate use of past tenses and temporal conjunctions; students are taught to express their opinion orally and in writing on current topics, to participate in discussions, to independently present certain topics, to give reports on personal experience and to ask others on their experience.				
Literature: <i>Literature in German:</i> 1. Menschen A1 KB und Menschen A1 AB, udžbenik, Klett Verlag, Stuttgart, 2018. 2. Pude E. A., Specht F.: Menschen, Deutsch als Fremdsprache Kursbuch mit DVD-ROM, udžbenik, Hueber Verlag, Munchen, 2012. 3. Loibl B. et al.: Schritte Plus im Beruf, Kommunikation am Arbeitsplatz, Max Hueber Verlag, Ismaning, 2015. 4. Becker N., Braunert J.: Alltag, Beruf, Kursbuch+Arbeitsbuch, Max Hueber Verlag, Ismaning, 2009. 5. Becker N., Braunert J., Schlenker W.: Unternehmen Deutsch Grundkurs. Kursbuch, Klett Verlag, Stuttgart, 2005. 6. Becker N., Braunert J.: Unternehmen Deutsch Grundkurs, Arbeitsbuch, KlettVerlag, Stuttgart, 2004. <i>Literature in Serbian:</i> 7. Grammatik - Ganz klar Übungsgrammatik A1-B1, uz audio materijal, Hueber Verlag, kratak pregled gramatike sa vežbanjima „Hallo aber Deutsch“. 8. Nikolovski V.: Gramatička vežbanja „Eine kleine Übungsgrammatik“, Zavod za udžbenike i nastavna sredstva, Schritte international 1, Grammatikspiele. 9. Vučković-Stojanović M.: Uvod u nemački poslovni jezik, udžbenik, Savremena administracija, Beograd, 2005.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, practical exercises, communication, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums	20			

CLINICAL KINESIOLOGY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Clinical Kinesiology				
Language of instruction: Serbian				
Course status: mandatory				
Semester: second year, third semester				
ECTS: 5				
Requirement: no				
Course objective: Familiarization with the importance and role of kinesiology in diagnostics and therapy in the process of medical rehabilitation, acquisition, consolidation and application of knowledge on making movements in physiological conditions, familiarization with theoretical knowledge on biomechanics of locomotor functions and movement mechanisms.				
Course outcome: Independence of assessment and application of movements in therapeutic purposes, application of the acquired knowledge and skills in the assessment of functional capabilities of joints. Consolidated knowledge on the importance of making movements in developing psychophysical characteristics and connecting biological values of organism applied in laboratory conditions are a basis for assessment and application of movements in joints and manual-muscular test, acquisition of basics of human body kinesiology.				
Course content: <i>Lectures</i> The role of kinesiology as a discipline and its position in relation to medicine and other branches of science. The importance of human body construction in morphological, functional and biomechanical terms. The importance of physics, biophysics and mechanics, as well as other related sciences narrowly linked to the study of movements and body movement. The importance of neurophysiology in studying willing movements and formation of motor habits. Measurement of movement range and manual-muscular test – vertebral column, shoulder girdle, elbow, wrist, fist, hip, knee, ankle, foot, facial muscles. <i>Exercises</i> Acquisition and adoption of therapeutic skills in the assessment of functional capacities of the locomotor system. Measurement of movement range and manual-muscular test – vertebral column, shoulder girdle, elbow, wrist, fist, hip, knee, ankle, foot, facial muscles. Measurement of the size and length of extremities, posture analysis, walk analysis.				
Literature: <i>Literature in English:</i> 1. Frost R.: Applied Kinesiology, Revised Edition: A Training Manual and Reference Book of Basic Principles and Practices, Academic Press, London, 2013. 2. Norkin C. C., White J. D.: Measurement of Joint Motion-A Guide to Goniometry, F. A. Davis Company, Philadelphia, 2009. <i>Literature in Serbian:</i> 3. Nikčević-Krivokapić Lj., Subotić S., Vukićević M., Kurtinović S.: Osnovi kineziologije i kineziterapije, udžbenik, ICEPS, Beograd, 2023. 4. Zec Ž.: Osnovi kineziologije, udžbenik, Visoka medicinska škola, Zemun, 2000. 5. Nikolić S., Vučurević S.: Praktikum iz kineziologije, Visoka medicinska škola, Zemun, 2000. 6. Stevanović S.: Kineziologija i primenjena anatomija, Zagorac, Beograd, 2002. 7. Vesović Potić V.: Osnovi fizikalne medicine i rehabilitacije, udžbenik za studente medicine, Medicinski fakultet, Beograd, 2009.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	45	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case study, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums	30			

CLINICAL KINESITHERAPY

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Clinical Kinesitherapy
Language of instruction:	Serbian
Course status:	mandatory
Semester:	second year, fourth semester
ECTS:	5
Requirement:	Clinical Kinesiology
Course objective:	Acquisition of theoretical knowledge on the basics, methods of application and effects of movement therapy, pedagogical and methodological principles of application of kinesitherapy of importance for a therapist, acquisition of knowledge on the principles of kinesitherapy of musculoskeletal dysfunctions, establishing links between pathoanatomical substrate and treatment by movement, acquisition of knowledge on the assessment of functional condition, drawing up of programme implying specific methods.
Course outcome:	Capability of correlating knowledge acquired in previous courses aimed at critical selection of kinesitherapy methods depending on the targeted pathoanatomical substrate and effects expected, acquisition of basic skills of passive and active kinesitherapy as a basis for examining the methods applied in specific functional deficits in the kinesitherapy of musculoskeletal and neuromuscular dysfunctions and their application in clinical conditions, acquisition of knowledge and skills of assessment and selection of the adopted techniques in the process of treating typical musculoskeletal dysfunctions.
Course content:	<i>Lectures</i> Consequences of inactivity, biological value of the movement. Kinesitherapy tools, scientific base, objectives, tasks, form and methods of conducting. Pedagogical and methodological principles of kinesitherapy, dosing methodology, initial positions in kinesitherapy. Types, elements, effects and application of passive therapeutic movements. Movement development, motoric learning as a basis of active kinesitherapy. Types, elements, effects and use of active therapeutic movements. Principles of hydrokinesitherapy, sports and recreational activities and games as kinesitherapy forms. Kinesitherapy indications and contraindications. Specific features of kinesitherapy in elderly persons. Model of musculoskeletal dysfunctions. Function and response of the connective tissue to physical forces action. Components important for musculoskeletal issues: inflammation, immobilization, muscle weakness, tonus, pain. Therapeutic assessment of tissue condition and selection of kinesitherapy techniques: use of movements in differential assessment of soft tissues, methods of tissue burdening, tissue reactivity. Damage of muscular function: strength, speed, endurance, agility. Factors affecting muscular function: type and size of muscle fibre, force-speed ratio, length-tension ratio, specific elements of training. Precautionary measures and contraindications in muscle function damage: pain, the Valsalva manoeuvre, muscle fatigue, physiological adaptation to training. Mobility damage. Normal joint mobility, range of joint movement and functional range of muscle contraction. Kinesitherapy approach to hypomobility and hypermobility. Pain: etiology and pathophysiology, organic and inorganic pains, pain dimensions and types. Posture and coordination dysfunction caused by muscular imbalance and other dysfunctions. Walk and walk deviations as a consequence of musculoskeletal dysfunctions. Most important physiological responses to physical activity and exercises of cardiovascular system. Adaptation of respiratory system to efforts in physiological conditions. Functional tests and kinesitherapy programme depending on respiratory system dysfunction. Aerobic conditioning exercises. Aerobic treatment programmes. Assessment of tolerance to exercises in cardiac dysfunctions. Functional regulation of peripheral circulation. Assessment tests of artery, venous and lymphatic circulation. <i>Exercises</i> Workplace and kinesitherapy equipment. Kth initial positions. Principles of functional testing. Exercises – elements of passive therapeutic movements aimed at multiple effects. Relaxation, soft tissue elongation, mobilization of joints, soft tissue, blood, lymph, maintenance of the range of motion in joints, neuromuscular activity stimulation. Exercises – elements of free active, active with additional resistance and active supported movement. Exercises – elements of neuromuscular facilitation (stimulation and inhibition of neuromuscular activity). Development of movements: early reflex activity, postural automatism. Different procedures stimulating development of movements, postures and activity through early reflex activity, postural automatisms (standing up, defence, balance), proprioceptive activity, tactile, sound, visual, manual and spatial orientation. Assessment/evaluation of damage: muscular strength, speed and endurance; mobility of contractile and noncontractile tissue; balance; posture; walk. Assessment/evaluation of pain. Selection of methods, application and dosing of kinesitherapy procedures aimed at improvement of strength, speed and endurance, hypomobility of soft-tissue structures aimed at preservation and increasing of mobility of soft-tissue structures. Selection of methods aimed at preserving and improving balance, posture and walk. Walking aids. Assessment, adoption of techniques and drawing up programme for maintenance and improvement of respiratory functions. Training, correction and control of breathing. Training and exercises in following physical exertion. Training and exercises in diaphragmatic breathing aimed at reduction of breathing effort, improvement of exchange of gases, appropriate breathing under any physical stress. Drawing up and selection of adequate exercise programmes depending on cardiovascular dysfunctions. Therapeutic assessment, objectives and drawing up exercise programmes depending on the

peripheral circulation disorder (artery, venous and lymph).				
Literature:				
<i>Literature in Serbian:</i>				
1. Pavlović M.: Odabrana poglavlja iz opšte kineziterapije, udžbenik, Data status, Beograd, 2009.				
2. Jevtić M.: Klinička kineziterapija, udžbenik, Medicinski fakultet, Univerzitet u Kragujevcu, 2001.				
3. Jovanović L., Ereš S.: Osnovi kineziterapije, autorsko izdanje, Beograd, 2013.				
4. Pavlović M.: Kineziterapija u procesu rehabilitacije obolelih od kardiovaskularnih bolesti, autorsko izdanje, Beograd, 2002.				
5. Milojević M.: Kineziterapija mišićnoskeletnih disfunkcija, autorsko izdanje, Beograd, 2009.				
6. Vesović Potić V.: Osnovi fizikalne medicine i rehabilitacije, udžbenik za studente medicine, Medicinski fakultet, Beograd, 2009.				
7. Nikčević-Krivokapić Lj., Subotić S., Vukićević M., Kurtinović S.: Osnovi kineziologije i kineziterapije, udžbenik, ICEPS, Beograd, 2023.				
<i>Literature in English:</i>				
8. Pivetta S., Pivetta M.: Techniques of medical gymnastics Kinesitherapy, Academic Press, London, 2013.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	300	0	0
Methods of teaching:				
Lectures, exercises, case analyses, exercises on dummy, clinical practice.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums/exam	20			

DIAGNOSTICALLY-THERAPEUTIC PROGRAM

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Diagnostically-Therapeutic Program
Language of instruction:	Serbian
Course status:	elective
Semester:	second year, fourth semester
ECTS:	5
Requirement:	Pathophysiology
Course objective:	Familiarization of students with diagnostic and therapeutic procedures used in the daily operations of a medical-biochemical laboratory in clinical diagnostics with various biological materials, their proper use, extraction, transport, and storage; methods of testing in clinical practice, as well as the basic concepts related to conducting analysis, potential (significant) variations in laboratory test results influenced by a range of external factors, interpretation of results, and the importance of implementing GLP (Good Laboratory Practice) and the ISO 17025 and ISO 15189:2014 standards. Through this course, students will be guided through patient preparation, the sampling procedure, explanation of the analysis itself, as well as a series of factors that can influence the obtained values of the analysis.
Course outcome:	Upon completion of the course, successful completion of exercises, and passing the exam, the student will be familiar with a series of diagnostic and therapeutic procedures used in the daily operations of a medical-biochemical laboratory in clinical diagnostics with various biological materials. The student will be trained for the proper use, extraction, transport, and storage, and will understand methods of their examination in clinical practice. Most importantly, the student will understand the fundamental concepts related to conducting the analysis itself, potential variations in laboratory test results due to the influence of a range of external factors, and the interpretation of analysis results. Additionally, the student will understand the importance of introducing GLP (Good Laboratory Practice) and the standards ISO 17025 and ISO 15189:2014.
Course content:	<i>Lectures</i> The notion of a medical-biochemical laboratory, laboratory medicine, preanalytics, laboratory diagnostics; biological materials, their significance, and appropriate measures for sampling, storage, and transport; the importance of proper patient preparation and the impact of preanalytical variables on the quality of biological material; types of patient preparation; patient preparation and sampling procedure; quality control of the collected sample; related analyses, related conditions, analysis methods; explanation of analysis; reference values; lowered and elevated serum concentration values; false decreased and false increased values; Impact of medications (with listed generic drug names that affect laboratory values in terms of decreasing or increasing values); Analysis: Aacidum uricum (uric acid), Activated partial thromboplastin time (APTT), Alanine aminotransferase (ALT) or Serum glutamate-pyruvate transaminase (SGPT), Albumin, Alpha-amylase in serum, Alpha-amylase in urine, Alpha-fetoprotein (AFP), Alkaline phosphatase (ALP), Anti-thyroglobulin antibodies (Anti-Tg-At), Anti-thyroid peroxidase antibodies (Anti-TPO-At), Aspartate aminotransferase (AST) or Serum glutamate-oxaloacetate transaminase (SGOT), Bilirubin (total and direct), C-peptide, C-reactive protein (CRP), Dehydroepiandrosterone sulfate (DHEA-S), Erythrocytes (Er), Estradiol (E2), Fibrinogen, Follicle stimulating hormone (FSH), Inorganic phosphates (P), Glycated hemoglobin (HbA1c), Glucose (blood sugar), Gamma-glutamyl transferase (gamma-GT, GGT), Gamma-glutamyl transpeptidase (GGTP), Iron (Fe), HDL cholesterol (HDL-H), Hemoglobin (Hb), Chlorides (Cl), Cholesterol, Cholinesterase (HE), Growth hormone (GH), Human chorionic gonadotropin (hCG), Immunoglobulin A (IgA), Immunoglobulin E (IgE), Immunoglobulin G (IgG), Immunoglobulin M (IgM), Insulin, Calcium (Ca), Potassium (K), Carcinoma antigen 15-3 (CA 15-3), Carcinoma antigen 19-9 (CA 19-9), Carcinoma antigen 125 (CA 125), Carcinoembryonic antigen (CEA), Acid phosphatase (AcP), Prostatic acid phosphatase (AcP-P), Cortisol, Creatinine, Creatine kinase (CK), Creatine kinase-MB (CK-MB), Lactate dehydrogenase (LDH), Leukocytes (Le), Luteinizing hormone (LH), Magnesium (Mg), Sodium (Na), Parathyroid hormone (PTH), Progesterone (Ps), Prolactin (PRL), Prostate-specific antigen (PSA), Total proteins, Prothrombin time (PT), Free thyroxine (FT4), Free triiodothyronine (FT3), Testosterone, Thyroxine (T4), Triglycerides, Triiodothyronine (T3), Total iron-binding capacity (TIBC and UIBC), Platelets (Tr), High-sensitivity C-reactive protein (hsCRP), High-sensitivity thyroid-stimulating hormone (hcTSH), Urea, Urine. <i>Exercises</i> Introduction to laboratory diagnostics. Organization of laboratory work. Types of biological materials. Medical waste management; ISO15189 standard. Biological material collection and processing. Demo exercises: selected biochemical and immunochemical analyses. Microbiological sample collection and processing Urinalysis. Analysis of the impact of external factors on the values of selected analysis.
Literature:	<i>Literature in English:</i> - Guder Samples W. G.: From the patients to the laboratory-the impact of preanalytical variables on the quality of laboratory results, textbook, GIT Verlag, Darmschtate, 2001 - Marshall W. J., Bangert S.K.: Clinical Chemistry, Edinburgh Mosby, Edinburgh, 2004 - Morrow A. S.: Diagnostic and Therapeutic Technic: A Manual of Practical Procedures Employed in Diagnosis and

Treatment, Forgotten Books, London, 2019

Literature in Serbian:

4. Ubavić M.: Interpretacija najčešćih laboratorijskih analiza i uticaj lekova na njih, udžbenik, Novi Sad, 2017

5. Kladnik J. B.: Farmakologija, udžbenik, Visoka zdravstvena škola univerziteta u Mariboru, Maribor, 2006

Number of classes:

Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching:

lectures using different video material, exercises, case study, discussion, clinical practice.

Grading (maximum 100 points)

Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums	20		

DIETARY ISSUES AND NUTRITION OF INPATIENTS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Dietary Issues and Nutrition of Inpatients				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, third semester				
ECTS: 5				
Requirement: no				
Course objective: The course should enable student to acquire knowledge on specific forms of nutrition of certain groups of patients, familiarization with biological valued of certain nutritional components and planning nutrition in line with physiological needs.				
Course outcome: Upon the completion of the course student should be able to assess the status of nourishment of individuals and population groups and to determine diets depending on the specific features of consuming groups.				
Course content: <i>Lectures</i> Familiarization with appropriate diet. Preventive clinical approach to appropriate nutrition, familiarization with method of evaluation of nutritional status. Measures in nutrition evaluation and improvement. Health aspects of nutritional disorders, nutritional deficits and diseases caused by excessive food intake. Nutrition in specific circumstances. Nutrition and health, importance of appropriate nutrition on certain stages of organism development, principles of appropriate nutrition, standards. Metabolism, need for and biochemical function of nutritional and protective components (proteins, lipids, carbohydrates, minerals, oligoelements, vitamins). Diseases caused by inadequate nutrition. Principles of adequate nutrition and population education. Nutrition as a cause of disease and pathological factor. Principles of control of food safety and quality. Basics of medical nutritional therapy and education of patients. Sanitary control of facilities, employees, food staples and prepared food. <i>Exercises</i> Principles of nutrition in public places (nurseries, pre-school and school cafeterias, student dormitories, senior citizen institutions, public institution restaurants). Nutrition in hospitals, rehabilitation institutions, recreational centres, tourist and sports facilities. Principles of adequate nutrition and population education. Nutrition as a cause of a disease and pathological factors. Principles of food safety and quality control. Basics of medical nutritional therapy and education of patients. Nutrition of patients in hospital and non-hospital institutions and types of diet. Parenteral nutrition. Nutrition of children and the youth, pregnant and breastfeeding women and elderly persons. Obesity and undernutrition. Exercises, among other things, include drawing up nutrition plans for designated groups of patients practical classes.				
Literature: <i>Literature in English:</i> 1. Nelms M., Long Roth S.: Medical Nutrition Therapy: A Case Study Approach, Cengage Learning, Boston, 2013 <i>Literature in Serbian:</i> 2. Novaković B., Mirosavljev M., Jevtić M.: Higijena ishrane, udžbenik, Medicinski fakultet, Univerzitet u Novom Sadu, 2005 3. Grujić R.: Nauka o ishrani čovjeka, TEMPUS, Banja Luka, 2006 4. Ministarstvo zdravlja Republike Srbije: Vodič dobre prakseu oblasti sanitarnog nadzora, Beograd, 2005				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	30			
Colloquiums/exam	30			

ETHICS IN HEALTH CARE

Study program:	Physiotherapy			
Type and level of study:	undergraduate professional studies			
Course:	Ethics in Health Care			
Language of instruction:	Serbian			
Course status:	mandatory			
Semester:	first year, first semester			
ECTS:	5			
Requirement:	no			
Course objective: Acquisition of basics of applied medicine ethics, understanding practical importance of ethics and recognizing differences between ethical and legal issues, development of critical thinking in the process of ethical analysis, understanding national, European and international legal regulations, knowing rights and responsibilities in health protection, health insurance, as well as knowing rights and responsibilities of providers of medical services, their beneficiaries and of the third party.				
Course outcome: After passing the exam, students will be able to critically think on normative and ethical principles, they will know the difference between legal and ethical issues, be able to make critical judgements at provision of health-care services if they include moral duties and will be able to understand laws regulating aspects of health-care activities, rights and responsibilities of health-care professionals, patients and the third party.				
Course content: <i>Lectures</i> Normative ethics in medicine; ethical principles of importance for health-care professionals; theories of medical ethics; ethical norms in medical practice; ethical case studies in health-care practice, moral values, misjudgment; mistakes in practice, moral and criminal liability of health-care professionals; ethical judgement in observance of moral values and rights of patients; non-observance of codified principles; ethics in preclinical and clinical studies (basics); ethics committee; European and international regulations; national health-care policy; Serbian Medical Chamber; medical license; court of honor. <i>Exercises</i> Analysis and discussion on case studies (information and data generation and critical assessment). Problem-based learning (problem-solving with appropriate explanation of ethical concept and legal framework). Panel discussions, application of ethics and laws in current issues (drug testing, suicide, placebo, euthanasia, keeping confidential information on patient and medicine).				
Literature: <i>Literature in English:</i> 1. Fregmen B. F.: Medical Law and Ethics, textbook, Prentice Hall, New Jersey, 2011 <i>Literature in Serbian:</i> 2. Marić J.: Medicinska etika, autorsko izdanje, Beograd, 2008 3. Nenadović M.: Medicinska etika, Medicinski fakultet, Priština, 2007 4. Grujić V., Martinov Cvejin M., Legetić B.: Socijalna medicina, udžbenik, Medicinski fakultet, Novi Sad, 2001 5. Lazarević A.: Socijalna medicina, autorsko izdanje, 2005 6. Zakoni i podzakonska akta Republike Srbije iz oblasti zdravstva				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, workshops, case study, problem-based learning, exercises.				
Grading (maximum 100 points)				
Pre-Exam obligations		Points	Final Exam	Points
Lecture attendance		3	Exam	40
Activity		7		
Projects/Seminars		0		
Exercises/professional practice		20		
Colloquiums		30		

FIRST AID

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: First Aid				
Language of instruction: Serbian				
Course status: mandatory				
Semester: second year, third semester				
ECTS: 5				
Requirement: no				
Course objective: Principal goals of first aid education is familiarization of students with principles of initial care of suddenly injured or fallen ill persons, acquisition of skills for practical application of the acquired knowledge in practice, immediate life-saving care of a casualty, other persons, to preserve the environment and to improve protection from further injuries and hazards.				
Course outcome: Familiarization of students with the forms of sudden ailments and injuries and methods of prompt and immediate care; skills in examination and prompt recognition of signs and symptoms in sick or injured persons requiring immediate and urgent care.				
Course content: <i>Lectures</i> Examination and triage of the injured; evacuation of the injured (taking out, carrying out and transport); assessment of vital functions and state of consciousness; airway opening and keeping; bolus obstruction – partial, total, procedure algorithm in adults and children; artificial respiration – expiratory airflow; recovery positions of abruptly injured or sick person (side – relaxing, semi-side, stomach, semi-laying, semi-sitting, sitting, knee-elbow, kneeling, autotransfusion); cardiac arrest – identification and resuscitation measures in adults and children; application of semiautomated external defibrillators (AED); procedure algorithm – basic resuscitation measures in adults and children; bleeding – identification and procedures in external and internal bleeding; traumatic amputation care procedure; open injuries (wounds) – care; bone and joint system injuries (notion, types); temporary immobilization; head and vertebral column injuries; thoracic rib and stomach injuries; care procedures; complications and their prevention; injuries caused by heat and electricity, care; injuries caused by the cold, care; specific injuries, diseases and conditions, care. <i>Exercises</i> Examination and triage of the injured. Evacuation of the injured (taking out, carrying out and transport). Assessment of vital functions and state of consciousness. Airway opening and keeping. Bolus obstruction – partial, total, procedure algorithm in adults and children. Artificial respiration – expiratory airflow. Recovery positions of abruptly injured or sick person (side – relaxing, semi-side, stomach, semi-laying, semi-sitting, sitting, knee-elbow, kneeling, autotransfusion). Cardiac arrest – identification and resuscitation measures in adults and children. Application of semiautomated external defibrillators (AED). Procedure algorithm – basic resuscitation measures in adults and children. Bleeding – identification and procedures in external and internal bleeding. Traumatic amputation care procedure. Open injuries (wounds) – care. Bone and joint system injuries (notion, types). Temporary immobilization. Bone and joint system injuries (notion, types). Bone and joint system injuries (notion, types). Care procedures. Complications and their prevention. Injuries caused by heat and electricity, care. Injuries caused by the cold, care. Specific injuries, diseases and conditions, care.				
Literature: <i>Literature in English:</i> 1. Cydulka R., Cline D., Ma O. J., Fitch M., Joing S., Wang V.: Tintinalli's Emergency Medicine Manual, McGraw-Hill Education, New York, 2017. 2. Hammond B. B., Zimmermann P. G.: Sheehy's Manual of Emergency Care: Sheehy's Manual of Emergency Care, Mosby, London, 2012. 3. Carsten Lott i sar.: Advanced life support course manual, European resuscitation council, textbook, ERC guidelines 2015. 4. Advanced First Aid, CPR, and AED, American Academy of Orthopaedic Surgeons (AAOS), Jones & Bartlett Learning, 2017. <i>Literature in Serbian:</i> 5. Pavlović A.: Prva pomoć, udžbenik, Obeležja, Beograd, 2007. 6. Kalezić N. i sar.: Inicijalni tretman urgentnih stanja u medicini, udžbenik, Medicinski fakultet, Beograd, 2016. 7. Vučović D.: Urgentna medicina, udžbenik, Obeležja, Beograd, 2002. 8. Newton C. R. H., Khare R. K.: Urgentna medicina, Besjeda, Banja Luka, 2007. 9. Pavlović A.: Kardiopulmonalna reanimacija, Obeležja, Beograd, 2007.				
Number of classes				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching:				

lectures, exercises, case studies; e-learning, exercises on dummy; visits of accredited specialists.			
Grading (maximum 100 points)			
Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums	20		

FUNCTIONAL ANATOMY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Functional Anatomy				
Language of instruction: Serbian				
Course status: mandatory				
Semester: second year, third semester				
ECTS: 3				
Requirement: Anatomy and Physiology				
Course objective: Adoption of theoretic and practical knowledge on construction and function of human body with an emphasis on the musculoskeletal system.				
Course outcome: Familiarization with the area of functional anatomy and application of the acquired knowledge in the area of physiotherapist skills and medical rehabilitation.				
Course content: <i>Lectures:</i> Introduction into human anatomy; osteology: bone construction, external form and interior architecture of bones relating to the function, torso skeleton, pelvis, thorax, shoulder girdle and upper limbs; lower limb skeleton; head bones; syndesomology: immovable and movable bone joints; functional division of joints; articulations within organism; Rib movement mechanics; construction and action of articulations and joints; myology: muscular structure, biological reaction of muscles, movement analysis; nervous system; senses; cardiovascular system; bloodstream; lymphatic system, digestive system; respiratory system; urogenital system; endocrine system. <i>Exercises:</i> Cell injury and death; etiopathogenesis of inflammation; cell malignant transformation and its growth; water, sodium and potassium transport disorders; disorders of calcium, magnesium and phosphate metabolism; etiopathogenesis of mellitus diabetes, atherosclerosis, acid-base balance; balance disorders of cardiovascular system, respiratory system, renal function, nervous function, endocrine gland function and neuroendocrine regulation, digestive tract and liver function, blood composition and function.				
Literature: <i>Literature in English:</i> 1. McMinn R. M.: Lat s Anatomy, Churchill-Livingstone, Edinburg, 2006. 2. Netter F. H., Machado C. A. G.: Atlas of Human Anatomy & CD, ILS, Mala velika knjiga, Novi Sad, 2005. <i>Literature in Serbian:</i> 3. Mihalj M.: Anatomija čoveka, udžbenik, Zmajeva biblioteka izdanja, Novi Sad, 2005. 4. Bošković M.: Anatomija čoveka, deskriptivna i funkcionalna, udžbenik, Medicinska knjiga, Beograd, 1973. 5. Keros P., Ivančić-Košuta M.: Funkcionalna anatomija lokomotornog sustava, Kineziološki fakultet, Univerzitet u Zagrebu, 2009. 6. Stojišić Džunja Lj.: Anatomija za studente zdravstvene nege, Medicinski fakultet, Novi Sad, 2017. 7. Spasovski D.: Funkcionalna anatomija čoveka, Naša knjiga, Beograd, 2009.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	15	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case study, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums/exam	30			

GERIATRICS WITH NURSING IN GERIATRICS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Geriatrics with Nursing in Geriatrics				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, first semester				
ECTS: 5				
Requirement: no				
Course objective: Students will acquire knowledge and skills in nursing of senior citizens, understand their bodily, social and psychological needs and problems, be familiar with the possibilities of taking care of them in institution or at their home.				
Course outcome: Upon the course completion student should be able to recognize specific problems of the old, evaluate their functional abilities and possibilities of self-care, train them in self-care and treatment in senior citizens institutions and geriatric hospitals.				
Course content: <i>Lectures</i> The notion of gerontology and geriatrics; physical, psychological and social aspect of getting old; recognition of problems of the old; theories of getting old, specific way of defining getting old, health issues, old-age illnesses, prevention of complications, treatment, nursing and rehabilitation; care categorization, therapeutic procedure, specific features of communication; most frequent health issues of the old, their prevention and treatment; the role of nurse in health protection and nursing of the old; specific features of nursing in senior citizen institutions and geriatric centers; specific features of medical rehabilitation of old persons; institutions taking care of the old; direction of geriatrics development in the EU; importance of psychical rehabilitation of the old; everyday life activities; psychophysical activity, elimination of the feeling of being deserted; team activities, past time activity organization, artistic and sports activities; care of local community for improvement of life of senior citizens (associations, day centers); gerontology centers, work organization, activities within centers; work in gerontology centers in Serbia and EU countries; importance of prevention; palliative care and work with families; education of population in volunteering; familiarization with social protection of old persons. <i>Exercises</i> Changes in certain body systems and organs due to getting old, basic human needs and getting old, evaluation of functional abilities and possibilities of self-care, most frequent health issues of the old, education in self-care and treatment. Specific features of the old patient population. Nursing of old persons, work in gerontology center. Organization of old person workshop. Importance of prevention. Assessment of conditions for home care. Cooperation with social work centers. Visiting senior citizens' clubs. Demonstration of nursing procedures at home; education of families in taking care. Preparation of old persons and their accommodation in an institution. Training family in visiting and preparation for return home. Practical application of tests (fall prevention Katz index, Norton and Branden Scale – patient risk for pressure ulcer development etc.).				
Literature: <i>Literature in English:</i> 1. Boltz. M.: Evidence-Based Geriatric Nursing Protocols for Best Practice, Springer Publishing Company, New York, 2012. 2. Halter J. B., Ouslander J. G., Tinetti M., Studenski S., High K. P., Asthana S.: Hazzard's Geriatric Medicine and Gerontology (Principles of Geriatric Medicine & Gerontology), textbook, McGraw-Hill Education, New York, 2009. 3. Warshaw G., Potter J., Flaherty E., McNabney M. K., Heflin M. T., Ham R.: Ham's Primary Care Geriatrics, textbook, Elsevier, New York, 2021. 4. Taylor R.: Oxford Handbook of Palliative Care, Oxford Press, Oxford, 2009. <i>Literature in Serbian:</i> 5. Vukadinov J.: Gerijatrija i nega starih osoba, udžbenik, Medicinski fakultet, Novi Sad, 2006. 6. Šarenac D.: Zdravstvena nega starih, udžbenik, Licej, Beograd, 2009. 7. Stavljenić – Rukavina A., Renato Mitermayer R., Tomek Roksandić S., Mustajbegović J.: Kvaliteta dugotrajne skrbi starijih osoba, Centar za gerontolgiju, Referentni centar Ministarstva zdravlja RH za zaštitu zdravlja starijih osoba, priručnik, Zagreb, 2012. 8. Dujaković Z. i sar.: Gerijatrija - medicina starije dobi, udžbenik, Medicinska naklada, Zagreb, 2008.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures using different video materials, exercises, workshops, clinical practice, visits of teaching base employees.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	

Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums	20		

HEALTH CARE AND SOCIAL-SECURITY LEGISLATION

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Health Care and Social-Security Legislation				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, sixth semester				
ECTS: 5				
Requirement: no				
Course objective: Mastering basic legal concepts in the field of health legislation. Familiarizing students with the legal aspect of health care while developing professional awareness, responsibility, and humanity.				
Courses outcome: Upon the completion of the course and passing of the exam the student will be able to define the basic concepts of health care legislation; list the main aspects of the Law on Health Insurance and Health Care Protection, as well as the basic legal aspects of nursing; explain the organization of the Chamber of Health Care Professionals; and to outline the procedures for acquiring, renewing and revoking licenses for health care professionals. Additionally, the student will be able to identify indicators of health care quality and understand and explain the rights and responsibilities of health care professionals.				
Course content: <i>Lectures</i> The Law on Health Care Protection - basic provisions related to health care rights, participants in health care, health care activities, health care system, and financing of health care; principles of health protection; The Law on Health Insurance; The Law on Social Protection; Regulation on detailed conditions for performing health activities; Regulation on the internal organization of health care institutions; patient rights; legal regulations for the protection of the population from infectious diseases; legal aspects of the nursing profession; elements of the draft law on nursing; Law on Chambers, acquisition, renewal, and revocation of licenses for health care professionals; legal aspects of continuous medical education; Regulation on health care quality indicators; legal aspects of professional supervision and (re)accreditation processes of health care institutions; legal aspects of occupational health and safety; the specifics of health and social legislation relating to the area of health care from the perspectives of the patient, nurse, health institution, state, and society. <i>Exercises</i> During exercise sessions, a comparative analysis of legal aspects primarily in health care is conducted, comparing them to solutions from other countries in the region and the EU, as well.				
Literature: <i>Literature in English:</i> 1. Mossialos E., Permanand G., Baeten R., Herve T.: Health systems governance in Europe: the role of European Union law and policy, Cambridge University Press, 2010 2. De Gooijer R.: Trends in EU Health Care Systems, Winfried, 2007 3. Morrissey M. A.: Health Insurance, textbook, Health Administration Press, London, 2007 4. Beik Janet I.: Health Insurance Today: A Practical Approach, textbook, Saunders, Philadelphia, 2010 5. Fregmen B. F.: Medical Law and Ethics, Prentice Hall, New Jersey, 2011 <i>Literature in Serbian:</i> 6. Lazarević A. i sar.: Javno zdravlje, socijalna politika i zdravstvena zaštita, udžbenik, Beograd, Visoka zdravstvena škola strukovnih studija, Beograd, 2016 7. Aktuelni zakoni i podzakonska akta Republike Srbije iz oblasti zdravstva 8. Lazarević A.: Socijalna medicina, autorsko izdanje, Beograd, 2015 9. Simić S. i sar.: Socijalna medicina, udžbenik, Medicinski fakultet, Beograd, 2012 10. Šolak Z.: Ekomnomika zdravstvene zaštite, Zavod za udžbenike i nastavna sredstva, Beograd 2003 11. ICN regulativa i regulativa EU koje se odnose na sve aspekte leka, zdravstvenog osiguranja i prava i obaveza u pružanju zdravstvene zaštite, 2012				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, workshops, case studies, problem-based learning, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			

Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums	30		

HEALTH CARE EDUCATION METHODOLOGY AND HEALTH PROMOTION

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Health Care Education Methodology and Health Promotion				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, second semester				
ECTS: 5				
Requirement: no				
Course objective: The purpose of health promotion in pre-schools and schools is the adequate development of children and the youth, so that they can grow into healthy, satisfied, successful, self-aware and responsible individuals. In addition to that, the objective of the course is to equip students to understand the role of both the health and non-health sectors and the ways in which they are actively integrated in the process of health promotion.				
Course outcome: Upon completion of the course and passing the exam, the student will possess skills necessary for work with health care and professionals and other community members, groups and individuals in carrying out on health promotion. Above all they will understand the importance of health care education and health promotion, especially for the successful development of preschool children, schoolchildren, and the youth.				
Course content: <i>Lectures</i> The definition and concept of health care promotion, principles and strategies; the promotion of health and health education in strategic documentation; environments for health promotion implementation ("Healthy City", "Healthy Kindergarten", "Healthy School"...); populational and high-risk strategy for prevention of chronic non-communicable diseases (cardiovascular diseases, diabetes, breast cancer, etc.); behavioral and biological risk factors for the onset of chronic non-communicable diseases; the importance of health promotion in the prevention of infectious diseases (sexually transmitted diseases, lice, viral diseases, measles, COVID-19, etc.); models of behavior which explain changes that lead to health; health education - definitions, goals, methods, and resources; structure of preventive-promotional programs in preschool and school institutions; maternity schools; preschool and school programs; training marginalized groups of people (homeless, Roma, safe houses, etc.); content and organization of work in Health Promotion Centers of public health institutes; evaluation of the health promotion program; continuous medical education for health care professionals. <i>Exercises</i> Work in pairs and small groups. Organizing lectures with discussions and panel debates. Pedagogical workshops. The development of opinions in discussions and debates. Case analysis. Use of available and appropriate content from internet resources. Visits of representatives of preschools and schools. Joint work on health promotion projects. Workshops. Existing project (city, provincial, national) analysis focused on health promotion and improvement. Comparative analysis of similar promotional campaigns in the region and the European Union. Joint activities with the Institute for Youth Protection. Visits by guests from safe houses. Collaborative work and visits by representatives of student organizations (senior students). Examples of health promotion campaigns in Serbia and the region.				
Literature: <i>Literature in Serbian:</i> 1. Kekuš D.: Zdravstveno vaspitanje, udžbenik, Digital art, Beograd, 2009. 2. Hojer S.: Pristupi i metode u zdravstvenom odgoju, udžbenik, Koledž zdravlja, Ljubljana, 2005. 3. Gerlič I.: Savremene informacione tehnologije u obrazovanju, Nacionalna izdavačka kuća Slovenija, Ljubljana, 2000. 4. Kekuš D.: Komunikacije u profesionalnoj praksi zdravstvenih radnika, Digital Art, Beograd, 2010. 5. Jović S., Bašić S.: Promocija zdravlja i zdravstveno vaspitanje; u: Socijalna medicina sa epidemiologijom i higijenom. Medicinski fakultet Niš, Galaksija, Lukovo, 2011. 6. Pokorn D.: Ishrana u različitim fazama života: dodatak ishrani u ishrani, Maribor/Ljubljana, 2003. 7. Novaković B. Grujić V.: Higijena i zdravstveno vaspitanje, udžbenik, Medicinski fakultet, Novi Sad, 2006. <i>Literature in English:</i> 8. Maville J. A., Huerta C. G.: Health Promotion in Nursing, textbook, Cengage Learning, London, 2012. 9. Glanz K., Rimer B. K., Viswanath K.: Health Behavior and Health Education: Theory, Research, and Practice, textbook, Jossey-Bass, New Jersey, 2008. 10. Poland B., Green L. W., Rootman I.: Settings for Health Promotion: Linking Theory and Practice, Thousand Oaks, Sage, 2000.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching: lectures using didactic methods, exercises, workshops, field work, seminar papers.			
Grading (maximum 100 points)			
Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	30		
Colloquiums	30		

HUMAN RESOURCES MANAGEMENT IN HEALTH CARE

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Human Resources Management in Health Care				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, sixth semester				
ECTS: 5				
Requirement: no				
Course objective: Familiarization of students with the concept of human resources management. The intention of the course is to present to students principal issues in human resources management and segments of manager activities, with human resources management as one of most important. The final goal of the course predominantly determines the selection of contents (topics) and method or classes realization.				
Course outcome: Students will be able to apply the acquired knowledge in human resources management within their future profession.				
Course content: <i>Lectures</i> Introduction to management and human resource management; differences between management and leadership; basic concepts and functions of management; management in healthcare; management in nursing; main activities of personnel management and human resources management; differences between human resources management and personnel function; social protection in industry; recruitment and selection; adoption of other personnel activities; legislation; flexibility and diversity; information technology; professional associations of personnel members; human resources management; main characteristics of human resources management; issues of human resources management concept; human resources management marketing; human resources strategy and planning; strategy devising process; human resources planning; anticipation of human resources demand; job analysis; evaluation of internal and external human resources supply; unemployment; underqualification; competition; geographical factor; assets; development; rewarding; relations with employees; the European Union: recruitment procedures; job description and person specification, competence profile; person specification, competence profile in the recruitment context; vacancy advertising; targeted recruitment; administrative procedures; supplementary selection techniques; psychological testing; recommendations; health check; relations in employment; rights and responsibilities of both parties; Law on Employment; retirement; payment for work done or performance evaluation; role of employer; impact of personal problems on the job; confidentiality; counseling skill; communication process; communication in the health care system; hierarchical communication levels; protection at work; working time regulation in the EU; risk assessment; partnership and involvement of employees; employee involvement techniques; basic characteristics of disciplinary procedure; absence control; the role of human resources manager; dismissal and redundancy; fixed-term service agreement; illegal dismissal; rights of dismissed employees; work abroad. <i>Exercises</i> CV analysis – case studies. Recruitment of potential candidates, candidate selection – simulation. Employee training – workshop; coaching – simulation. Feedback – simulation. Leadership, difference between leader and director, leader's skills – workshop, simulation. Individual and group business meetings – simulation. Team spirit and team-building – workshop. Evaluation of employees' performance, employee personal development plan – case study and simulation. Motivation – workshop. Defining rule system, positive and negative bonus – workshop. Leaving the company, agreement termination, dismissal – workshop, simulation. Change of employee position, recognizing employee's potential and optimum job positions – workshop. Visits from economic sector (director of a successful company with a great number of employees).				
Literature: <i>Literature in English:</i> 1. Beik J. I.: Health Insurance Today: A Practical Approach, Saunders, Philadelphia, 2010. 2. Flynn W. J., Mathis R. L., Jackson J. H.: Healthcare Human Resource Management, textbook, Cengage Learning, Boston, 2006. <i>Literature in Serbian:</i> 3. Legetić B.: Principi menadžmenta, udžbenik, Ekonomski fakultet, Subotica, 2007. 4. Marinković Lj.: Menadžment u zdravstvenim organizacijama, G.A.D. Beograd, 2001. 5. Mićović P.: Zdravstveni menadžment, Obeležja, Beograd, 2008. 6. Vujić D.: Menadžment ljudskih resursa i kvalitet, Centar za primenjenu psihologiju društva psihologa Srbije, Beograd, 2003. 7. Probbins S., Judge T.: Organizaciono ponašanje, Mate, Zagreb, 2009. 8. Frančesko M.: Kako unaprediti menadžment u preduzeću, Novi Sad, Prometej, 2003.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching:

lectures, practical exercises, workshops, discussion, simulation, case studies analysis from practice, e-learning.

Grading (maximum 100 points)

Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums	30		

HYGIENE WITH THE BASICS OF MICROBIOLOGY

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Hygiene with the Basics of Microbiology
Language of instruction:	Serbian
Course status:	mandatory
Semester:	first year, second semester
ECTS:	5
Requirement:	no
Course objective:	Acquisition of knowledge on health-care training process as a measure of health protection at all levels, familiarization with principles, objectives and methods of application of health-care educational measures and impact on change of risky behavior of individual, family and community. Development of interest of student in his/her permanent professional and general education, that its, training of health-care professional in risk management in health-care institutions. Familiarization with cell organization and main characteristics of bacteria, viruses and parasites.
Course outcome:	Students acquire practical knowledge on professional competencies within their profession, on the analysis and management of risk in health-care institutions regarding hygiene and protection of health of medical professionals and beneficiaries of health-care services at all levels of health protection. Additionally, upon completion of the course and passing of the exam, the student will be familiar with cellular organization and basic characteristics of bacteria, viruses, and parasites.
Course content:	<i>Lectures</i> Lectures Hygiene and health; hygiene requirements in planning and construction of health care institutions; illumination, ventilation and heating in health care institutions; air quality in health care institutions; water and health; health safety of drinking water; water supply of health care institutions; disinfection of drinking water; disposal of solid and liquid waste; disposal of medical waste; personal hygiene of health care professionals: hand hygiene and personal protection substances; hygiene procedures in maintaining hygiene of sick persons; hygienic-epidemiologically adequate solutions of sanitary area; hygienically adequate treatment of hospital laundry; hygienic requirements for kitchens and food distribution; application of HACCP system in food and drinking water handling; international and Serbian legislation in the area of food and general use objects safety; risk management in health care institutions; determining critical spots in health care institutions; epidemiological importance of defining critical spots and critical spot control plan in health care institutions; disease prevention; widely applicable international and national legislation on food safety; carrying out health care educational intervention – professional nurse in the health care system; general bacteriology; microorganism classification, anatomy and physiology of bacterial cell, bacteria metabolism, action of physical and chemical agents on microorganisms; pathogenicity and virulence factors, antibiotics, antimycotics and chemotherapeutics, physiological importance of microflora, rapid diagnostic tests and molecular methods in microbiology; general and special virusology: general features of viruses, action of physical and chemical agents on viruses; pathogenesis and control of virus infections, interferons and antiviral drugs, laboratory diagnostics, DNA and RNA and viruses of importance for human pathology; parasitology. <i>Exercises</i> Planning hygienic requirements for health care institutions. Presentation of test results and air quality evaluation. Air sampling methods in health care institutions. Presentation of test results and evaluation of health safety of water. Disinfection of drinking water. Drinking water sampling methods. Environmentally adequate disposal of medical waste. Preparation for seminar paper: monitoring personal hygiene of health care professionals. Presentation of seminar paper in the area of monitoring personal hygiene of health care professionals. Drawing up HACCP system for kitchens in health care institutions. Determining critical spots in health care institutions. Demonstration of health care institution functioning in terms of hygienic requirements – field visit. Demonstration of functioning of microbiology institution and involvement in microbiological analysis.
Literature:	<i>Literature in English:</i> 1. Weston D.: Infection Prevention and Control: Theory and Practice for Healthcare Professionals, John Wiley & Sons, New York, 2008. 2. Andersen B. M.: Prevention and Control of Infections in Hospitals, textbook, Practice and Theory, Springer, Berlin, 2016. 3. Tortora Gerard J., Funke Berdell R., Case Christine L.: Microbiology: An Introduction, textbook, Books a la Carte Edition, Benjamin Cummings, New York, 2009. <i>Literature in Serbian:</i> 4. Novaković B., Grujić V.: Higijena i zdravstveno vaspitanje, udžbenik, Medicinski fakultet, Novi Sad, 2005. 5. Kekuš D.: Zdravstveno vaspitanje, udžbenik, Digital art, Beograd, 2009. 6. Kristoforović-Ilić M.: Higijena sa medicinskom ekologijom, udžbenik, Ortomedics, 2003. 7. Baračkov N., Bujak J., Ilić D., Jović S., Panić M. i sar.: Vaspitanje za zdravlje kroz životne vještine, Ministarstvo prosvete i sporta Republike Srbije, 2007.
Number of classes:	

Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	330	0	0
Methods of teaching: lectures, practical classes, discussion, problem-solving, clinical practice.				
Grading (maximum 100 points)				
Pre-Exam obligations		Points	Final Exam	Points
Lecture attendance		3	Exam	40
Activity		7		
Projects/Seminars		0		
Exercises/professional practice		20		
Colloquiums		30		

MANUAL THERAPY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Manual Therapy				
Language of instruction: Serbian				
Course status: mandatory				
Semester: second year, fourth semester				
ECTS: 4				
Requirement: no				
Course objective: Application of appropriate manual techniques to different pathological conditions.				
Course outcome: Students will be able to apply an adequate manual technique for the purpose of functional training in treatment of various conditions of the musculoskeletal system. Acquisition of manual techniques and therapeutic procedures of pain elimination, increase of mobility, movement limitation and self-help, as well as techniques of manual mobilization of locomotor system.				
Course content: <i>Lectures</i> The area of application of manual therapy in the entire physiotherapy treatment. General principles of manual therapy. Joint classification. Position of joints and extremities. Anatomical planes and axes. Joint treatment planes and movements. Assessment of joint mobility. Assessment of surrounding soft tissue. Specific procedures of assessment in manual therapy. Fundamental rules of manual therapy treatment. Content of manual therapy. Biomechanical and functional assessment. Therapeutic procedures of pain elimination. Therapeutic procedures aimed at boosting mobility. Therapeutic procedures aimed at movement limitation. Therapeutic procedures of self-help. <i>Exercises</i> Presentation of tests and techniques. Practising soft tissue mobilization. Presentation of tests and techniques and practising manual mobilisation of the cervical spine. Presentation of tests and techniques and practising manual mobilisation of the thoracic spine. Presentation of tests and techniques and practising manual mobilisation of the lumbar spine. Presentation of tests and techniques and practising manual mobilisation of the shoulder girdle. Presentation of tests and techniques and practising manual mobilisation of the sacroiliac joint. Presentation of tests and techniques and practising manual mobilisation of the upper extremities. Presentation of tests and techniques and practising manual mobilisation of the temporomandibular joint. Presentation of tests and techniques of specific joint manipulations. Principles, procedures and practising manual therapy aimed at pain reduction. Principles, procedures and practising manual therapy aimed at increasing range of movements. Reduction or elimination of soft tissue swelling. Principles, procedures and practising manual therapy of inflammations. Principles, procedures and practising manual therapy aimed at relaxation. Principles, procedures and practising manual therapy aimed at improved elasticity of the contractile and non-contractile tissue. Principles, procedures and practising manual therapy aimed at improvement of pulmonary system function.				
Literature: <i>Literature in English:</i> 1. Lucy Lidell: The Book of Massage: The Complete Step-by-Step Guide to Eastern and Western Technique, Atria Books, Boston, 2001. <i>Literature in Serbian:</i> 1. Popović Ž.: Knjiga o masaži, udžbenik, New Look Entertainment, New York, 2016. 2. Lidel L.: Nova knjiga o masaži, Panonija, Novi Sad, 2006.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	300	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums	30			

MARKETING OF HEALTH-CARE INSTITUTIONS

Study program:	Physiotherapy			
Type and level of study:	undergraduate professional studies			
Course:	Marketing of Health Care Institutions			
Language of instruction:	Serbian			
Course status:	elective			
Semester:	first year, second semester			
ECTS:	5			
Requirement:	no			
Course objective:	Students acquire basic knowledge in the area of marketing in health care, get familiar with modern methods of marketing strategies and manner of communication in health-care marketing. Accordingly, the primary course objective is to familiarize students with the genesis and goal of various areas of strategic marketing, including its dominant theories, which is necessary for successful development of activities. Students will also acquire knowledge on notions of marketing campaign, marketing plan designing and principal methods used in marketing of health care institutions, governmental bodies, or for the purpose of certain public campaigns and initiatives.			
Course outcome:	Upon the completion of the course, students will be able to understand strategic marketing in health care and be capable to independently conduct research of marketing methods convenient for solution of a specific project task in terms of health care institutions, governmental bodies, or in terms of public campaigns or initiatives. Students will also be competent to evaluate relevant theories of strategic marketing in different empirical contexts and to understand interconnection between marketing strategy, operative-organizational parts of enterprises and market results. Students will understand how to manage marketing campaign, notion of marketing plan designing and primary methods used in marketing.			
Course content:	<i>Lectures</i> Nature and character of marketing; evolution of marketing and approaches in studying it. Marketing management process; changes of marketing in health care institutions, government or governmental bodies. Presentation and analysis of marketing in health care. Marketing information system and market research; market analysis. Market segmentation and selection of targeted markets. Notion of public perception; importance of marketing in health care in strategic marketing: Market research; SWOT analysis, benchmarking and portfolio. BCG matrix.integrated marketing communications; promotional health campaigns; prevention, promotion of public health and marketing (examples of campaigns in Serbia or in the region: campaigns against smoking, diabetes, self-check promotions for breast cancer....). Value chain and cost efficiency; general principles of marketing (marketing mix, models, methods and marketing techniques). Designing promotional campaign plan; targeting; following post marketing campaign. Medical marketing practice code; general marketing and targeted marketing campaigns. Different types of marketing materials in health care, depending on the target audience. Marketing outsourcing, marketing agencies; printed material, printed media, billboards, electronic media, social networks. Direct marketing; fairs, conferences, meetings; public events, health festivals. Sponsorships. Website; promotional material; presentation; marketing and PR. Public appearances of employees, health care institution management, governmental bodies. Marketing in crisis or emergency situations. Public appearances of employees. Dress code. Appearance of employees, institution. <i>Exercises</i> Analysis and discussion on practical examples of marketing campaigns – workshops. Market segmentation and research; SWOT analysis, benchmarking and portfolio. Designing promotional campaign plans in health care – workshop on a given topic in health care. Analysis of examples of marketing campaigns in Serbia examples of workshops (e-learning, analysis of existing initiatives and public events) and globally, workshops, e-learning, internet searching. Marketing in health care in Serbia – workshop. Designing promotional campaign plan on a given topic in health care, targeting, marketing mix, marketing models, methods and techniques - workshop. Printed material, printed media, billboards, electronic media, social networks - conceiving material on given topic in health care, with a focus on the target group type. Direct marketing - simulation. Fairs, conferences, meetings, public events - workshop. Sponsorships. Website - workshop. Promotional material - workshop. Presentation; marketing and PR. Public appearance of employees. Dress code - visit. Appearance of employees, institution. Visits from business community (marketing or PR manager of health care institution, marketing or PR manager of a business organization).			
Literature:	<i>Literature in English:</i> 1. Berkowitz N. E.: Essentials of Health Care Marketing, textbook, Jones & Bartlett Learning, Boston, 2010. <i>Literature in Serbian:</i> 1. Kotler P.: Upravljanje marketingom, udžbenik, Mate, Zagreb, 2017. 2. Macura P.: Marketing – mikro, mala i srednja preduzeća, udžbenik, Ekonomski fakultet, Banja Luka, 2009. 3. Tasić Lj.: Farmaceutski menadžment i marketing, Nauka, Beograd, 2002. 4. Ljubojević Č. Ćirić M.: Marketing usluga, Novi Sad, 2017.			
Number of classes:				
Lectures	Exercises	Other classes	Study research work	Other forms of teaching

		(professional practice...)		(individual work with student, projects...)
30	30	0	0	0

Methods of teaching:

lectures, discussions, case study, workshop, visiting lectures of representatives of business community (marketing or PR manager of a health-care institution, marketing or PR manager of business organization), exercises, e-learning.

Grading (maximum 100 points)

Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/Professional practice	20		
Colloquiums	30		

MEDICAL GENETICS AND MOLECULAR BIOLOGY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Medical Genetics and Molecular Biology				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, third semester				
ECTS: 5				
Requirement: no				
Course objective: Familiarization of students with basic facts on the cell with a special focus on the importance of genetic factors in its functioning. The aim of the course is acquisition of a more extensive knowledge on the latest finding in the field of molecular and functional organization of the cell and to familiarize them with basic techniques used in the study of the cell.				
Course outcome: Upon the completion of the course, the student should be trained to apply the microscoping technique, describe and explain the structure and function of the cell as a basic unit of living organism structure, understand the organization of the processes in the cytoplasm and cell nucleus, describe and explain information transfer from DNA molecule through RNK to proteins, understand and explain mechanism of occurrence of mutations of genetic material (genotype) and to relate the said changes to an appropriate phenotype. Upon the completion of the course students are expected to understand principles on which modern research in the sphere of molecular biology is based, as well as to be trained and capable to apply the acquired knowledge in their future research work.				
Course content: <i>Lectures</i> Course concept. Methodology of research in cell biology and genetics. Main characteristics of the eukaryotic cell. Chemical composition and metabolism of the cell, Eukaryotic cell organization. Hereditary basis and its function. Changes in the structure of genes and chromosomes. The cell cycle and cell dying; gametogenesis, fertilization and biology of development. Gene and chromosome mutation. DNA and gene expression. DNA reparation mechanism. Immunobiology. Oncogenetics. Molecular bases of human diseases. Pharmacogenomics. Emergence and evolution of cell genetic systems. Folding, processing, distribution, functionality regulation, changeability, degradation and emergence of new types of proteins. Molecular, structural and functional correlation between cell components: cell membrane, cytoskeleton, organelles, nucleus, chromatin. Extracellular matrix and intercellular communication. Nuclear architecture (nuclear matrix, nuclear compartments, chromosome territories) and their role in gene expression. Evolutionary changes in genome organization. Human genome. Reception and transduction of signals in the cell: signal molecules and their receptor, intracellular pathways of transduction of signals, signal pathways communication, selectivity and specific features of bidirectional transport between the cytoplasm and the nucleus. Constitutive, inducible, tissue-based and time specific gene expression. Gene expression regulation at transcriptive, post-transcriptive and post-translational level. Families of transcription factors, their role and regulation mechanisms of their activity. Structural modification of regulatory proteins: phosphorylation, glycosylation, ADP-ribosylation, sumoylation, ubiquitination. Cell cycle regulation. Cell proliferation during development and differentiation. Programmed cell death – apoptosis. Basic principles of genetic engineering, application, cloning. <i>Exercises</i> Microscope and microscoping; size and form of cells, nuclei, embryonic cell origin; plasma membrane; cytoplasmic organelles; interphase nucleus, chromatin; cell division: mitosis and meiosis; transcription and translation; chromosomal aberrations and gene mutations; practical classes are organized as experimental and demonstrative audio-visual exercises; familiarization of students with the latest techniques in molecular biology.				
Literature: <i>Literature in English:</i> 1. Alberts B.: Molecular Biology of the Cell, Garland Science, New York, 2008. 2. Nussbaum R. L., McInnes R. R., Willard H. F.: Genetics in Medicine, Saunders, Philadelphia, 2007. 3. Lodish H., Berk A., Zipursky S. L., Matsudaira P., Baltimore D., Darnell J.: Molecular Cell Biology, W. H. Freeman & Co., New York, 2003. <i>Literature in Serbian:</i> 4. Diklić V., Kosanović M., Dukić S., Nikoliš J.: Biologija sa humanom genetikom, udžbenik, Grafopan, Beograd, 2001. 5. Kovačević Z. L.: Biohemija i molekularna biologija, udžbenik, Medicinski fakultet, Novi Sad, 2002. 6. Tripeni P., Elard S.: Emerijevi osnovi medicinske genetike, Data Status, Beograd, 2009. 7. Hristić M., Potparević B.: Praktikum iz biologije sa humanom genetikom, Farmaceutski fakultet, Beograd, 2005. 8. Đelić N., Stanimirović Z.: Principi genetike, Elit Medica, Beograd, 2004.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)

45	45	0	0	0
Methods of teaching: lectures, exercises, case study, demo laboratory exercises, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/Professional practice	20			
Colloquiums	30			

MEDICAL REHABILITATION

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Medical Rehabilitation				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, fifth semester				
ECTS: 10				
Requirement: no				
Course objective: Adoption of principles, ideas and philosophy of modern rehabilitation of sick and injured persons by applying all necessary measures and procedures aimed at a maximum possible recovery, return to living and working environment, resocialization and inclusion into family and society through holistic and individualized approach and interdisciplinary collaboration within rehabilitation team.				
Course outcome: By applying the adopted principles and philosophy of modern rehabilitation, through holistic considering of psychophysical-social integrity and individualization in the approach to sick or injured persons and by identifying their specific needs, students will be able to determine application of all required measures and procedures for successful accomplishment of the goal in the process of their recovery, resocialization and reintegration through inclusion into family and society by applying a possible primary, secondary and tertiary prevention of disability.				
Subjects content: <i>Lectures</i> Impacts of the living and working environment on psychophysical-social integrity of person; notion, importance and essence of rehabilitation of sick and injured persons; disability; idea, philosophy and development of rehabilitation; modern concept of rehabilitation; medicine-rehabilitation relationship; rehabilitation division; ethics and deontology; principles of rehabilitation; side effects and indication; holistic approach; individualization in approach; multidisciplinary approach, team work; specific features of disability by age – childhood and adolescence, productive age, retirement age; physical, psychical and social aspects of disability; disability and society; classifications and models: medical, social, inclusive; physical and social barriers; discrimination in family and society; accessibility; handicap; medical rehabilitation; methodology – physical medicine in rehabilitation; aids; adaptations and modifications of living, working and public environment; education; working ability evaluation; professional rehabilitation. <i>Exercises</i> Ethical and deontological principles. Attitude to profession, patient, disabled person. Familiarization with the organization of work of rehabilitation institution. Preparation for contact with patient. Introduction into medical documentation. Principles of rehabilitation. Holistic approach. Individualization in approach; professional attitude; team work; tasks of team therapist. Team therapist documentation. Familiarization with work of other team members. Coordination. Rehabilitation plan and program. Handicap condition evaluation. Architectural-technical and social barriers. Accessibility. Continuous motion chain. Everyday activities. Adaptation of living, working and public environment. Aids. Evaluation of ability to work. Pre-professional rehabilitation. Familiarization with disabled persons association. Direct contact with persons with disabilities, members of associations.				
Literature: <i>Literature in English:</i> - Gonzales E.: Physiological Basis of Rehabilitation Medicine, Butterworth Heinemann, Boston, 2001. - Shatzer M.: Physical Medicine and Rehabilitation, textbook, LWW, Liverpool, 2012. - Weiss L., Lenaburg H., Weiss J.: Physical Medicine and Rehabilitation, textbook, Demos Medical, London, 2017. <i>Literature in Serbian:</i> - Nedvidek B.: Osnovi fizikalne medicine i rehabilitacije, udžbenik, Medicinski fakultet, 2003. - Konjikušić V., Kocev N.: Zdravstvena nega u procesu rehabilitacije, autorsko izdanje, Beograd, 2005. - Vesović Potić V.: Osnovi fizikalne medicine i rehabilitacije, udžbenik za studente medicine, Medicinski fakultet, Beograd, 2009. - Mihajlović V.: Osnovi fizikalne medicine, Medicinska knjiga, Beograd, 1992. - Jovanović Sretenović T.: Praktikum iz Osnovi rehabilitacije, Visoka zdravstvena škola strukovnih studija, Beograd, 2012. - Savić K., Mikov A.: Rehabilitacija dece i omladine, Orto Medics, Novi Sad, 2007. - Delin A.: U susret osobama sa invaliditetom, Britanski savet, Beograd, 2008. - Howard R.: Rehabilitacija, Savez društva defektologa Jugoslavije, Beograd, 2001. - Playforth S.: Upoznavanje osoba sa invaliditetom, Britanski savet, Beograd, 2008.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)

30	30	150	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums	20			

MENTAL HYGIENE

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Mental Hygiene				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, fifth semester				
ECTS: 5				
Requirement: no				
Course objective: Students are trained to perceive phenomena of mental health and mental illness from a wider, multidisciplinary and multidimensional aspect, to assume responsible tasks in protection and improvement of mental health in their work within community, as well as to take care of sick persons against use of high technology and preserve human relationships in institutions and patients' homes.				
Course outcome: Adoption of knowledge and skills in evaluation, monitoring, creating and carrying out therapy communication with health protection beneficiaries: persons with mental health issues, members of their families and healthy members of the community.				
Subjects content: <i>Lectures</i> Subject and theoretical fundamentals of mental health; prevention of mental disorders; mental health of the entire human life cycle: birth and childhood; adolescence; adulthood; old age; modern life problems: alienation; living in urban environment; living in rural environment; nutrition issues; physical activities; life crises; sickness and disablement in family; stress and burn-out syndrome; emergencies; refugees, armed conflicts; natural disasters; posttraumatic conditions; social pathology and maladaptive behavior; extramarital status; LGBT population; domestic violence; violence against women; violence against old people; alcoholism; drug-addiction; prostitution; religious sects; pathological gambling; suicidality; new forms of addiction; approach to person from mental-hygiene aspect: health and sickness; dying and death; dehumanization and humanization of relations; communication in health-care profession; comprehensive protection of mental health.				
<i>Exercises</i> Following theoretical classes. Case studies. Visits of representatives from relevant associations. Drawing up seminar papers. Devising conceptual project plans relating to current issues. Visit of a genuine representative of a marginalized group. Analysis of projects (city, provincial, republic) dealing with marginalized groups of people in the country. Visits of members of aid providing associations (victims of armed conflicts, natural disasters, etc.).				
Literature: <i>Literature in English:</i> 1. Bell G. E.: The Good Book of Mental Hygiene, Resource Publications, Borston, 2020. 2. Glen A.: Mental Hygiene: How To Change Your Mind, CreateSpace Independent Publishing Platform, London, 2018. 3. Tria G. E., Gaerlan J. E., Limpingco D. A.: Principles of Mental Hygiene, Pantas Publishing & Printing, Rotterdam, 2010. <i>Literature in Serbian:</i> 4. Simić M., Kovačević K.: Mentalna higijena, udžbenik, autorsko izdanje, Beograd, 2004. 5. Kalićanin P. i sar.: Stres, zdravlje, bolest, udžbenik, Obeležja, Beograd, 2007. 6. Berger D.: Zdravstvena psihologija, Društvo psihologa Srbije, Centar za primarnu psihologiju, Beograd, 2002. 7. Havelka M. i sar.: Zdravstvena psihologija, Naklada Slap, Jastrebarsko, 2002. 8. Nikolić D.: Bolesti zavisnosti, Narodna knjiga-Alfa, Beograd, 2007. 9. Stanković Z., Begović D.: Alkoholizam od prve do poslednje čaše, Kreativni centar, Beograd, 2005.				
Number of classes (per semester):				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, exercises, workshop, discussion, seminar paper.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/seminar papers	0			
Exercise/professional practice	20			
Colloquiums/exam	30			

NUTRITIONISM

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Nutritionism				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, fifth semester				
ECTS: 5				
Requirement: no				
Course objective: The objective of the course is the acquisition of knowledge on the structure, importance, physiological action and recommended consumption of nutritious food and how to select and combine food as a source of nutritious substances; they are to be explained the concept of adequate nutrition and to be familiarized with specific features of nutritional needs of certain groups of people according to their age, intensity of everyday body activity, body mass, genetic predispositions, possible pathological conditions etc., as well as to present them current trends of healthy food.				
Course outcome: Upon the successfully completed course students will possess the knowledge of the structure, importance, physiological action and recommended consumption of nutritious food and how to select and combine food as a source of nutritious substances, and they will be able to explain the concept of adequate nutrition and specific features of nutritional needs of certain groups of people according to their age, intensity of everyday body activity, body mass, genetic predispositions, possible pathological conditions etc.				
Subjects content: <i>Lectures</i> Historical development of food and food science; basic types of nutritional components; proteins; carbohydrates; lipids; vitamins; minerals; energy and nutritional needs of people and their dependence on external and internal factors; principles of adequate nutrition; healthy food trends; functional food; types of food, general classification; the importance of water in nutrition; meat and meat products; milk and dairy products; bread, pastries, pasta and products from cereals; fruit and vegetables; sweets; spices, sauces, gravies etc.; teas; coffee; non-alcoholic beverages, carbonated beverages; beer; wine, strong alcoholic drinks; oriental food; types of nutrition depending on geographic region; ecological farming and growing (organic food); GMO food; nutrition and religion; meat avoiding nutrition regimes, vegetarian nutrition, vegan nutrition; Mediterranean nutrition; nutrition of pregnant women and breast-feeding women; nutrition of pre-school children, elementary school children, adolescents; nutrition of elderly persons; nutritional analysis of meals, possibilities of substitution of high-calorie meals with analogues; diet due to medical reasons, diet aimed at reduction of body mass, positive and negative examples from practice. <i>Exercises</i> Repetition of theory class lessons; basic types of nutritional components – presentation and discussion; types of food – presentation, discussion; organic food – discussion; GMO food – discussion; nutrition and religion – discussion; meat avoiding nutrition regimes, vegetarian nutrition, vegan nutrition – presentation, discussion; Mediterranean food – presentation; nutrition of pregnant women and breast-feeding women – presentation; nutrition of pre-school children, elementary school children, adolescents – presentation; nutrition of elderly persons – discussion; nutritional analysis of meals, possibilities of substitution of high-calorie meals with analogues – workshop; making menu for a certain case – project task; diet due to medical reasons, diet aimed at reduction of body mass, positive and negative examples from practice – workshop, discussion.				
Literature: <i>Literature in Serbian:</i> 1. World Health Organisation: Nutrition, health and development, World Health Organisation, New York, 2000. 2. Mahan K. L., Escott-Stump S., Raymond J. L.: Krause's Food and Nutrition Care Process, Elsevier, St. Louis, Missouri, 2012. <i>Literature in English:</i> 3. Ilić B.: Ishrana i dijetika, Visoka medicinska škola strukovnih studija iz Čuprije, 2014. 4. Novaković B., Jusupović F.: Ishrana i zdravlje, udžbenik, Medicinski fakultet, Novi Sad, 2014. 5. Alibabić V., Mujić I.: Pravilna prehrana i zdravlje, Veleučilište u Rijeci, Rijeka, 2016. 6. Trbović B., Nikolić M., Banković Paunović S.: Ishrana, udžbenik, Zavod za udžbenike, Beograd, 2014. 7. Smajić A.: Nutricionizam - ishrana stanovništva, Federalno ministarstvo poljoprivrede, vodoprivrede i šumarstva, Sarajevo, BiH, 2017. 8. Modić P.: Upotreba prehrambenih aditiva, Popo-knjiga, Beograd, 2001. 9. Petrović Malahov G.: Ishrana i hrana, IGP Prometej, Beograd, 2007.				
Number of classes (per semester):				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.			
Grading (maximum 100 points)			
Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/seminar papers	0		
Exercise/professional practice	30		
Colloquiums/exam	30		

OCCUPATIONAL THERAPY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Occupational Therapy				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, fourth semester				
ECTS: 5				
Requirement: no				
Course objective: The aim of the course is to acquire theoretical and practical knowledge about occupational therapy for children and youth with developmental disabilities and for adults with disabilities, about the principles, methods, and types of occupational therapy, as well as the techniques and activities most commonly used as methods of functional training in the rehabilitation process.				
Course outcome: Students will be trained to apply methods and techniques for developing skills in the areas of self-care, productivity, and leisure, as well as to design occupational therapy programs as an integral part of the rehabilitation of persons with congenital or acquired disabilities.				
Course content: <i>Lectures</i> Definition and goals of occupational therapy. History. Connection with other sciences. Place and role in rehabilitation. Teamwork. Theoretical foundations of intervention in occupational therapy. Classification of activities in occupational therapy. Assessment of roles and competencies in occupational therapy. Importance of the context in which activities are performed in occupational therapy. Identification of occupational needs. Elements of treatment planning in occupational therapy: diagnosis, stage of disease, localization of impairment, functional status, therapeutic goals, techniques and activities. Assessment of abilities and capacity for occupational therapy. Assessment of the context for occupational therapy: personal, environmental, and cultural context; home, community, and workplace. Elements of functional assessment in occupational therapy. Dosage. Elements and principles of dosage in increasing muscle strength, bettering the range of motion, improving movement coordination and oculomotor coordination. Basic principles of progressiveness. Designing an occupational therapy program. Occupational therapy for children. Occupational therapy in geriatrics. Occupational therapy in psychiatry and assessment of the psychiatric patient in occupational therapy. Development and basic functions of the hand. Classification of grips. Techniques in occupational therapy: mechanical, directed, sedative, stimulative, inventive, and free. Aids in occupational therapy. Activities of daily living. Mobility aids and gait analysis. Architectural and technical adaptations. Work ability assessment. <i>Exercises</i> Independent performance of activity analysis, designing occupational therapy programs (workshop), setting goals in occupational therapy (workshop), conducting activities that enhance the development of abilities and skills in the domains of self-care, productivity, and leisure organization. Aids in occupational therapy. Activities of daily living (visit to an institution where occupational therapy is conducted). Mobility aids and gait analysis. Architectural and technical adaptations. Work ability assessment (visit to an occupational medicine specialist).				
Literature: <i>Literature in English:</i> - Jenkinson J., Hydeb T., Ahmad S.: Building Blocks for Learning: Occupational Therapy Approaches, John Wiley & Sons, New York, 2018. - Loiselle L., Shea S.: Curriculum Based Activities in Occupational Therapy: An Inclusion Resource, Therapro Inc., Framingham, 2005. - Breines E. B.: Occupational Therapy, Activities From Clay To Computer - Theory And Practice, F. A. Davis Company, Philadelphia, 2005. <i>Literature in Serbian:</i> - Švraka E., Avdid D., Hasanbegović-Anid E.: Okupaciona terapija, udžbenik, Fakultet zdravstvenih studija, Sarajevo, 2017. - Savković N.: Radna terapija, praktikum, Visoka zdravstvena škola Beograd, 2015. - Vučić R., Marković P., Savković N.: Klinička radna terapija, udžbenik, NIB Alternativa, Beograd, 2001. - Levandovski D., Teodorović B.: Program rada s djecom s teškoćama u razvoju, Fakultet za defektologiju, Sveučilište u Zagrebu, Zagreb, 2015. - Nikolić S.: Osnovi radne terapije, autorizovane, skripte Visoka zdravstvena škola Beograd, 2015.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, exercises, case analysis, e-learning.				

Grading (maximum 100 points)			
Pre-Exam commitments	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums/exam	30		

ORGANIZATION OF HEALTH CARE SYSTEMS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Organization of Health Care Systems				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, second semester				
ECTS: 5				
Requirement: no				
Course objective: Course objective is to familiarize students with basics in organization of health-care institutions and health-care sector, manner of institution management, specific features of decision-making process in health-care, motivation and medical team building, characteristics of internal communication in health-care institutions, personnel and human resources building up, characteristics of business policy and planning strategy, administrative procedures and change management in health-care institutions, mandatory and other forms of health insurance.				
Subjects outcome: Upon completing the course, student will be able to organize medical teams, ensure solid communication within health-care institution, efficiently make decisions and manage changes under time pressure and understand systems of mandatory and other forms of health insurance.				
Subjects content: <i>Lectures</i> Health-care system; the role of good communication; health-care system and health-care institution management; the role of manager, difference between commanding and leadership; employment policy and schedule; introduction process, interview and integration of new employees; training; health-care institution organization; primary, secondary and tertiary health protection; types of health-care institutions; Law on Health-Care Protection; principles of health protection; protection of population from infectious diseases; chamber of medical practitioners; administration bodies in charge of health-care; inspection supervision. <i>Exercises</i> Discussion on organization of health care processes, health-care institutions and health insurance. Analysis of practice in Serbia and abroad. Analysis of practical examples in the sphere of environment protection. Analysis and practical examples in the sphere of smoking and alcohol ban. Analysis and discussion; living environment, air protection. Analysis and discussion; process of waste removal from health-care institutions.				
Literature: <i>Literature in Serbian:</i> - Ranković-Vasiljević R., Stojanović-Jovanović B., Terzić-Marković D.: Metodika i organizacija zdravstvene nege, Visoka zdravstvena škola strukovnih studija, Beograd, 2015. - Milović Lj.: Organizacija zdravstvene nege sa menadžmentom, udžbenik, Naučna knjiga, Beograd, 2004. - Tijanić M. i sar.: Zdravstvena nega i savremeno sestrinstvo, Naučna knjiga, Beograd, 2010. <i>Literature in English:</i> - Mossialos E., Permanand G., Baeten R., Hervey T.: Health Systems Governance in Europe: The Role of European Union Law and Policy, textbook, Cambridge University Press, 2010. - Beik Janet I.: Health Insurance Today: A Practical Approach, Saunders, Philadelphia, 2010. - Morrissey Michael A.: Health Insurance, Health Administration Press, New York, 2007.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, workshop, case study, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums	30			

PATHOPHYSIOLOGY

Study program:	Physiotherapy			
Type and level of study:	undergraduate professional studies			
Course:	Pathophysiology			
Language of instruction:	Serbian			
Subjects status:	mandatory			
Semester:	second year, third semester			
ECTS:	6			
Requirement:	Anatomy and Physiology Segment 1 (General Pathophysiology: theoretical + practical exam) is a condition for Segmet 2 (Special Pathophysiology: theoretical + practical exam)			
Course objective:	Acquisition of knowledge on cell tissue and organ damaging mechanisms and familiarization of students with morphological alterations underlying diseases, ability to recognize morphological alterations on cells, tissues and organs, enabling students to get to know etiology, pathogenesis and clinical manifestations of most important metabolic disorders and functional disorders of organs and organ systems, causes and mechanisms of cell malignant transformation, as well as characteristic of tumor growth and changes it causes in organism.			
Course outcome:	Upon the completion of the course students have a command of basic medical terminology and are able to adequately present medically relevant facts, understand etiology and pathogenesis of principal metabolic and functional disorders of human organs and organ systems. They are able to connect their clinical manifestations with causes and mechanisms of their appearance and have a basic pathobiological knowledge enabling them to understand mechanisms of chemical agents and drug action, as well as a diagnostic strategy in case of pathological occurrences at a level required for competent carrying out of their duties.			
Course content:	<i>Lectures</i> Adaptation, growing old, death of cell; morphological changes in cell; acute and chronic inflammation etiopathogenesis; malignant cell transformation and its growth; water and electrolyte transport disorder; acid-base disorders; etiopathogenesis; undernutrition, obesity, diabetes mellitus, atherosclerosis, cardiovascular system function disorder, respiratory system function disorder, renal function disorder, nervous system function disorder, endocrine gland and neuroendocrine regulation function disorder, digestive system disorder, blood composition and function disorder, skin function disorder. <i>Exercises</i> Cell injury and cell death. Inflammation etiopathogenesis. Malignant transformation of cell and its growth. Water, sodium and potassium transport disorder. Calcium, magnesium and phosphate metabolism disorders. Etiopathogenesis of diabetes mellitus, atherosclerosis, acid-base. Disorders of cardiovascular, respiratory system, renal function, nervous function, endocrine gland and neuroendocrine regulation function, digestive tract and liver, blood composition and function.			
Literature:	<i>Literature in English:</i> 1. Huether S. E.: Understanding Pathophysiology, Elsevier, London, 2011. 2. Nolan A.: Pathophysiology: Step By Step Guide for Nursing, textbook, Kindle Edition, London, 2020. 3. Banasik J. L.: Pathophysiology, textbook, Saunders, New York, 2018. <i>Literature in Serbian:</i> 4. Radić S.: Opšta patofiziologija, udžbenik, Medicinski fakultet, Niš, 2012. 5. Beleslin B.: Specijalna patološka fiziologija, Beograd, 2008. 6. Babić Lj., Borota R., Lučić A.: Priručnik praktičnih i seminarskih vežbi iz patološke fiziologije, Medicinski fakultet, Novi Sad, 2007. 7. Ubavić M.: Patološka fiziologija, interne skripte, ICEPS, 2017. 8. Gamulin M., Marušić M., Kovač Z.: Patofiziologija, udžbenik, Medicinska naklada, Zagreb, 2005. 9. Maličević Ž. i sar.: Osnovi patološke fiziologije, udžbenik, Panevropski univerzitet Apeiron, Banja Luka, 2009. 10. Kovač Z., Gamulin S. i sar.: Patofiziologija, Zadaci za problemske seminare, Medicinska naklada, Zagreb, 2006. 11. Živančević-Simonović S.: Opšta patološka fiziologija, udžbenik, Medicinski fakultet, Kragujevac, 2002. 12. Đorđević-Denić G. i sar.: Specijalna patološka fiziologija, udžbenik, Zavod za izdavanje udžbenika, Beograd, 2003.			
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
45	30	0	0	0
Methods of teaching: lectures, practical classes, problem-oriented tasks, case studies, discussion, visits of medical-biochemical laboratory employees.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	

Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	30		
Colloquiums	30		

PHARMACOLOGY AND DRUG DOSING

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Pharmacology and Drug Dosing				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, fourth semester				
ECTS: 5				
Requirement: no				
Course objective: Acquisition of knowledge on drug effect mechanisms on the basis of which information necessary for understanding different effects of drugs is obtained, therapy and side effects of groups of drugs are understood, as well as acquisition of principles of use of drugs in therapy.				
Course outcome: Upon the completion of the course, students are expected to be able to identify mechanisms of different effects of certain groups of drugs, to connect therapy and side effects of certain groups of drugs with their different pharmacologic effects, and to have own critical attitude to drugs.				
Course content: <i>Lectures</i> Introduction; history of pharmacology; pharmacology division; drug division; general principles and drug development; manner of drug administration; dosing; LADMER (liberation, absorption, distribution, metabolism, elimination and response of organism to administered drug); effects of drugs on organism; type and character of drug effects; drug effect mechanisms; factors affecting drug effects; change of drug effects at second administration; mutual effects of drugs; detrimental drug effects; drug addiction; basics of clinical pharmacology; nonsteroidal anti-inflammatory drugs; antirheumatic drugs modifying the course of rheumatic condition; blood pharmacology: anticoagulant and coagulant drugs; antiaggregation drugs; local and system hemostatics; antianemic drugs; water and electrolytes: fluid compensation agents; parenteral nutrition drugs; respiratory tract pharmacology; cardiovascular system pharmacology, drugs and therapy of peripheral vascular conditions; antilipemic agents; digestive tract pharmacology, immunosuppressives and immunostimulants; vitamin pharmacology; obesity treatment drugs; antimicrobe drug pharmacology; hormone pharmacology, antifungal drugs; antiviral drugs; amebicides; antimalarial drugs; antiparasitic drugs; antiseptics and disinfectants; chemotherapy of malignant diseases. <i>Exercises:</i> General principles and drug development. Work with pharmacologic databases on the internet. Drug division. Drug prescribing. Prescription.				
Literature: <i>Literature in English:</i> 1. Rang H. P., Dale M. M., Ritter J. M., Moore P. K.: Pharmacology, textbook, Churchill Livingston, London, 2004. 2. Nurse Academy: Dosage Calculations for Nursing Students: A Complete Step-by-Step Guide for Quick Drug Dosage Calculation, Dosing Math Tips & Tricks for Students, Nurses, and Paramedics, Kindle Edition, London, 2021. 3. Whalen K.: Lippincott Illustrated Reviews: Pharmacology, Wolters Kluwer Health, London, 2018. 4. Adams M. P., Holland N.: Pharmacology for Nurses: A Pathophysiologic Approach, textbook, Pearson, New York, 2016. <i>Literature in Serbian:</i> 5. Đaković Švajcer K.: Osnovi farmakologije, udžbenik, Ortomedics, Novi Sad, 2010. 6. Varagić V., Milošević M.: Farmakologija, udžbenik, Elit Medica, Beograd, 2005. 7. Stanimirović V.: Lek-doza-vreme i pacijent u bolnici, Medicinski fakultet, Kragujevac, 2008. 8. Stanimirović V. (ur.) i sar.: Farmakoterapijski vodič 4, Agencija za lekove i medicinska sredstva Srbije, Beograd, 2008. 9. Bukarica-Gojković Lj. i sar.: Praktikum iz farmakologije, Medicinski fakultet, Univerzitet u Beogradu, 2009. 10. Rang H. P., Dale M. M., Ritter J. M., Moore P. K.: Farmakologija, udžbenik, Data Status, Beograd, 2004.				
Number of classes (per semester):				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, exercises, video presentations, demonstrations, workshop, case studies.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Seminar paper	0			

Exercises/professional practice	40		
Colloquiums	20		

PROTETICS AND ORTHOTICS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Protetics and Orthotics				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, sixth semester				
ECTS: 5				
Requirement: no				
Course objective: The aim of the course is for the student to master the basic principles and specific problems of patients with locomotor morphological and functional impairments, as well as the basic principles of applying orthotic and prosthetic aids, and the indications for their use in practice.				
Course outcome: After completing the course and passing the exam, the student will have acquired the knowledge to work with injured or ill patients in training for the use of prosthetic and orthotic devices for the purpose of adaptation and rehabilitation of patients who require prostheses and orthoses.				
Course content: <i>Lectures</i> Introduction to orthotics and prosthetics. History. Development, significance, multidisciplinary approach. Indications for amputation. Amputation techniques: classical osteoplastic, osteomyoplastic Ertl, Murdock, cineplasty, Krukenberg. Preoperative application. Postoperative period. Early complications and interventions. Preparation of the stump for prosthetic fitting. Early mobilization method. Immediate prosthetic fitting technique on the operating table – Berlemont, Neiss. Phantom pain and phantom sensation. Psychological adjustment of the patient with amputation, types of reactions to disability. Functional training of patients with a prosthesis. Locations of mechanical knee joints when using thigh corsets. Prosthetic documentation. Gait training with a prosthesis. Congenital amputations and malformations. Types of terminal devices in upper-limb prosthetics. Forearm prostheses, components, socket construction. Biomechanical principles. Power sources, control systems. Suspensions. Principles of prosthesis application. Types of upper-limb prostheses. Types of lower-limb prostheses. Principles of orthosis application. Types of upper-limb orthoses. Types of lower-limb orthoses. Spinal orthoses in rehabilitation. Prostheses for shoulder disarticulation. Prostheses for interthoracoscaphular amputation. Prosthetic devices for patients with hand amputations. Training for upper-limb amputees in the use of prostheses – separation training (with EMG, TO), control training. Usage training. Evaluation using abstract function tests. Documentation. Materials used in orthotics and prosthetics. Basic principles for prescribing orthotic devices for lower limbs. Purpose. Classification and basic components of orthotic devices. Below-knee orthoses. Types of orthoses, components and methods of construction, supplementary parts, indications for their use, orthotic devices for individual segments and the whole upper limb, indications. Various orthotic devices for the wrist and hand. Orthotic devices for quadriplegic patients in connection with wheelchairs. Types of spinal orthoses, classification. Basic components, construction method, indications. Functional training of patients with orthoses. Crutches and canes. New achievements and concepts in the field of orthotics and prosthetics. <i>Exercises</i> Basic principles of orthotics and prosthetics: pain management, functionality, meeting aesthetic requirements, and minimizing energy expenditure during use (workshop, demonstration). Practical demonstration of orthotic and prosthetic devices. Training in their use (workshop). Training with patients in groups. Training in the fabrication of temporary orthotic devices.				
Literature: <i>Literature in English:</i> - De Lisa J. A.: Physical Medicine and Rehabilitation: Principles and Practice, Lippincott Williams & Wilkins, New York, 2014. - Lusardi M.: Orthotics and Prosthetics in Rehabilitation, Butterworth-Heinemann, Berlin, 2016. <i>Literature in Serbian:</i> - Mitrašinović D.: Protetika i ortotika, autorizovana skripta, Visoka zdravstvena škola, Beograd, 2021. - Nikolić Ž.: Fizikalna medicina i rehabilitacija posle povreda lokomotornog sistema, Draslar partner, Beograd, 2004. - Dorđević P.: Povrede ekstremiteta, lečenje i medicinska rehabilitacija, udžbenik, Medicinski fakultet, Beograd, 2014. - Nedvidek B.: Osnovi fizikalne medicine i rehabilitacije, Medicinski fakultet, Novi Sad, 2006.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, exercises, case studies, discussions, e-learning.				
Grading (maximum 100 points)				

Pre-Exam commitment	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums/exam	30		

PSYCHOLOGY IN NURSING AND HEALTH CARE

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Psychology in Nursing and Health Care
Language of instruction:	Serbian
Course status:	mandatory
Semester:	second year, fourth semester
ECTS:	3
Requirement:	no
Course objective:	Acquisition of knowledge in psychology relating to the patient and his/her relatives at the moment of becoming aware of a health issue, the period of its solving, as well as in case of coping with severe or incurable diseases, their lasting consequences and similar situations. In addition to that, the course objective is to educate students in emotional and psychological states through which a medical professional may go through in the course of his/her work with patients. In addition to that, the objective of the course is for the student to acquire knowledge about the impact of psychological factors and the significance of stress in the development of psychosomatic disorders. They will also gain understanding of coping mechanisms for stress and pain management; as well as acquire knowledge that will enable them to recognize burnout syndrome in real-life professional environments, particularly within the health care sector, along with strategies to overcome it.
Course outcome:	Upon completion of the course and passing the exam, the student will gain knowledge of the psychology of patients and their families in the moment of health issue discovery, during the treatment process, and in uncertain situations. The student will also be trained in certain self-control techniques for managing emotional and psychological reactions they may experience as a health care professional while dealing with patients. Additionally, upon course completion, the student should be able to recognize and understand the health care psychology and theoretical models the course is based on; they should recognize psychological aspects of health and illnesses; to identify different psychological reactions to symptoms, illnesses and the importance of seeking professional help and social support; students will understand the role of stress in the development of psychosomatic illnesses and coping strategies; recognize the role of personal factors in experiencing and managing pain; understand the psychological aspects of severe illnesses and terminal condition; and to comprehend the psychological aspects of hospitalization in patients of different ages.
Course content:	<i>Lectures</i> Psychology of health and disease; accepting disease as a reality; determination in solving a health issue; psychology of a patient at the moment of becoming aware of his/her health issue and during treatment; psychological states in case of uncertainty, expectations, unexpected treatment, unsuccessful treatment, deterioration in diagnosis; work with patient's relatives, the role of relatives; support, openness in conversation, panic versus rationality; work with patient's relatives in case of poor prospects diagnosis, in case of a loss; work with medical professional in case of severe emotional states, patient being nervous, state of shock; social institutions, support of competent services; importance of communication; basics of occupational therapy; pain management; understanding the relation between the patient and health care professional; familiarization with the principles of health care habits development at different ages; the relationship between social support and health; review of models and strategies for promoting health related behaviors aimed at reducing health issues; recognition of burn out symptoms and the adoption of methods to overcome it, especially among those employed in health care. <i>Exercises</i> Accepting disease as a reality – workshop. Determination in solving a health issue – workshop. Psychology of a patient at the moment of becoming aware of his/her health issue and during treatment – workshop. Psychological states in case of uncertainty, expectations, unexpected treatment, unsuccessful treatment, deterioration in diagnosis – workshop. Work with patient's relatives – workshop. Work with medical professional in case of severe emotional states – workshop. Visits of professionals. Visits from representatives of institutions that provide psychological help to patients and employees (The Society of Psychologists of Serbia, the Institute of Mental Health, or the Psychopolis Institute).
Literature:	<i>Literature in English:</i> - Kubler Ross E.: On Death and Dying, Prentice Hall, 2001. - Friedman H. S.: Health psychology, textbook, Prentice Hall, 2003. <i>Literature in Serbian:</i> - Havelka M.: Zdravstvena psihologija. udžbenik, Jastrebarsko-Naklada Slap, 2008. - Kekuš D.: Komunikacije u profesionalnoj praksi zdravstvenih radnika, Digital Art, Beograd, 2010. - Payne S. H., Walker J.: Psihologija u zdravstveni negi, Educy, Ljubljana, 2002. - Berger D.: Zdravstvena psihologija, Društvo psihologa Srbije, Centar za primarnu psihologiju, Beograd, 2002. - Simić M., Kovačević K.: Mentalna higijena, udžbenik, autorsko izdanje, Beograd, 2004. - Milivojević Z.: Emocije, Psihopolis institut, Novi Sad, 2008. - Štajner K.: Školovanje srca, Psihopolis institut, Novi Sad, 2007.

16. Bern E.: Koju igru igraš, Beoknjiga, Beograd, 2003.				
17. Kekuš D.: Zdravstveno vaspitanje, Digital art, Beograd, 2009.				
18. Ranković Vasiljević R.: Metodika i organizacija zdravstvene nege, Viša medicinska škola, Beograd, 2004.				
19. Forvard S., Frejžer D.: Emocionalna ucena, Psihopolis institut, Novi Sad, 2011.				
20. Haris A. T.: Ja sam OK- ti si OK, Beograd, 2003.				
21. Džejms M.: Životni pobednik, Psihopolis institut, Novi Sad, 2008.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	30	0	0	0
Methods of teaching:				
lectures, exercises, case studies, discussions, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitment	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums	30			

PHYSICAL FACTORS IN THERAPY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Physical Factors in Therapy				
Language of instruction: Serbian				
Course status: mandatory				
Semester: first year, second semester				
ECTS: 6				
Requirement: no				
Course objective: The objective of the course is to familiarize students with factors affecting physiotherapy assessment, i. e. the course of physiotherapy and rehabilitation process.				
Course outcome: Upon the completion of the course and passing the exam, students understand and possess knowledge on factors affecting physiotherapy assessment, i. e. the course of physiotherapy and rehabilitation process, and they are trained to examine physiotherapy and rehabilitation techniques.				
Course content: <i>Lectures</i> Types of factors affecting the course of physical therapy, ways of their impact. Explanations of reasons of such actions. External and internal impact on growth or reduction in the effect of a certain factor. Minimum and maximum values of certain factors that might affect the commencement of physical therapy or rehabilitation. Ways of diminishing factor intensity impeding the course of physical therapy or rehabilitation. Impact of age and sex on factor effects. Impact of physiological condition of organism and diet in the period preceding the need for physical therapy or rehabilitation. Impact of climate. Markers impacting the intensity of effects of some of factors. Specifics of effects in small children. Specifics of effects in geriatrics. Specific of effects in postoperative recovery. <i>Exercises</i> Types of factors affecting the course of physical therapy, ways of their action – examples. External and internal impacts on increase or reduction in the effect of a certain factor – examples. Ways of diminishing factor intensity impeding the course of physical therapy or rehabilitation – examples. Ways of boosting factor intensity impeding the course of physical therapy or rehabilitation – examples. Length of factor effects – examples. Markers impacting the intensity of effects of some of factors - examples. Specifics of effects in small children, geriatrics and in postoperative recovery – case study analysis.				
Literature: <i>Literature in English:</i> 1. Goodman C. C., Snyder T. K.: Differential Diagnosis for Physical Therapists: Screening for Referral, Saunders, Ottawa, 2012. <i>Literature in Serbian:</i> 2. Mihailović V.: Fizikalna terapija, udžbenik, Obodsko slovo, Rijeka Crnojevića, 2002. 3. Veljković M.: Opšta fizikalna terapija, udžbenik, Visoka medicinska škola Čuprija, 2004. 4. Vesović Potić V.: Osnovi fizikalne medicine i rehabilitacije, udžbenik za studente medicine, Medicinski fakultet, Beograd, 2009. 5. Nedvidek B.: Osnovi fizikalne medicine i rehabilitacije, treće izdanje, Medicinski fakultet, Novi Sad, 1991. 6. Mihajlović V.: Terapijski fizikalni modaliteti, "Unirex", Podgorica 2011. 7. Kunej D.: Praktikum fizikalne terapije, Viša medicinska škola, Beograd 2000. 8. Savić K., Mikov A.: Rehabilitacija dece i omladine, Optomediks, Novi Sad, 2007.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	15	150	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case study, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums/exam	20			

PHYSIOTHERAPY ASSESSMENT

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Physiotherapy Assessment				
Language of instruction: Serbian				
Course status: mandatory				
Semester: first year, second semester				
ECTS: 6				
Requirement:: no				
Course objective: Familiarization with possibilities of assessment of functional condition and quality of life prior to physiotherapy or medical rehabilitation in cases conditions or injuries most frequently resulting in personal or social dysfunction, aimed at assessment making and improvement in effects of treatment.				
Course outcome: Understanding basic notions of all aspects of quality of life and multidisciplinary approach to evaluation and treatment of patients, understanding the importance of application of such approach preventively, aimed at physiotherapy treatments or rehabilitation, as well as acquisition of techniques of assessment of life quality and factors affecting the possibility of carrying out physiotherapy or medical rehabilitation.				
Course content: <i>Lectures</i> The notion of quality of life. General and specific quality of life and organism condition factors. Criteria of devising and applying functional tests. Importance of interdisciplinary approach to functional status testing. Assessment of functional condition and quality of life of patients with rheumatoid arthritis, seronegative spondyloarthritis, fibromyalgia, after sustaining locomotor apparatus injuries, in patients with peripheral nerve lesions, with degenerative conditions of the backbone, degenerative conditions of peripheral joints, with amputations, quadriplegia and paraplegia, following cerebrovascular accident, as well as specific features in condition assessment in pediatrics, geriatrics and pregnant women. <i>Exercises</i> Familiarization with pain assessment questionnaires – practical application. Functional status and quality of life of patients with rheumatoid arthritis. Functional status and quality of life of patients with seronegative spondyloarthritis. Assessment of functional status and quality of life of patients with fibromyalgia. Assessment of functional status and quality of life of patients after sustaining locomotor apparatus injuries. Assessment of functional status and quality of life of patients with peripheral nerve lesions. Assessment of functional status and quality of life of patients with degenerative conditions of the backbone. Assessment of functional status and quality of life of patients with degenerative conditions of peripheral joints. Assessment of functional status and quality of life of patients with amputations. Assessment of functional status and quality of life of patients with quadriplegia and paraplegia. Assessment of functional status and quality of life of patients following cerebrovascular accident. Assessment of functional status and quality of life of patients with juvenile idiopathic arthritis. Analysis of specific features and assessment of factors affecting the condition of elderly persons, children and pregnant women.				
Literature: <i>Literature in English:</i> 1. Goodman C., Snyder K.: Differential Diagnosis for Physical Therapists: Screening for Referral, Saunders, London, 2012. <i>Literature in Serbian:</i> 2. Veljković M.: Opšta fizikalna terapija, udžbenik, Visoka medicinska škola Čuprija, 2004. 3. Mihailović V.: Fizikalna terapija, udžbenik, Obodsko slovo, Rijeka Crnojevića, 2002. 4. Vesović Potić V.: Osnovi fizikalne medicine i rehabilitacije, udžbenik za studente medicine, Medicinski fakultet, Beograd, 2009. 5. Mihailović V.: Osnovi fizikalne medicine, Medicinska knjiga, Beograd, 1992. 6. Nedvidek B.: Osnovi fizikalne medicine i rehabilitacije, treće izdanje, Medicinski fakultet, Novi Sad, 1991. 7. Mihajlović V.: Terapijski fizikalni modaliteti, "Unirex", Podgorica 2011. 8. Kunej D.: Praktikum fizikalne terapije, Viša medicinska škola, Beograd 2000. 9. Savić K., Mikov A.: Rehabilitacija dece i omladine, Optomediks, Novi Sad, 2007. 10. Sulović V., Jakovljević Đ.: Medicina i kvalitet života, Beograd, SANU, 1997.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	15	30	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	

Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums	20		

PHYSIOTHERAPY IN INTERNAL MEDICINE

Study program:	Physiotherapy			
Type and level of study:	undergraduate professional studies			
Course:	Physiotherapy in Internal Medicine			
Language of instruction:	Serbian			
Course status:	mandatory			
Semester:	second year, fourth semester			
ECTS:	4			
Requirement:	Physical Factors in Therapy, Physiotherapy Assessment, Skills in Physiotherapy, Basics of Internal Medicine			
Course objective:	Adoption of current professional theoretical and practical knowledge in internal medicine aimed at application of physiotherapy methods and medical rehabilitation of internal medicine patients.			
Course outcome:	Students are trained to apply methods of physiotherapy and medical rehabilitation of internal medicine patients (cardiology, pulmonary, gastroenterology, nephrology, endocrinology, immunology, oncology).			
Course content:	<i>Lectures</i> Recapitulation of teaching units in the field of internal medicine. Kinesitherapy diagnostics, assessment, plan and programme of kinesitherapy within treatment and rehabilitation in internal medicine. Kinesitherapy – myocardial infarction, hypertension, coronary bypass post-surgical period. Diseases of peripheral circulation, non-coronary artery bypass grafting surgery. Kinesitherapy – obstructive pulmonary diseases and asthma. Specific features of kinesitherapy in children with pulmonary diseases. Kinesitherapy – inflammatory, degenerative and non-articular rheumatism. <i>Exercises</i> Recapitulation of teaching units in the field of internal medicine. Practical application of kinesitherapy: prevention, therapeutic diagnostics and assessment, application of general and authorized methods of kinesitherapy, correction of selected methods, evaluation of effects, treatment adjustment and progression, entering relevant data in medical documentation in the treatment of pathological conditions: myocardial infarction, angina pectoris, artery hypertension, arterosclerosis, valvular heart disease. Postoperative conditions: revascularisation – surgical procedure, valvular insufficiency interventions. Acute and chronic diseases of the peripheral vascular system. Recurrent and chronic obstructive bronchitis, asthma, bronchiectasis, emphysema, cystic fibrosis, pleural effusion, thoracic surgery, occupational respiratory system diseases. Specific features of kinesitherapy of respiratory diseases in children. Kinesitherapy of idiopathic inflammatory rheumatism, inflammatory rheumatism in children, systemic inflammatory rheumatism, degenerative rheumatism, postoperative discus hernia, non-articular soft tissue rheumatism, compressive non-articular syndrome, metabolic rheumatism.			
Literature:	<i>Literature in Serbian:</i> 1. Pavlović M.: Kineziterapija u procesu rehabilitacije obolelih od kardiovaskularnih bolesti, udžbenik, Beograd, 2002. 2. Pavlović M.: Kineziterapija u reumatologiji, udžbenik, Beograd, 2003. 3. Popović M.: Kineziterapija respiratornih poremećaja, udžbenik, autorsko izdanje, Beograd, 2003. 4. Manojlović D. i sar.: Interna medicina I, II udžbenik, Zavod za udžbenike i nastavna sredstva, Beograd, 2003. 5. Đurica S.: Interna medicina, udžbenik, Viša medicinska škola, Beograd, 2000. <i>Literature in English:</i> 6. Kasper D., Fauci A., Hauser S., Longo D.: Harrison's Principles of Internal Medicine, McGraw-Hill Prof., New York, 2015.			
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	15	150	0	0
Methods of teaching:				
Lectures, exercises, e-learning, exercises on dummy, simulation, clinical practice.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums	20			

PHYSIOTHERAPY IN NEUROLOGY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Physiotherapy in Neurology				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, sixth semester				
ECTS: 3				
Requirement: Physical Factors in Therapy, Physiotherapy Assessment, Skills in Physiotherapy, Basics of Neurology				
Course objective: Acquisition of knowledge to recognize neurological symptoms and acquisition of skills in rehabilitation of patients with diseases and injuries of the central and/or peripheral nervous system using physiotherapy methods.				
Course outcome: Upon the completion of the course and passing the exam students are able to recognize neurological symptoms in injuries and diseases of the nervous central system, to make a functional assessment, recognize patient needs, define goals and tasks of rehabilitation by applying physiotherapeutic methods, keep the rehabilitation course and monitor and controls the results, as well as to keep medical file of patients with neurological diseases, disorders and damages in all stages of rehabilitation.				
Course content: <i>Lectures</i> Clinical features, etiology, pathoanatomy, pathophysiology, course, prognosis and treatment of pathological conditions: injuries and inflammatory and degenerative brain and spinal cord diseases, diseases of peripheral cranial and spinal nerves, muscle diseases aimed at finding the most efficient method of kinesitherapy in combination with physical agents that would optimize patient conditions. Physiotherapy in rehabilitation of neurological patients. Principles, aims and tasks of physiotherapy in the rehabilitation process of patients with diseases and injuries of the peripheral motor neuron, extrapyramidal system. Possibilities of primary, secondary and tertiary prevention of disability. Team works. Contraindications. Functional assessment through a holistic approach. Individualized approach. Plan and programme. Selection of activities. Selection of aids, modifications, education. Assessment of the living, working and public environment. Adaptation and modification advice. Training of a disabled person, family members and society. Assessment of work ability. Collaboration with team members. Terminology. Keeping therapy documentation.				
<i>Exercises</i> Familiarization of students with the space, tools, equipment, work organization, documentation, place of physiotherapist in neurological patient rehabilitation ward. Spotting different neurological symptoms in patients with injuries of peripheral nerves of extremities, diseases of peripheral nerves (polyneuropathy, polyradiculoneuritis, polymyelitis), hemiplegia, spinal lesion, CNS diseases (multiple sclerosis, Parkinson's disease). Exercises in assessment of functional condition and determining needs of patients depending of the phase and stage of disease, determining objectives and tasks, rehabilitation monitoring, keeping and using medical documentation, making necessary provisional and/or functional aids or adaptations to standards aids. Training how to keep and use medical documentation, giving functional assessment of patients of all clinical conditions mentioned in lectures, drawing up kinesitherapy programmes, application of the selected basic and special methods, adaptation to patient responses, evaluation of the effects of the applied methods, logical combination with physical agents. Instructing patients and family members as to further steps aimed at maximum rehabilitation effects. Training in team work and use of information technology in the teaching base.				
Literature: <i>Literature in English:</i> 1. Kearney P., McGowan T., Anderson J., Strosahl D.: The Role of the Occupational Therapist on the Neuro-Rehabilitation Team, Springer Publishing Company, New York, 2007.				
<i>Literature in Serbian:</i> 2. Radojčić B.: Bolesti nervnog sistema, II izd., udžbenik, Elit-Medica, Beograd, 2000. 3. Senić N., Kaluđerović D., Radosavljević S.: Kineziterapija u rehabilitaciji bolesnika sa lezijama kičmene moždine, udžbenik, Viša medicinska škola u Beogradu, Beograd, 2001. 4. Jovanović L.: Kineziterapija kod povreda i oboljenja perifernog nervnog sistema, udžbenik, Visoka zdravstvena škola strukovnih studija, Beograd, 2002. 5. Jovanović-Sretenović T.: Praktikum-radna terapija u neurologiji, Visoka zdravstvena škola strukovnih studija, Beograd, 2012.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	300	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				

Grading (maximum 100 points)			
Pre-Exam commitments	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums	20		

PHYSIOTHERAPY IN PEDIATRICS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Physiotherapy in Pediatrics				
Language of instruction: Serbian				
Course status: mandatory				
Semester: second year, fourth semester				
ECTS: 4				
Requirement: Physical Factors in Therapy, Physiotherapy Assessment, Skills in Physiotherapy, Basics of Pediatrics				
Course objective: Acquisition of knowledge on most important diseases and injuries in children and adolescents, on deformities and congenital anomalies, acquisition of knowledge on possibilities of application of rehabilitation methods in sick or injured children and adolescents, acquisition of knowledge on specific features of physiotherapy and medical rehabilitation in pediatrics.				
Course outcome: Students are trained for individual and team work by applying physiotherapy and medical rehabilitation methods in pediatrics.				
Course content: <i>Lectures</i> Introductory part, psychomotor development of children, specific characteristics of a sick child. The role of physiotherapist in pediatrics. Child-parent-physiotherapist relationship. Assessment of psychophysical condition of a sick child, rehabilitation of children suffering from neurological diseases, rehabilitation in treatment of development disorders of children, rehabilitation of children with children cerebral paralysis, rehabilitation of children with rheumatic diseases, rehabilitation of children with respiratory and cardiovascular diseases, rehabilitation of children with orthopedic diseases, rehabilitation of children with vertebral column deformities, rehabilitation of children with deformities of extremities, rehabilitation of children after locomotor system injuries, postoperative rehabilitation of children, team collaboration in physiotherapy of children, special training of parents in rehabilitation of sick children. Development period neurobiology. Psychomotor development, motor control training. Physiotherapy of clinical conditions: neurological diseases of the central and peripheral nervous system, mental retardation, birth traumas, congenital abnormalities, injuries and diseases of bones, muscles and skin, respiratory and cardiovascular diseases of children. Medical documentation use and keeping. Development of examination skill and the skills of communication with children. Correlating knowledge in basic clinical courses, pathoanatomic substrate and effects of physiotherapy methods. During practical classes students are taught in independent programming, application, adaptation to child's reactions and to assess kinesitherapy methods in combination with recommended physical agents based on the treatment plan defined by a doctor for any pathological conditions presented in lectures. <i>Exercises</i> Application of physical agents in treating diseases in, assessment of their condition, training students in treatments.				
Literature: <i>Literature in Serbian:</i> - Savić K., Mikov A.: Rehabilitacija dece i omladine, udžbenik, Ortomediks, Novi Sad, 2007. - Savić K.: Rehabilitacija u pedijatriji, udžbenik, II izd., autorsko izdanje, Novi Sad, 2003. - Shepherd R.: Fizioterapija u pedijatriji, udžbenik, Ravena Pres, 2004. - Jovanović L.: Kineziterapija u pedijatriji, udžbenik, autorsko izdanje, Beograd 2000. - Veljković M.: Klinička fizikalna terapija, udžbenik, Visoka medicinska škola, Čuprija, 2004. - Jovanović Privrodski J.: Pedijatrija, udžbenik, Medicinski fakultet, Novi Sad, 2012. - Mardešić D.: Pedatrija, udžbenik, Školska knjiga, Zagreb, 2003. <i>Literature in English:</i> - Jan S. Tecklin: Pediatric Physical Therapy, LWW, New York, 2014. - Toby M. Long: Handbook of Pediatric Physical Therapy, Villey, London, 2012. - Kliegman R. M., Jenson H. B., Behrman R. E.: Nelson Textbook of Pediatrics, textbook, Saunders, New York, 2000. - Aruchamy L.: Practical Pediatrics Paperback, textbook, Jaypee, New Jersey, 2020.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	15	150	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			

Exercises/professional practice	40		
Colloquiums	20		

PHYSIOTHERAPY IN RHEUMATOLOGY

Study program:	Physiotherapy			
Type and level of study:	undergraduate professional studies			
Course:	Physiotherapy in Rheumatology			
Language of instruction:	Serbian			
Course status:	mandatory			
Semester:	third year, sixth semester			
ECTS:	3			
Requirement:	Physical Factors in Therapy, Physiotherapy Assessment, Skills in Physiotherapy, Basics of Rheumatology			
Course objective: Students are trained to apply the acquired knowledge and skills and to recognize symptoms, types, phases and stages of diseases, assess the situation, plan work therapy steps, guide the rehabilitation process, control the results and keep medical documents of patients with rheumatism, as well as in work with geriatric patients.				
Course outcome: Students are able to assess the patient from the aspect of physiotherapy in rheumatology, define therapeutic goals relating to psychic function disorder, motivate an individual and/or group, organize individual and group work, select, apply and quantify physiotherapeutic procedures and re-evaluate the effects of their work.				
Course content: <i>Lectures</i> Physiotherapy in the rehabilitation process of productive age and third age persons with inflammatory, degenerative, non-articular and metabolic rheumatic conditions. Principles and goals of physiotherapy in rheumatology. Objectives and tasks. Team work. Possibilities of work therapy in primary, secondary and tertiary prevention of disability. Physiotherapy assessment. Kinesitherapy diagnostics, assessment, plan and programme of kinesitherapy within rehabilitation of patients suffering from inflammatory, degenerative, non-articular and metabolic rheumatism. Practical application of kinesitherapy, prevention, education, therapeutic diagnostic and assessment, general and authorized methods of kinesitherapy, manual techniques, techniques implying use of devices within thermo-, photo-, magneto-, sono-, mechanic and electric therapy within team work in the rehabilitation process of patients suffering from rheumatic diseases. Individualized approach. Contraindications. Plan and programme. Selection of activities. Aids – assessment, selection, making and modifications of aids, training. Training. Assessment of the living, working and public environment. Advice as to adaptation. Collaboration with team members. Therapeutic documentation. <i>Exercises</i> Exercises in the application of physiotherapy methods in patients with inflammatory rheumatism (rheumatoid arthritis, juvenile chronic arthritis, polyarthritis, ankylosing spondilitis) degenerative (arthrosis – wear of extremity joints and vertebral column), non-articulate (PASH, epicondylitis), metabolic (gout) rheumatism and osteoporosis. Specific features of organization and carrying out physiotherapy in rehabilitation of patients with pulmonary and cardiovascular diseases. Specific features of functional assessment, therapeutic goals, selection of activities and quantification in work with elderly persons. Making and/or adjustment of necessary functional aids.				
Literature: <i>Literature in English:</i> 1. Goodacre L., McArthur M.: Rheumatology Practice in Occupational Therapy, Wiley-Blackwell, New Jersey, 2013. <i>Literature in Serbian:</i> 2. Pavlović M.: Kineziterapija u reumatologiji, udžbenik, Viša medicinska škola, Beograd, 2003. 3. Pilipović H.: Reumatologija, udžbenik, autorsko izdanje, Beograd, 2000. 4. Jovanović-Sretenović T.: Praktikum, Viša zdravstvena škola strukovnih studija, Beograd, 2012. 5. Nedvidek B.: Osnovi fizikalne medicine i medicinske rehabilitacije, udžbenik, Medicinski fakultet Novi Sad, 2003.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
15	15	300	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums/exam	20			

PHYSIOTHERAPY IN SURGERY WITH ORTHOPAEDICS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Physiotherapy in Surgery with Orthopaedics				
Language of instruction: Serbian				
Course status: mandatory				
Semester: third year, fifth semester				
ECTS: 3				
Requirement: Physical Factors in Therapy, Physiotherapy Assessment, Skills in Physiotherapy, Basics of Surgery with Orthopedics				
Course objective: Acquisition of theoretical knowledge and skills in taking care of patients in all surgical branches.				
Course outcome: Students will be trained to practically apply the acquired knowledge in all surgical disciplines necessary for acquisition of skill in taking care of all surgical patients in terms of nursing.				
Course content: <i>Lectures</i> Recapitulation of all teaching units in the area of surgery and orthopaedics. Application of asepsis and antisepsis principles in daily surgical practice. Possible methods of physiotherapy and medical rehabilitation of patients with injuries of digestive and endocrine system. Possible methods of physiotherapy and medical rehabilitation of patients with locomotor system diseases. Possible methods of physiotherapy and medical rehabilitation of patients with surgical conditions and injuries of blood and lymphatic vessels. Possible methods of physiotherapy and medical rehabilitation of patients with surgical conditions and injuries of the central and peripheral nervous system. Possible methods of physiotherapy and medical rehabilitation of patients with burns. Possible methods of physiotherapy and medical rehabilitation of patients with surgical conditions and urogenital tract injuries. Possible methods of physiotherapy and medical rehabilitation of patients with thoracic and lung injuries. Possible methods of physiotherapy and medical rehabilitation of patients with surgical conditions and cardiac injuries. Possible methods of physiotherapy and medical rehabilitation of children as oncology patients – specific pediatric features. Possible methods of physiotherapy and medical rehabilitation of oncology patients. Possible methods of physiotherapy and medical rehabilitation of post-transplant patients. Possible methods of physiotherapy and medical rehabilitation after semi-intensive and intensive care of surgical patients. <i>Practice</i> Recapitulation of all teaching units in the area of surgery and orthopaedics. Causes, pathological changes, clinical manifestations, course, prognosis, complications, conservative and surgical treatment, general plan of rehabilitation, indications and contraindications for kinesitherapy of the following surgical-orthopaedic conditions: dislocations, subluxation, injuries of meniscus, muscles, tendons, ligaments, nerves and blood vessels. Fractures of bones of the shoulder girdle and upper extremities, pelvic and lower extremities, vertebral column injuries without neurological disorders, thoracic fracture, injuries of head bones. Aseptic bone necrosis. Tumors. Burns. Polytraumas. General skeletal affections. Arthroplasty. Posture dysfunction. Sports injuries. Kinesitherapy planning by phases of recovers of soft tissues and bones structures, phases of early mobility, chronic phase. Medical documentation: use and keeping. Examination and assessment of functional condition. Demonstration of application of planned kinesitherapy methods.				
Literature: <i>Literature in English:</i> 1. Norton J., Barie P. S., Bollinger R. R., Chang A. E., Lowry S., Mulvihill S. J., Pass H. I., Thompson R. W.: Surgery: Basic Science and Clinical Evidence, Springer Publishing Company, New York, 2008. <i>Literature in Serbian:</i> 2. Stanić V., Maličević Ž. i sar.: Grudna hirurgija (ur.: Jaković R. M.), udžbenik, Medicinski fakultet, Beograd, 2004. 3. Banović D.: Povrede u sportu, udžbenik, Draslar partner, Beograd, 2006. 4. Nikolić Ž.: Povrede ekstremiteta, lečenje i medicinska rehabilitacija, Draslar partner, Beograd, 2009. 5. Pajić D., Mačvanin Đ. i sar.: Hirurgija, odabrana poglavlja, udžbenik, Medicinski fakultet, Novi Sad, 2009.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	45	300	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	

Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums/exam	20		

PUBLIC HEALTH

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Public Health				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, second semester				
ECTS: 5				
Requirement: no				
Course objective: The objective of the course is familiarization of students with measures, levels and organization of health care and their training for applying a social-medical approach in future practice, primarily in the field of nursing.				
Course outcome: Upon completion of the course, the students will be familiar with the principles of public health, health care politics, indicators of the population health status, classification systems in health care, and they will understand the functioning of the health care system, especially in the area of nursing, from the perspective of patients, health care professionals, health care institutions, the government, and society.				
Course content: <i>Lectures</i> The development and definition of social medicine; health and quality of life; social care of health; communication in health care; health protection; social inequalities in health care and obtaining health protection; vulnerable categories; health care policy; criteria for evaluation of socio-medical importance of health issues; methods of prevention and control of chronic non communicative diseases; health protection systems around the world; health protection programming; the role of health care institutions and health care professionals in the system of health care protection; health care technology; quality of health protection; classification systems in health care; management in health care; <i>Exercises</i> The analysis of public health aspects on the quality of life in the country and society. Comparative analysis of segments studied in public health and social medicine. Analysis of solutions to identical or similar situations in countries of the region and the European Union.				
Literature: <i>Literature in English:</i> 1. Mossialos E., Permanand G., Baeten R., Herve T.: Health systems governance in Europe: the role of European Union law and policy, Cambridge University Press, 2010. 2. Morrissey M. A.: Health Insurance, Health Administration Press, London, 2007. 3. Schneider M. J.: Introduction to Public Health, textbook, Jones-Barlett learning, New York, 2021. 4. Murphy F.: Community Engagement, Organization, and Development for Public Health Practice, Springer Publishing Company, New York, 2004. <i>Literature in Serbian:</i> 5. Lazarević A. i sar.: Javno zdravlje, socijalna politika i zdravstvena zaštita, udžbenik, Beograd, Visoka zdravstvena škola strukovnih studija, Beograd, 2016. 6. Hojer S.: Pristupi i metode u zdravstvenom odgoju, udžbenik, Koledž zdravlja, Ljubljana, 2005. 7. Lazarević A.: Socijalna medicina, autorsko izdanje, Beograd, 2015. 8. Simić S. i sar.: Socijalna medicina, udžbenik, Medicinski fakultet, Beograd, 2012.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, exercises, discussions, problem solving.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums	30			

QUALITY CONTROL

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Quality Control				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, sixth semester				
ECTS: 5				
Requirement: no				
Courses objective: The objective of the course is to understand the concept and essence of quality as a market category, to recognize the specific characteristics of quality within a work organization, with special emphasis on the particularities of service in a specific sector, and to become familiar with the basics of institutional organization, methods of institutional management, specificities of decision-making processes, administrative procedures, and change management within the institution. The objective also includes understanding and accepting the concept of standardization and the importance of standards in the process of defining quality.				
Course outcome: After attending and passing the course, the student should be qualified to practically apply internal procedures and standards for the purpose of establishing and controlling the quality of services, to determine and rank quality criteria, to master techniques and methods for measuring and controlling quality, and to evaluate the application of established standards, with a special focus on the type of organization they belong to. Additionally, the student should be trained in how to adopt and implement corrective measures aimed at quality management.				
Course content: <i>Lectures</i> Quality management: concept, definition of quality, reasons for implementing quality control processes. Characteristics of quality in specific areas (e.g., specifics of quality control in healthcare...), forms and levels of quality manifestation. Quality management systems: definition and development of various quality systems. Service standardization as the basis of quality, areas of standard application, types of standards. Requirements of ISO 9000, ISO 9001, ISO 14000, ISO 22000 standards; implementation of the HACCP system, HALAL standards. The importance of internal procedures within an organization. Management chain. The role of employees in ensuring quality, the importance and role of human resources, the human resource management process. The importance and role of management in achieving quality, managers as quality factors. The role of service users in creating service quality: perception, deviations, satisfaction, methods for measuring service quality. Strategic approach to quality, trends in business orientation of companies, changes in the structure of offerings. Strategic adaptation of services to modern trends: market segmentation, differentiation, positioning, application of modern technologies. <i>Exercises</i> Discussion on topics related to institutional organization and quality control processes. Analysis of practical experiences in Serbia and abroad. Visit by a certified ISO evaluator. Visit by a manager from a public or private company that implements quality control effectively. Analysis of practical examples from domestic and foreign, public and private healthcare organizations. Analysis and practical examples from the field of safety. Employee and client safety, discussion.				
Literature: <i>Literature in English:</i> 1. Morrissey Michael A.: Health Insurance, Health Administration Press, 2007. 2. Spath P.: Applying Quality Management in Healthcare: A Systems Approach, textbook, Health Administration Press, Boston, 2017. 3. Swanwick T., Vaux E.: ABC of Quality Improvement in Healthcare, Wiley, New York, 2020. <i>Literature in Serbian:</i> 4. Probbins S., Judge T.: Organizaciono ponašanje, Mate, Zagreb, 2009. 5. Kancir D., Antić Z.: Menadžment kvaliteta, Beogradska poslovna škola - Visoka škola strukovnih studija, Beograd, 2013. 6. Blešić I.: Menadžment kvaliteta u turizmu i hotelijerstvu, Prirodno-matematički fakultet, Novi Sad, 2017. 7. Legećić B.: Principi menadžmenta, udžbenik, Ekonomski fakultet, Subotica, 2007. 8. Milović Lj.: Organizacija zdravstvene nege sa menadžmentom, udžbenik, Naučna knjiga, Beograd, 2004. 9. Marinković Lj.: Menadžment u zdravstvenim organizacijama, G.A.D. Beograd, 2001. 10. Mićović P.: Zdravstveni menadžment, Obeležja, Beograd, 2008. 11. Službeni glasnici Republike Srbije. 12. Grujić V., Martinov Cvejin M., Legećić B.: Menadžment u zdravstvu, udžbenik, Medicinski fakultet, Novi Sad, 2007. 13. Grujić V., Martinov-Cvejin M., Legećić B.: Ekonomika zdravstva, Medicinski fakultet, Novi Sad, 1993.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching: lectures, case study, discussion, workshop, e-learning.			
Grading (maximum 100 points)			
Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums	30		

RADIOLOGY PHYSICS AND BASICS OF RADIOLOGY WORK METHODS

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Radiology Physics and Basics of Radiology Work Methods				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, first semester				
ECTS: 5				
Requirement: no				
Course objective: The objective of the course is to acquire knowledge about X-ray machines and devices, their components and the functions they perform, as well as the methods of their use.				
Course outcome: Upon completion of the course, the student should have mastered knowledge of X-ray equipment and other devices, which they can apply in practice; be familiar with X-ray machines and devices, their components, and the functions they perform; have acquired the basic skills for operating X-ray machines and devices and using them for diagnostic purposes; be able to explain the physical and technical principles of computed tomography, magnetic resonance imaging, nuclear medicine techniques (PET and SPECT devices), and the use of ultrasound machines; be able to connect these principles with patient protection, image quality, and artifacts; understand and be able to critically assess the factors that affect the quality of radiographic images; understand how to read and interpret operating instructions and accompanying documentation for X-ray machines and devices; understand the relationship between exposure parameters and the type of examination or patient size; understand how and why different factors influence the amount of secondary radiation and discuss their impact on image quality and radiation dose; as well as know how to adjust the parameters of X-ray and computed tomography equipment in accordance with the type of examination and the size of the patient.				
Course content: <i>Lectures:</i> X-ray machines through history. Modern X-ray tubes. Tube housing and cooling systems. X-ray machine generators. Control console and automatic exposure control. Radiological stands: standard and special. Radioscopy and image acquisition on screens. Remote-controlled, mobile, mammographic, dental, and other X-ray systems. Angiographic equipment and devices used in angiography suites. Computed tomography scanners, single-slice and multi-slice. Magnetic resonance imaging systems. Ultrasound diagnostic devices. Digital radioscopy, FLAT-PANEL detectors. DICOM standard and computer communication networks. Comparative analysis of similar radiological techniques and method selection. Computed tomography, magnetic resonance imaging, mammography, ultrasound. Nuclear medicine technology. <i>Exercises:</i> Practical exercises follow the theoretical teaching units through hands-on and demonstration work in real conditions at the Teaching Base. Students become familiar with and operate various X-ray machines and devices, learning their proper use and handling. They are introduced to practical work with mammography units, craniography equipment, remote-controlled systems, mobile X-ray units, dental X-ray machines, and others. Training covers work techniques, the use of fluoroscopy, and the production of various types of images. Students also gain experience in practical work with computed tomography (CT) scanners, magnetic resonance imaging (MRI) systems, and ultrasound diagnostic devices. Practical exercises include work with angiography equipment and other devices in the angiography suite.				
Literature: <i>Literature in English:</i> 1. Walter Huda: Review of Radiologic Physics, LWW, New York, 2016. 2. Andrea S. Doria, George Tomlinson, Joseph Beyene, Rahim Moineddin: Research Methods in Radiology: A Practical Guide, Thieme, Amsterdam, 2014. 3. Dance D. R., Christofides S., Maidment A. D. A., McLean I. D., Ng K. H (eds.): Diagnostic Radiology Physics: a Handbook for Teachers and Students, International Atomic Energy Agency, Vienna, Austria, 2014. <i>Literature in Serbian:</i> 4. Simonović J., Vuković J., Ristanović D., Radovanov R., Popov D.: Biofizika u medicini, udžbenik, Medicinska knjiga, 2003. 5. Stanković J., Milošević N.: Osnovi radiološke fizike, udžbenik, Visoka medicinska škola, Beograd, 2007. 6. Milanović M.: Organizacija i istorija radiološke službe, udžbenik, Visoka med. škola, Beograd, 2005. 7. Babić L.: Zdravstvena nega u radiologiji, udžbenik, Licej, Beograd, 2011. 8. Stojković B.: Zdravstvena nega u radiologiji, Naučna knjiga, Beograd, 2006.				
Number of classes (in semester):				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching: interactive classes, demonstration, practical exercises, analysis of practical examples, discussion, e-learning.			
Grading (maximum 100 points)			
Pre-Exam obligations	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquium/exam	30		

RARE DISEASES

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Rare Diseases				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, fourth semester				
ECTS: 5				
Requirement: no				
Course objective: The objective of the course is to acquaint students with the concept and types of rare diseases, the ways in which the health system helps patients with rare diseases, as well as the challenges in this area, in Serbia as well as in the other countries.				
Course outcome: After the course, the student should be acquainted with the concept and types of rare diseases, ways in which the health system can help patients with rare diseases, as well as the challenges that arise in this area, both in Serbia and in other countries.				
Course content: <i>Lectures</i> The notion of a rare disease; characteristics of rare diseases in Serbia and worldwide; the list of rare diseases and genes affecting their occurrence; the methodology with data on rare diseases in Serbia; burden born by stationary health-care institutions in Serbia, distribution of rare diseases globally; malignant tumors in children; challenges in fighting rare diseases in Serbia and globally, propositions of measures in Serbia; Zoja's Law; NORBS; the list of orphan drugs in all phases of their development, from European Medicines Agency labeling relating to medicines for treatment of rare diseases to obtaining permit for the European market; "assistance in diagnosis" option as an option of conducting tests according to disease signs and symptoms; recommendations and guidelines in case of urgent medical intervention and anaesthesia; overview of sites specialized in rare diseases in every country through Orphanet; directions of present research in rare diseases. <i>Exercises</i> The notion of a rare disease; characteristics of rare diseases in Serbia and worldwide; Zoja's Law; NORBS – discussion; discussion on rare diseases and challenges faced by patients in Serbia and worldwide.				
Literature: <i>Literature in English:</i> 1. Claudia Gonzaga-Jauregui, James R. Lupski: Genomics of Rare Diseases: Understanding Disease Genetics Using Genomic Approaches, Academic Press, London, 2022. 2. Robert M. Kliegman, Brett J. Bordini: Undiagnosed and Rare Diseases in Critical Care, An Issue of Critical Care Clinics, E-book, 2021. <i>Literature in Serbian:</i> 3. interni material predavača 4. Ministarstvo zdravlja Republike Srbije: Program za retke bolesti u Republici Srbiji za period 2020-2022. godine: https://www.zdravlje.gov.rs/tekst/343045/program-za-retke-bolesti-i-akcioni-plan.php 5. Ministarstvo zdravlja Republike Srbije: Lista retkih bolesti i gena uključenih u njihov nastanak, kao i enciklopedija retkih bolesti i njihova klasifikacija izvedena iz objavljenih stručnih klasifikacija: https://www.orpha.net/consor/cgi-bin/Disease.php?lng=EN 6. Ministarstvo zdravlja Republike Srbije: Popis „orphan“ lekova (lekova siročića), u toku svih faza njihovog razvoja, od oznake Evropske Medinske Agencije koja se odnosi na lekove namenjene lečenju retkih bolesti do dobijanja dozvole za evropsko tržište https://www.orpha.net/consor/cgi-bin/Drugs.php?lng=EN 7. Ministarstvo zdravlja Republike Srbije: Opcija “pomoć pri dijagnozi” omogućava korisnicima pretragu prema znacima i simptomima bolesti https://www.orpha.net/consor/cgi-bin/Disease_HPOTerms.php?lng=EN 8. Ministarstvo zdravlja Republike Srbije: Preporuke i smernice u slučaju hitne medicinske intervencije i anestezije https://www.orpha.net/consor/cgi-bin/Disease_Emergency.php?lng=EN				
Number of classes:				
Theoretical lectures	Theoretical exercises	Professional practice	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	

Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums	30		

RESEARCH METHODOLOGY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Research Methodology				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, sixth semester				
ECTS: 5				
Requirement: no				
Course objective: To equip students with the necessary skills for professional, scientific-research, and bibliographic-research work.				
Course outcome: Possession of necessary knowledge that will enable students to engage in professional, scientific-research, and bibliographic research work.				
Course content: <i>Lectures</i> Importance of scientific work. Difference between scientific and professional work. Stages of professional, scientific-research, and bibliographic-research work. Selection of topic and formulating a hypothesis. Selection of research methodology. Literature review. Methods of citing literature. Experiment. Surveys and processing of survey results, data protection. Statistical data processing. Quality of the sample. Objectivity and subjectivity. Result, discussion and conclusion. Structure and writing of professional and scientific work. Types of professional and scientific papers. Valuation of professional and scientific papers. Ways of professional and scientific paper publishing. Citation. Plagiarism. Protection of data. Methodology for preparing seminar and final papers. <i>Exercises</i> Techniques of collecting, organizing, and studying literature, as well as citing literature according to prescribed standards. Searching selected electronic databases. Processing research results. Graphical representation of data. Mastery of computer programs for writing and formatting texts (Word – MS Office), correct naming of tables, images, charts, and diagrams. Writing professional and scientific papers. Citing literature. Preparing a seminar paper. Principles of preparing a final paper, familiarizing with the procedure for preparing a final paper, simulation of preparing a final paper.				
Literature: <i>Literature in English:</i> 1. Ebel H. F., Bliefert C., Russey W. E.: The art of scientific writing, Wiley-VCH, Verlag GmbH & Co. KGaA, Weinheim, 2004. <i>Literature in Serbian:</i> 2. Milankov V., Jakšić P.: Metodologija naučno-istraživačkog rada u biološkim disciplinama, udžbenik, Prirodno-matematički fakultet, Novi Sad, 2006. 3. Šomodri Š., Novković N., Kraljević-Balalić M., Kajari K.: Uvod u naučni rad, udžbenik, Poljoprivredni fakultet, Novi Sad, 2004.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, exercises, discussions, e-learning, workshop, seminar paper, public presentation.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums/exam	30			

SKILLS IN PHYSIOTHERAPY

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Skills in Physiotherapy				
Language of instruction: Serbian				
Course status: mandatory				
Semester: first year, second semester				
ECTS: 5				
Requirement: no				
Course objective: Acquisition and adoption of knowledge in methods and techniques within manual therapy and physical forms of energy from natural and artificial sources in the area of thermotherapy, phototherapy, laser therapy, hydrotherapy, sonotherapy, magnetotherapy, balneo-climatotherapy and electrotherapy, acquisition of knowledge and skills in the application of methods within modern technology in electrictherapy and electrical diagnostic techniques, interpretation of obtained results.				
Course outcome: Practical application of the acquired knowledge and acquisition of skills in individual assessment in selection parameters in dosing, application methods and techniques corresponding to the expected therapy effects on the basis of the set goals and tasks in the application of physical forms of energy, individually adjusted to each patient in a team-based and active process of recovery, in observance of the rule primarily not to do any damage to a patient; practical application and acquisition of skills in individual work using modern techniques, in the professional selection of dosing parameters, methods and techniques of application aimed at obtaining the envisaged therapy results.				
Course content: <i>Lectures</i> Introductory part, definition and subject of physical therapy, history, classification of physical therapy, physical therapy with and without the use of devices; thermotherapy, paraffin therapy, peloidotherapy, parafango, clay etc., warm steam, suna, hydrotherapy, baths, showers, cryotherapy and cryomassage, inhalation therapy, magnetotherapy, importance of application in patient therapy, sonotherapy, infrasound and ultrasound, application techniques, ultrasonophoresis, phototherapy, solar spectrum, infrared and ultraviolet rays, heliotherapy, laser therapy, types of lasers, biological effects of laser therapy, electrotherapy, static electricity, voltage, electric power, galvanization, stable and unstable galvanization, hydrogalvanic procedures, drug electrophoresis, faradic and neofaradic current, diadynamic currents, interferential currents, techniques of application, exponential current, electrodiagnostics and electrostimulation, TEHC, high-frequency currents, darsonvalization, short wave diathermy. <i>Exercises</i> Thermotherapy, paraffin therapy, paraffin application and application techniques, cryotherapy, cryotherapy application and techniques, sauna, inhalation therapy, hydrotherapy – pool, tube, local baths, electrotherapy, classification of electrotherapies, types of devices, application of galvanic current to patients, hydrogalvanic procedures, four-cell baths, galvanic bath, drug electrophoresis, therapy application to patients, electrotherapy, devices and equipment, exponential current, sources, electrodiagnostics and electrostimulation, alternating low-frequency current, faradic current, techniques of application, medium-frequency currents (interferential currents), application to patients, high-frequency currents, short-wave, microwave and ultra-shortwave diathermy, sonotherapy, direct and indirect (subaquatic) application of ultrasound, ultraphonophoresis technique, phototherapy, ultraviolet rays, infrared rays, techniques of application, laser therapy, laser devices, application techniques, magnetotherapy, types of devices.				
Literature: <i>Literature in English:</i> 1. Goodman C. C., Snyder T. K.: Differential Diagnosis for Physical Therapists: Screening for Referral, Saunders, Ottawa, 2012. <i>Literature in Serbian:</i> 2. Mihailović V.: Fizikalna terapija, udžbenik, Obodsko slovo, Rijeka Crnojevića, 2002. 3. Veljković M.: Opšta fizikalna terapija, udžbenik, Visoka medicinska škola Čuprija, 2004. 4. Kunej D., Stanković T.: Praktikum fizikalne terapije, Visoka medicinska škola, Zemun, 2004. 5. Lidel L.: Nova knjiga o masaži, Panonija, Novi Sad, 2006. 6. Mihailović V.: Osnovi fizikalne medicine, Medicinska knjiga, Beograd, 1992. 7. Vesović Potić V.: Osnovi fizikalne medicine i rehabilitacije, udžbenik za studente medicine, Medicinski fakultet, Beograd, 2009.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	45	30	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case study, dicussions, e-learning.				
Grading (maximum 100 points)				

Pre-Exam commitments	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums	20		

SOMATOPEDY

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Somatopedy
Language of instruction:	Serbian
Course status:	elective
Semester:	first year, second semester
ECTS:	5
Requirement:	no
Course objective:	The aim of the course is for the student to acquire knowledge of somatopedy as a component in rehabilitation and teamwork.
Course outcome:	Upon attending the course and passing the exam, the student will acquire knowledge in the field of somatopedy and special somatopedic treatment in the rehabilitation of individuals with physical impairments, and will be able to apply this knowledge through therapeutic procedures in working with children and adolescents who have learning difficulties, as well as with adults and elderly persons who have certain functional, physiological, or motor deficits. Upon attending the course and passing the exam, the student will master working methods and clinical approaches in working with individuals with motor disorders and will be familiar with professional orientation methods for these individuals, with the ability to independently design, prepare, and implement activities in the areas of prevention, detection, diagnosis, rehabilitation, and education of persons with motor disorders.
Course content:	<i>Lectures</i> Somatopedy: definition, concept, subject, tasks, scope, and its connection with other sciences. Physical disability: concept, definition, classification. Rehabilitation, education, and protection of children with physical disabilities. Somatopedic diagnostics. Basic principles of somatopedic treatment. Methods of somatopedic rehabilitation. Somatopedic prosthetics. Activities of daily living for persons with physical disabilities. Preschool, primary, and secondary education of children with physical disabilities. Games and toys for children with physical disabilities. Classification of games. Space and organization of space for play. Physical education for students with physical disabilities, basic requirements of physical education. Somatopedagogical methodology of physical education. Special writing for persons with physical disabilities. Somatoandragogy. Organization of the teaching and educational process for adults. Somatopedy of elderly persons, senior citizen clubs. Classification of impairments. Multiple impairments, intellectual impairments. Speech and language impairments. Ear and hearing impairments; definition of hearing loss and deafness. Eye and vision impairments, classification of blindness; education of visually impaired children. Vocational training for persons with physical disabilities. <i>Exercises</i> Basic principles of somatopedic treatment (workshop, independent work). Methods of somatopedic rehabilitation (independent work). Somatopedic prosthetics (demonstration visit). Activities of daily living for persons with physical disabilities (demonstration visit). Preschool, primary, and secondary education of children with physical disabilities (visit with a professional working in this field). Games and toys for children with physical disabilities (internet research). Somatopedagogical methodology of physical education (visit with a professional). Senior citizen clubs (visit to a senior citizens' club). Work with instruments for assessing the status of persons with motor disorders (MACS, GMFCS, etc.), motor stimulation, phonostimulation and photostimulation, verbal stimulation. Relaxation and motivation.
Literature:	<i>Literature in English</i> 1. Haskell S. H., Barrett E.: The Education of Children with Motor and Neurological Disabilities, Nichols Publishing, London, 2014. 2. Vinson G.: The Somatic Therapy Blueprint: Unlock Your Mind-Body Connection & Find Inner Peace with a Transformative Pathway for Emotional Health - Holistic Exercises for Stress, Anxiety, Trauma & More, Independently published, London, 2024. <i>Literature in Serbian</i> 3. Stošljević L., Rapačić D., Stošljević M., Nikolić S.: Somatopedija, udžbenik, Naučna knjiga, Beograd, 2007. 4. Stošljević L., Stošljević M., Odović G.: Procena sposobnosti osoba sa motoričkim poremećajima, praktikum, Fakultet za specijalnu edukaciju i rehabilitaciju, Beograd, 2017. 5. Stošljević L. i sar.: Somatopedija, udžbenik, Naučna knjiga, Beograd, 2010. 6. Stošljević M.: Osnovni specijalne edukacije i rehabilitacije osoba sa motoričkim poremećajima, Fakultet za specijalnu edukaciju i rehabilitaciju, Beograd, 2015. 7. Petrović-Radić M.: Somatopedija, autorizovana skripta, Visoka zdravstvena škola, Beograd, 2021. 8. Nedović G., Rapačić D., Odović G., Potić S., Milićević M.: Socijalna participacija osoba sa invaliditetom, Društvo defektologa Srbije, Beograd, 2017. 9. Rapačić D., Nedović G.: Cerebralna paraliza: praktičke i kognitivne funkcije, Fakultet za specijalnu edukaciju i rehabilitaciju, Beograd, 2016.

Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching:				
lectures, exercises, case study, dicussions, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums/exam	30			

SPECIALIZED ENGLISH FOR MEDICINE I

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Specialized English for Medicine 1				
Language of instruction: Serbian				
Course status: elective				
Semester: first year, first semester				
ECTS: 5				
Requirement: no				
Course objective: Course objective is familiarization with characteristics of the English language, adoption of phrases and patterns necessary for communication at professional level and adoption of techniques of written and oral expressing in professional communication.				
Course outcome: Students will be able to apply the acquired knowledge in professional communication, create corresponding written forms in accordance with their professional communication and use speech patterns appropriate to a given situation.				
Course content: <i>Lectures</i> Grammar: English alphabet, basic reading and writing rules, greeting, personal pronouns, possessive pronouns, present tenses, gender and number of nouns, colors, interrogative and affirmative sentences; aspects of everyday life in English-speaking countries; prepositions with dative and accusative, the imperative, modal verbs, perfect tenses, clause framework; specialist texts in connection with students' future profession, specialist terminology, examples of commercial, specialist texts from practice; examples of documents students will deal with in practice. <i>Exercises</i> Students practice everyday situation dialogues (giving/understanding orientation instructions, retelling happenings, making plans, scheduling meetings, giving descriptions, reporting etc.); understanding texts on everyday life situations (e. g. advertisements), they expand vocabulary relating to their environment, family, job.				
Literature: <i>Literature in English:</i> 1. MacLean J.: English in Basic Medical Science, Oxford University Press, Oxford, 2000. 2. Turner S. Y., Sefika K.: Medical English for International Doctors and Nurses: How to communicate with your patients and colleagues effectively in English, textbook, Kindle Edition, London, 2015. 3. Murphy R.: English Grammar in Use, Cambridge University Press, Cambridge, 2014. 4. McCarthy M., O'Dell F.: English Vocabulary in Use, Cambridge University Press, Cambridge, 2006. 5. Hornby A.S.: Oxford Advanced Learner's Dictionary of Current English, Oxford University Pres, Oxford, 2008. <i>Literature in Serbian:</i> 6. Dragović R.: Engleski za zdravstvene radnike, udžbenik, Naučna knjiga, Beograd, 2004.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, practical exercises, communication, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Seminar paper	0			
Exercises/professional practice	40			
Colloquiums	20			

SPECIALIZED ENGLISH FOR MEDICINE 2

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Specialized English for Medicine 2				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, third semester				
ECTS: 5				
Requirement: Specialized English for Medicine 1				
Course objective: Course objective is familiarization with characteristics of the English language, adoption of phrases and patterns necessary for communication at professional level and adoption of techniques of written and oral expressing in professional communication.				
Course outcome: Students will be able to apply the acquired knowledge in professional communication, create corresponding written forms in accordance with their professional communication and use speech patterns appropriate to a given situation.				
Course content: <i>Lectures</i> Grammar: comparison of adjectives; causal clauses, future tense, preterite, conditional sentences, verbs of movement, active and passive voice; aspects of everyday life in English speaking countries: holiday, family life, education, life in city; relative clauses, verbs with prepositions, adjective forming suffixes and prefixes, deepening knowledge on dependent clauses; everyday life, business life and media in English speaking countries; specialist terminology relevant for students' future profession, grammatically and linguistically more complex texts; work material corresponding to everyday practice at work. <i>Exercises</i> Students practice how to express themselves orally and in writing on everyday life topics, such as free time, job, media, fashion, politics; they practice shorter discussions and stating their opinion, asking others on their views and pointing to opposite aspects of different views.				
Literature: <i>Literature in English:</i> 1. MacLean J.: English in Basic Medical Science, Oxford University Press, Oxford, 2000. 2. Turner S. Y., Sefika K.: Medical English for International Doctors and Nurses: How to communicate with your patients and colleagues effectively in English, textbook, Kindle Edition, London, 2015. 3. Murphy R.: English Grammar in Use, Cambridge University Press, Cambridge, 2014. 4. McCarthy M., O'Dell F.: English Vocabulary in Use, Cambridge University Press, Cambridge, 2006. 5. Hornby A.S.: Oxford Advanced Learner's Dictionary of Current English, Oxford University Press, Oxford, 2008. <i>Literature in Serbian:</i> 6. Dragović R.: Engleski za zdravstvene radnike, udžbenik, Naučna knjiga, Beograd, 2004.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, practical exercises, communication, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums	20			

SPECIALIZED GERMAN FOR MEDICINE 1

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Specialized German for Medicine 1
Language of instruction:	Serbian
Course status:	elective
Semester:	first year, first semester
ECTS:	5
Requirement:	no

Course objective:

The aim of the course is to improve a range of language knowledge, abilities, and skills, with a particular focus on business, so that students can independently interpret specialized texts, communicate competently in a business context, and write short texts in German on their own.

Course outcome:

The student acquires the vocabulary of general and business language, is aware of the diversity of linguistic means and actively applies them in both general and business contexts; reviews and deepens knowledge across all levels of language structure (phonetics, morphology, syntax, semantics); develops all language skills (reading, listening, writing, speaking); uses acquired knowledge for further independent language learning; develops sociolinguistic and strategic competence; independently uses printed and electronic dictionaries; and masters economic technical terminology through thematic texts and other materials from courses attended during their studies.

Course content:

Lectures

Grammar: personal pronouns; present tense; question words (W-Fragen); definite and indefinite articles; modal verbs in the present tense; imperative; possessive pronouns; time prepositions; preterite (sein, haben); polite forms (würde, könnte); comparison of adjectives. Text analysis in German: introductions and self-presentation in various situations, numbers and telling time, daily work-related activities, restaurant situations with business partners, company visits and relationships with business partners, business trips and their organization (booking tickets, accommodation, purchasing appropriate clothing), navigating the city, inviting, canceling, or postponing business meetings. Interpreting data from timetables, road maps, company charts, classified ads, and manufacturers' offers. Selection of texts in accordance with the chosen module – group work.

Exercises

Practicing grammatical structures of the German language through speaking situations and acquiring specific vocabulary. Developing all language skills (reading, writing, speaking, understanding written and spoken texts). Simulating conversations on covered topics – workshop. Presenting a company, its activities and organization – workshop. Selection of texts in accordance with the chosen module – group work.

Literature:

Literature in German:

1. Pude E. A., Specht F.: Menschen, Deutsch als Fremdsprache Kursbuch mit DVD-ROM, udžbenik, Hueber Verlag, München, 2012.
2. Loibl B. et al.: Schritte Plus im Beruf, Kommunikation am Arbeitsplatz, Max Hueber Verlag, Ismaning, 2015.
3. Becker N., Braunert J.: Alltag, Beruf, Kursbuch+Arbeitsbuch, Max Hueber Verlag, Ismaning, 2009.
4. Becker N., Braunert J., Schlenker W.: Unternehmen Deutsch Grundkurs, Klett Verlag, Stuttgart, 2005.
5. Becker N., Braunert J.: Unternehmen Deutsch Grundkurs, Arbeitsbuch, KlettVerlag, Stuttgart, 2004.
6. Grammatik - Ganz klar Übungsgrammatik A1-B1, uz audio materijal, Hueber Verlag, 2011.

Number of classes:

Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching:

lectures, practical exercises, communication, e-learning.

Grading (maximum 100 points)

Pre-Exam obligation	Points	Final Exam	Points
Lecture attendance	3	Exam	30
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	40		
Colloquiums	20		

SPECIALIZED GERMAN FOR MEDICINE 2

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Specialized German for Medicine 2				
Language of instruction: Serbian				
Course status: elective				
Semester: second year, third semester				
ECTS: 5				
Requirement: Specialized German for Medicine 1				
Course objective: The objective of the course is the further improvement of language knowledge, abilities, and skills, with a particular focus on business topics, at a higher level compared to Specialized German for Medicine 1 (previous course).				
Course outcome: The student continues to acquire vocabulary of general and business language and actively applies it in both general and business contexts, at a higher level than in Specialized German for Medicine 1 (previous course). The course includes revision and deepening of knowledge across all levels of language structure (phonetics, morphology, syntax, semantics) and further development of the language skills: reading, listening, writing, and speaking. Mastery of professional terminology through theme-based texts that are more complex than those in the previous course.				
Course content: <i>Lectures</i> Grammar at a higher level than in Specialized German Language 1 for Medicine (previous course): personal pronouns in dative and accusative, preterite of modal verbs, perfect tense, prepositions of place and distinction between dative and accusative, irregular comparison of adjectives, word order in subordinate clauses. Analysis of German-language texts that are grammatically and lexically more complex than in the previous course. Selection of texts according to the chosen module – group work. Analysis of business texts in German from real companies. Analysis of business texts from the internet. Analysis of business texts in German from the German press. Listening to news broadcasts (daily news) in German. Presentation of companies and hierarchical structure. Presentation of companies and products. Hotel reservations and appointment scheduling, contacts at congresses, events, meetings, trade fairs. Product promotion. Formulating inquiries, offers, orders, complaints, and written responses to the above. Interpreting job advertisements, writing CVs, résumés, and job applications. <i>Exercises</i> Practice of German grammatical structures covered in theoretical instruction: reading, writing, speaking, understanding written and spoken texts. Selection of texts that are more complex than in the previous course. Simulation of conversations on the covered topics – workshop. Selection of texts according to the chosen module – group work.				
Literature: <i>Literature in Serbian:</i> 1. Pude E. A., Specht F.: Menschen, Deutsch als Fremdsprache Kursbuch mit DVD-ROM, udžbenik, Hueber Verlag, Munchen, 2012. 2. Loibl B. et all.: Schritte Plus im Beruf, Kommunikation am Arbeitsplatz, Max Hueber Verlag, Ismaning, 2015. 3. Becker N., Braunert J.: Alltag, Beruf, Kursbuch+Arbeitsbuch, Max Hueber Verlag, Ismaning, 2009. 4. Becker N., Braunert J., Schlenker W.: Unternehmen Deutsch Grundkurs. Kursbuch, Klett Verlag, Stuttgart, 2005. 5. Becker N., Braunert J.: Unternehmen Deutsch Grundkurs, Arbeitsbuch, KlettVerlag, Stuttgart, 2004. 6. Grammatik - Ganz klar Übungsgrammatik A1-B1, uz audio materijal, Hueber Verlag, 2011.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: lectures, practical exercises, communication, e-learning.				
Grading (maximum 100 points)				
Pre-Exam obligations	Points	Final Exam	Points	
Lecture attendance	3	Exam	30	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	40			
Colloquiums	20			

SPORTS MEDICINE

Study program:	Physiotherapy
Type and level of study:	undergraduate professional studies
Course:	Sports Medicine
Language of instruction:	Serbian
Course status:	mandatory
Semester:	third year, sixth semester
ECTS:	5
Requirement:	no
Course objective:	Acquisition of knowledge on specific features of etiology, pathogenesis, course, prognosis, prevention, treatment of sports injuries from the aspect of physiotherapy. Familiarization of students with basics of sports physiology and sports medicine, as well as of the manners of functioning of organs and organ systems at a higher, changed, level of psychophysical exertion.
Course outcome:	Upon the completion of the course and passing the exam, the student has a knowledge of general principles and rules of conduct in sports laboratory, he/she is familiar with principal laboratory procedures of functional testing and skills in conducting laboratory tests. The student is familiar in detail with the manner of blood and urine taking and preparation and with methods of elementary laboratory blood and urine tests used in sports medicine practice. In addition to that, the student has knowledge of basic electrophysiology methods, has experience in register keeping, is able to recognize the basic registered parameters, independently measure artery blood pressure, heart auscultation, determine respiratory volumes, oxygen maximal uptake etc.
Course content:	<i>Lectures</i> Physiotherapeutic diagnostics assessment, plan and programme of physiotherapy within the treatment and rehabilitation of acute, endogenous, exogenous injuries in sport, soft tissue (contusions, distension, rupture of musculotendinous tissues and capsular ligament lesions) and bone and joint system, endogenous chronic sports diseases (capsular ligament lesion systems), post-operational procedures within sports medicine (arthroscopic interventions and invasive orthopaedic surgical intervention). Neuromuscular junction synapse. Mediating and basic mechanisms of synaptic transmission. Division of muscles. Morphophysiological characteristics of skeletal muscles. Skeletal muscle contraction. Motor unit. Tonus and thermogenesis. Muscle functioning, strength and fatigue. Physical aspects of man work (force, strength, function). Smooth muscles. Gas properties. Ventilation. Lung volume and capacity. Transport of gases to the cells. Primary and supportive respiratory muscles. Intrapleural pressure. Respiration control. Types of breathing. Breathing in conditions of reduced and increased atmospheric pressure. Blood plasma. Erythrocytes. Leucocytes. Immunities and immune bodies. Thrombocytes. Blood clotting and hemostasis. Blood types. Transfusion and transplantation. Bloodstream – functional division. Morphofunctional characteristics of the cardiac muscle. Cardiovascular haemodynamics. Cardiac conduction system. Athlete's heart. Electrocardiography – registration and analysis. Cardiac muscle contraction regulation. Capillary exchange. Peripheral circulation. Puls: definition, types and characteristics. Venous blood flow. Lymphatic system. Neurohumoral mechanisms of blood vessel tonus regulation. Anabolism and katabolism. Mineral substances and vitamins. Energy exchange study methods, energy depositing. Respiratory coefficient. Glycogen supercompensation. Lactic acid. Basal metabolic rate. Energy exchange under strain. Devising daily meal. Acid-base balance regulation. Chemical and physiological buffer systems. Glycaemia regulation. Calcium level regulation. Protein metabolism regulation (impact of physical activity on anabolic process in organism). Membrane potential. Action potential. Irritation rules. Neuron. Synapse division in the CNS. Neuromediators. Reflexes. Basal gangliae and dynamic stereotype forming. Cerebellum, vestibular system, proprioception and the role of balance. Tactile and thermal reception. Visceroreception. Smell and taste reception. Pain reception. Hypothalamus. Brain limbic system. Cerebral cortex. Dream. Learning and remembering. Consciousness. Energy capacities and their measuring. Steady state. Sports training and types of training. Theory of stress, stress stages, stressor. The role of sport and recreation according to the modern theory of functional systems in the reception and adaptation of organism to the adverse effects of stress. Overtraining and its implication on functional abilities of athletes, injury suffering. Chronobiology and its importance in sport. <i>Exercises</i> Testing functional capabilities (selection of a functional test, selection of a type of strain). Determining aerobic capacity (determining maximum oxygen consumption), anaerobic test, maximum strength, average strength, explosive strength, fatigue index; determining oxygen debt and oxygen deficit). Determining stabile state (test selection, monitoring cardiac frequency, monitoring respiratory parameters, monitoring oxygen consumption). Determining cardiac frequency (palpation, auscultation, monitoring cardiac frequency – ECG). Measuring artery blood pressure (TA monitoring – while resting and in the course of functional tests). Dynamometry (familiarization with the device and basic parameters of dynamometric testing of muscle strength, arm flexor strength, testing arm extensor and leg extensor). Body composition testing – basic anthropometric measurement (basic instruments – scale pelvimeter, sliding caliper, caliper, tape measure); determining BMI; determining somatotype, Heath-Carter constitution calculation; determining body fat mass using bioelectric impedance.
Literature:	<i>Literature in English:</i> 1. Costill D, Wilmore J.: Physiology of Sport and Exercise, Human Kinetics, Ravena Press, London, 2015.

Literature in Serbian:

2. Grujić N.: Fiziologija sporta, udžbenik, Futura, Petrovaradin, 2000.
3. Pećina M. i sar.: Sportska medicina, udžbenik, Medicinski fakultet, Zagreb, 2003.
4. Banović D.: Povrede u sportu, udžbenik, Draslar partner, Beograd, 2006.
5. Barak O. i sar.: Praktikum iz fiziologije sporta, Futura, Petrovaradin, 2006.
6. Nikolić Ž.: Fizikalna terapija lokomotornog aparata, Zavod za izdavanje udžbenika i nastavnih sredstava, Beograd, 2002.
7. Pećina M.: Sindromi prenaprezanja sustava za kretanje, Globus, Zagreb, 2006.

Number of classes:

Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0

Methods of teaching:

interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.

Grading (maximum 100 points)

Pre-Exam commitments	Points	Final Exam	Points
Lecture attendance	3	Exam	40
Activity	7		
Projects/Seminars	0		
Exercises/professional practice	20		
Colloquiums/exam	30		

SPORTS ACTIVITIES OF PERSONS WITH DISABILITIES

Study program: Physiotherapy				
Type and level of study: undergraduate professional studies				
Course: Sports Activities of Persons with Disabilities				
Language of instruction: Serbian				
Course status: elective				
Semester: third year, sixth semester				
ECTS: 5				
Requirement: no				
Course objective: Acquisition of knowledge and skills in evaluating daily needs of patients and activities from an aspect of physiotherapy, as well as functional abilities necessary to carry them out.				
Course outcome: The expected outcome of studying is training of students in organization and realization of certain sports activities of disabled persons, whereas the desired outcome of studying is training of students to creatively participate in devising such activities.				
Course content: <i>Lectures</i> Types and degrees of disability; groups of sports activities according to the degree and type of disability; principles of training in sports activities; team approach; drawing up plan and programme of activities; evaluation of functional capabilities of patient from an aspect of physiotherapy; analysis of activities; methods of practising self-care activities and everyday life; selection of a practising method; selection of physiotherapeutic procedures; aids and adaptations for self-care and activities of disabled persons; the role of physiotherapist and work therapist in the process of training of different categories of temporarily or permanently disabled patients (neurological, rheumatic, surgical disability); methods in education and training of children in self-care; self-care of elderly persons; specific characteristics of work within visiting service; the role of family; disability as a lifestyle; psychical stability, power of will. <i>Exercises</i> Groups of sports activities of disabled persons; drawing up a training plan for disabled persons according to disability degree; practical application and interpretation of FIM and KATZ indexes; analysis and practising sports activities according to actual capabilities of disabled persons; analysis of self-care activities in patients with hip endoprosthesis, lumbar disc herniation and different types of disabilities in children; examples from practice.				
Literature: <i>Literature in English:</i> 1. Hayley F.: Disability and Youth Sport, Taylor & Francis, Boston, 2009. <i>Literature in Serbian:</i> 2. Kasum G.: Sport osoba sa invaliditetom, udžbenik, Fakultet sporta i fizičkog vaspitanja, Beograd, 2015. 3. Indira J., Zehrudin J., Kada D., Adnan T.: Sport rekreacija i didaktičke igre osoba sa posebnim potrebama, udžbenik, Mark, Sarajevo, 2005. 4. Vučić R., Marković P., Savković N.: Klinička radna terapija - praktikum sa terapijskim medicinskim podsetnikom, Alternativa, Beograd, 2006. 5. Kanjuh Ž.: Principi obučavanja u aktivnostima svakodnevnog života - praktikum za potrebe studenata smera strukovni radni terapeut, Visoka medicinska škola, Beograd, 2011.				
Number of classes:				
Lectures	Exercises	Other classes (professional practice...)	Study research work	Other forms of teaching (individual work with student, projects...)
30	30	0	0	0
Methods of teaching: interactive classes, demonstration, practical exercises, analysis of examples from practice, case studies, discussion, e-learning.				
Grading (maximum 100 points)				
Pre-Exam commitments	Points	Final Exam	Points	
Lecture attendance	3	Exam	40	
Activity	7			
Projects/Seminars	0			
Exercises/professional practice	20			
Colloquiums/exam	30			