ERASMUS+ COURSE CATALOGUE 2025/2026

UNIVERSITY "VITEZ"

PROJECT ERASMUS+

Contents

INTRODUCTION

Dear Students,

Welcome to the Faculty of Health Sciences

Our mission is to provide students with modern, practice-oriented education through teaching, clinical training, research activities, study visits, conferences, and many other professional experiences.

List of Subjects Offered in English:

WINTER SEMESTER	SUMMER SEMESTER
General Courses	
• Biostatistics And Statistical Methods in Healthcare • Fundamentals Of Medical Chemistry and Biochemistry • Fundamentals Of Biology with Ecology	• Microbiology
Nursing	
• Geriatrics and Care of the Elderly • Emergency Medicine and Resuscitation	• Internal Medicine and Care of Internal Medicine Patients
Physiotherapy and Occupational Therapy	
• Introduction to Physiotherapy • Fundamentals of Physical Medicine and Rehabilitation	• Physiotherapy in Surgery and Traumatology • Balneology
Sanitary Engineering	
• Microbiological Analysis of Food and Water • Toxicology • Physico-Chemical Analysis of Food and Water • Waste Management • Methodology of Sampling in Sanitary and Hygiene Supervision	• Disinfection, Disinsection, And Deratization

Cosmetology	
• Monitoring and Correction of Skin Aging Parameters	• Basic Principles of Dermatology of the Skin and Skin Adnexa: Preventive and Therapeutic • Emergency Conditions in Cosmetology • Basic Cosmetic Treatments of Skin Adnexa • Special Cosmetic Treatments of Skin Adnexa • Application of Instrumental (Apparatus-Based) Cosmetics on Skin Adnexa • Body Aesthetics Parameters

SYLLABUS

COURSE TITLE	**BIOSTATISTICS AND STATISTICAL METHODS IN HEALTHCARE**		
LEVEL OF STUDY	Undergraduate		
Course Code	1.1.3.Z001	**Year of Study**	I
Course Instructor(s)	Prof.dr. sc. Jasmin Šutković	**Credit Value (ECTS)**	6
Teaching Assistants	mr. sc. Ajdina Karić		
COURSE DESCRIPTION			
COURSE OBJECTIVES	The course aims to familiarize students with methods of data collection in statistical research relevant to a target population. It equips students with the ability to gather and present numerical data that are comparable and up to date for monitoring population health, with a particular focus on morbidity, mortality, and vital indicators. Furthermore, students will master statistical methods for applying models to calculate correlations, assess statistical significance, and conduct hypothesis testing.		
Prerequisites and Entry Competencies	No Prerequisites		
Expected Learning Outcomes at the Course (10 outcomes)	By acquiring the knowledge and skills planned in the teaching process, the student will be able to collect data relevant to the health status of the population and master statistical methods of data utilization: • Prepare data for statistical analysis • Classify, describe, and present measurement results in healthcare • Define, distinguish, and understand the logic of basic concepts and methods of descriptive and inferential statistics • Calculate various measures of central tendency and dispersion • Determine confidence intervals, calculate the t-test, chi-square test, and Pearson's correlation coefficient • Select appropriate statistical methods for analyzing specific results • Define general, specific, and standardized morbidity and mortality rates • Present vital demographic events of the population • Develop competence in clinical evaluation of medical tests • Adequately interpret the results of statistical analyses •		
Course Content Detailed According to Teaching Hours	**Detailed Course Content (by Lectures)** **Lecture 1** • Importance of data collection in health statistics • Basic statistical concepts • Measurement scales • Measurement errors • Presentation of statistical data		

	• Role of statistics in health monitoring methods • Application of statistical methods and techniques • Relative numbers **Lecture 2** • Measures of central tendency • Measures of dispersion • Estimation of population parameters and confidence intervals • Correlation • Regression and regression analysis **Lecture 3** • Types of samples • Sample dependency • Population and sample • Confidence intervals • Normal distribution • Position of an individual result within a group **Lecture 4** • Hypothesis testing and the concept of statistical significance • Statistical models for hypothesis testing • z-test, t-test, chi-square test, ANOVA • Statistical testing and presentation of epidemiological problems • Probability distribution **Lecture 5** • Morbidity statistics • General, specific, and standardized rates • Quantitative and qualitative statistics in medical research • Data collection and analysis for defining health problems • Legally prescribed health records • Standardized health indicators • Vital demographic events of the population • Population distribution • Structural characteristics of the population • Migration statistics **Lecture 6** 1. Quantitative and qualitative statistics in medical research 2. Screening 3. Test validity 4. Test reliability 5. Test specificity 6. Test sensitivity 7. Case-control studies 8. Statistical inference	
Types of Instruction	In class Online	Consultations

Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	1,2	**Research**		**Experimenal Work**	
	Practical Work		**Report**		**Consultations**	0,3
	Essay		**Seminar Paper**	1,5	**Other (Specify)**	
	Midterm Exam	1,2	**Oral Exam**		**Other (Specify)**	
	Written Exam	1,8	**Project**		**Other (Specify)**	

Assessment and Evaluation of Student Performance During Classes and the Final Exam	**Assessment and Evaluation of Student Performance** Pre-exam Activities 9. Class Attendance: 1. Lecture attendance – 10 points ..... 10% 2. Interactivity – 5 points ..... 5% 3. Exercise attendance – 5 points ..... 5% 4. Consultations – 5 points ..... 5% 10. Seminar Paper / Essay / Case Study: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% 11. Midterm Exam (Colloquium): 1. 20 points ..... 20% Final Exam 4. Written / Oral Exam: 12. 30 points .....30% **TOTAL: ……100%**

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Biostatistics: A Foundation for Analysis in the Health Sciences — Wayne W. Daniel & Chad L. Cross	-	-	-
Supplementary Literature	UISBAX Materials			

Other (at the proposer's discretion)	-	-	-	-	-	-

COURSE TITLE	FUNDAMENTALS OF MEDICAL CHEMISTRY AND BIOCHEMISTRY		
LEVEL OF STUDY	**Undergraduate**		
Course Code	1.6.3.Z001	**Year of Study**	I
Course Instructor(s)	prof.dr.sc Jasmin Šutković	**Credit Value (ECTS)**	6
Teaching Assistants	Ajdina Karić, v. ass.		
COURSE DESCRIPTION			
COURSE OBJECTIVES	The main objective of this program is to introduce students to the chemical and biochemical composition of living organisms, to study the fundamental biochemical phenomena and processes occurring within the body, as well as the factors regulating these processes at the molecular level. Special attention is given to the content, structure, and role of the most significant compounds in both healthy and diseased organisms, as well as to the key metabolic pathways and cycles that coordinate all vital processes.		
Prerequisites and Entry Competencies	No Prerequisites		
Expected Learning Outcomes at the Course (10 outcomes)	Upon completion of the course *Fundamentals of Medical Chemistry and Biochemistry* and after passing the exam, the student will be able to: 13. Demonstrate knowledge of the Periodic Table of Elements, chemical bonding, and molecular structure 14. Classify organic compounds according to functional groups 15. Differentiate between the main classes of organic compounds 16. Understand the structural characteristics, reactivity, and properties of biomolecules (carbohydrates, proteins, lipids, and nucleic acids) 17. Explain the fundamental principles of protein structure and the impact of their conformation on biological function 18. Explain the basics of enzyme kinetics and the inhibition of enzymatic activity 19. Recognize the importance of carbohydrate and lipid structures in living organisms 20. Describe the basic concepts and principles of metabolism 21. Describe the structure and organization of biological membranes, and understand the structure and biological function of nucleic acids 22. Identify and describe molecular, biochemical, and cellular mechanisms essential for maintaining homeostasis in the organism		
Course Content Detailed According to Teaching Hours	• **Introduction to Chemistry and the Periodic Table of Elements** – Basic chemical laws and the chemical basis of the organism (intermolecular bonds, buffers, redox reactions) – *3 hours* • **Salts, Acids, Bases, Neutralization** – Types of solutions, diffusion, osmosis, dialysis, adsorption – *3 hours* • **Biomolecules** – Structure, properties, and classification of organic molecules (alcohols, aldehydes, ketones, carboxylic acids, amines) – *3 hours* • **Mineral Salts** – Macro- and microelements – *3 hours* • **pH and Acid-Base Balance** – *3 hours* • **Carbohydrates** – Structure, role, and classification – *3 hours* • **Lipids** – Structure, role, and classification – *3 hours* • **Amino Acids, Peptides, and Proteins** – *3 hours* • **Enzymes and Coenzymes** – Role and classification – *2 hours*		

	• **Metabolism of Carbohydrates, Fats, and Proteins** – Vitamins and hormones – *4 hours*					
Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	**0,9**	**Research**	**-**	**Experimenal Work**	**-**
	Practical Work	**-**	**Report**	**-**	**Consultations**	**-**
	Essay		**Seminar Paper**	**1,5**	**Other (Specify)**	**-**
	Midterm Exam	**1,8**	**Oral Exam**	**-**	**Other (Specify)**	**-**
	Written Exam	**1,8**	**Project**	**-**	**Other (Specify)**	**-**
Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities 23. Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% 24. Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% 25. Midterm Exam I: 1. 15 points .....5% 26. Midterm Exam II: 1. 15 points .....15% Final Exam 5. Written / Oral Exam: 27. 30 points ..... 30% TOTAL:..... 100%					
Compulsory Literature (available in the library and through other media)	**Title**			**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Principles of Medical Biochemistry — Gerhard Meisenberg & William H. Simmons https://repository.stikesrspadgs.ac.id/69/1/Principles%20of%20Medical%20Biochemistry%20Meisenberg%20Simmons-635hlm.pdf					
Supplementary Literature	UISBAX Materials					

Other (at the proposer's discretion)	-	-	-	-	-	-

COURSE TITLE	**FUNDAMENTALS OF BIOLOGY WITH ECOLOGY**		
LEVEL OF STUDY	**Undergraduate**		
Course Code	1.6.18.Z001	**Year of Study**	I
Course Instructor(s)	prof. dr. sc. Jasmin Šutković	**Credit Value (ECTS)**	6
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to the fundamentals of biology, human biology and genetics, anthropology, and human ecology, with a particular focus on the position of humans within the living world and the ecosystem.		
Prerequisites and Entry Competencies	No Prerequisites		
Expected Learning Outcomes at the Course (10 outcomes)	• Demonstrate knowledge of the fundamental biological laws • Understand the basics of cytology • Acquire basic knowledge of the function and structure of nucleic acids and chromosomes • Acquire fundamental knowledge of genes, the genome, phenotype, genotype, and mutations • Demonstrate understanding of the basics of human genetics • Acquire fundamental knowledge of anthropology • Understand the nature and factors of human biological variability • Demonstrate knowledge of anthropometry • Understand general ecological principles of environmental protection • Identify the causes of environmental pollution		
Course Content Detailed According to Teaching Hours	• **Introduction; The Cell and Basics of Cytology** • **Function and Structure of Nucleic Acids; Chromosomes** • **Genes, Genome, Genotype, Phenotype, Mutations** • **Fundamentals of Anthropology** (forensic anthropology, socio-anthropology) • **Nature and Factors of Human Biological Variability** – Types, levels, factors of variability, anthroposcopy, anthropometry, descriptive and inferential statistics • **Human Genetics** • **The Human Body** – Mass, height, body surface area, body shapes, index measures, constitution, growth factors, personality traits • **General Ecology** – Basic environmental sanitation issues • **Causes and Effects of Environmental Pollution** – Water, soil, air, food; toxins in agriculture, industry, and households; additives		

	• **Acute and Chronic Effects of Environmental Pollution on Health; Impact of Noise**					
Types of Instruction	In class Online	Consultations				
Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**		**Research**		**Experimenal Work**	1.2
	Practical Work		**Report**		**Consultations**	
	Essay		**Seminar Paper**	1.2	**Other (Specify)**	
	Midterm Exam	1.8	**Oral Exam**		**Other (Specify)**	
	Written Exam	1.8	**Project**		**Other (Specify)**	
Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities 28. Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% 29. Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% 30. Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: 31. 30 points ……..... 30% TOTAL: ……100%					
Compulsory Literature (available in the library and	**Title**	**Number of Copies in the Library**	**Availability through Other Media**		**Other**	

through other media)	• *Fundamentals of Ecology and Environment (3rd Edition)* — Pranav Kumar & Usha Mina		https://www.researchgate.net/publication/355381814_Fundamentals_of_Ecology_and_Environment_3e?utm_source=chatgpt.com		
Supplementary Literature	• Marjanović D, Primorac D, Dogan S. 2018. Forensic Genetics: Theory and Application, International Burch University, Sarajevo, BiH				
Other (at the proposer's discretion)	-	-	-	-	-

COURSE TITLE	MICROBIOLOGY		
LEVEL OF STUDY	**Undergraduate**		
Course Code	**3.2.30.Z001**	**Year of Study**	**I**
Course Instructor(s)	prof. dr. sc Amir Ibrahimagić	**Credit Value (ECTS)**	5
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introduction to the types, characteristics, and pathogenic effects of microorganisms on the human body, with the aim of understanding clinical manifestations, prevention, and the control of disease transmission.		
Prerequisites and Entry Competencies	No Prerequisites		
Expected Learning Outcomes at the Course (10 outcomes)	Upon completion of the course, students will be able to: • Demonstrate knowledge of the definition and division of microbiology and parasitology, classification of microorganisms, their distribution in nature, and the human microbiota • Understand the pathogenesis of bacterial infections (including vaccines) and the immune response to bacterial infections • Acquire knowledge about hospital-acquired infections, MRSA, and antibacterial drugs • Apply correct techniques for collecting samples for analysis • Perform bacterial/fungal cultivation on bacteriological/mycological media and apply staining methods for bacteria/fungi • Prepare parasitological specimens using appropriate techniques • Apply knowledge and techniques for serological identification of microorganisms • Demonstrate knowledge of fungi as infectious agents • Demonstrate knowledge of viruses as infectious agents • Demonstrate knowledge of parasites as infectious agents		
Course Content Detailed According to Teaching Hours	• Introduction – ***3 hours*** • Definition and Division of Microbiology and Parasitology – ***3 hours*** • Classification of Microorganisms – ***3 hours*** • Distribution and Human Microflora – ***3 hours*** • Routes of Entry and Spread of Infectious Agents; Vaccination – ***3 hours*** • Immunological Aspects and Serological Reactions – ***3 hours*** • Bacteriology: Infectious Agents – ***3 hours*** • Diseases Caused by Fungi – ***3 hours*** • Virology: Infectious Agents – ***3 hours*** • Parasitology and Diseases Caused by Parasites – ***3 hours***		
Types of Instruction	In class Online	Consultations	

Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	**0,75**	**Research**	**-**	**Experimental Work**	
	Practical Work	**-**	**Report**	**-**	**Consultations**	**-**
	Essay		**Seminar Paper**	**1,25**	**Other (Specify)**	**-**
	Midterm Exam	**1,5**	**Oral Exam**	**-**	**Other (Specify)**	**-**
	Written Exam	**1,5**	**Project**	**-**	**Other (Specify)**	**-**
Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities 32. Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% 33. Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% 34. Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: 35. 30 points ..... 30% TOTAL: 100%					
Compulsory Literature (available in the library and through other media)	**Title**			**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Microbiology — OpenStax				https://openstax.org/details/books/microbiology	**-**
Supplementary Literature						
Other (at the proposer's discretion)	**-**	**-**	**-**	**-**	**-**	**-**

COURSE TITLE	**GERIATRICS AND CARE OF THE ELDERLY**		
LEVEL OF STUDY	*Undergraduate*		
Course Code	3.2.26.Z001	**Year of Study**	***III***
Course Instructor(s)	Prof.dr.sc. Amra Macić Džanković	**Credit Value (ECTS)**	**5**
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Enabling students to acquire knowledge about changes in the physical and mental health of elderly individuals; educating older adults on the importance of maintaining health to prevent illness and frailty in old age; developing an empathetic approach and attitude toward the elderly; and emphasizing the need for active involvement of older adults to prevent social isolation.		
Prerequisites and Entry Competencies	Anatomy, Physiology, and Internal Medicine		
Expected Learning Outcomes at the Course (10 outcomes)	**Expected Learning Outcomes** By the end of the course, students will be familiar with: • The significance of demographic transition, feminization, and their impact on the health and economic status of the population in the Federation of Bosnia and Herzegovina (FBiH) • The importance of health promotion with a focus on the elderly population • The consequences for the country's economic development and their reflection on the capacity of health and social protection funds • The importance of preventing risk factors in the development of widespread non-communicable diseases and their complications • Communication skills with elderly individuals, especially in cases of confusion or disorientation • Methods of recognizing pain, its causes, prevention, measurement of intensity, methods of alleviation, criteria for care and treatment of pain, and rehabilitation • Methods of recognizing and managing fecal and urinary incontinence in elderly persons • Recognition and management of acute emergency conditions (myocardial infarction, cerebrovascular insult, ARDS) in the elderly, along with appropriate interventions • Institutional care for the elderly, including types of gerontological centers and forms of care provided in them • Home visits to elderly individuals and the types of healthcare services that can be delivered in home settings		
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics and Hours) • Demographic Changes in the Population of BiH / FBiH – *3 hours* • Criteria for Defining the Elderly Population – *3 hours* • Immobility in Elderly Persons – *3 hours* • Geriatric Changes in the Physical and Mental Health of Older Adults – *3 hours* • Nutrition and Lifestyles of the Elderly – *3 hours*		

	• Falls in Elderly Persons – *3 hours* • Decubitus Ulcers: Development, Care, Treatment, and Prevention – *3 hours* • Mental Health of Elderly Persons – *3 hours* • Dementia and Related Conditions – *3 hours* • Institutional Care for the Elderly – *3 hours*					
Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	0,75	**Research**		**Experimenal Work**	
	Practical Work		**Report**		**Consultations**	
	Essay		**Seminar Paper**	1,25	**Other (Specify)**	
	Midterm Exam	1,5	**Oral Exam**		**Other (Specify)**	
	Written Exam	1,5	**Project**		**Other (Specify)**	
Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points ..... 30% TOTAL: 100%					
Compulsory Literature (available in the library and through other media)	**Title**		**Number of Copies in the Library**		**Availability through Other Media**	**Other**
	Advanced Age Geriatric Care: A Comprehensive Guide — Nages Nagaratnam, Kujan Nagaratnam, Gary Cheuk		-		https://link.springer.com/book/10.1007/978-3-319-96998-5?utm_source=chatgpt.com	-
Supplementary Literature	UISBAX Materials					
Other (at the proposer's discretion)	/	/	/	/	/	/

COURSE TITLE	EMERGENCY MEDICINE AND RESUSCITATION		
LEVEL OF STUDY	**Undergraduate**		
Course Code	**3.2.8.Z001**	**Year of Study**	**III**
Course Instructor(s)	prof. dr. sc. Amra Macić Džanković	**Credit Value (ECTS)**	6
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introduction to medical emergency conditions, with a focus on the role of medical technicians in resuscitation and emergency medical care.		
Prerequisites and Entry Competencies	Anatomy, Physiology, Pathology		
Expected Learning Outcomes at the Course (10 outcomes)	• Acquire general concepts of emergency medicine • Recognize death and the signs of death • Understand the basics of shock, unconscious states, and resuscitation of circulation and respiration • Understand the basics of bleeding and hemostasis in emergency medicine, including autotransfusion • Understand the basics of acute poisonings (gases, addictive substances, alcohol, drugs, chemicals, pesticides, food) • Understand the basics of injuries (open, closed, polytrauma, chemical, physical, mechanical) • Understand the basics of poisonous snake and insect bites • Understand the basics of foreign bodies • Understand the basics of non-traumatic emergency conditions (by organ systems), including acute dehydration • Understand the organization of emergency medical services in peacetime, wartime, natural disasters, and other mass-casualty events		
Course Content Detailed According to Teaching Hours	• Introduction: General Concepts of Emergency Medicine **– *3 hours*** • Death and Signs of Death **– *3 hours*** • Shock, Unconscious States, Circulatory and Respiratory Resuscitation **– *3 hours*** • Bleeding and Hemostasis in Emergency Medicine; Autotransfusion **– *3 hours*** • Acute Poisonings **(gases, addictive substances, alcohol, drugs, chemicals, pesticides, food) – *3 hours*** • Injuries **(open, closed, polytrauma, chemical, physical, mechanical) – *3 hours*** • Bites of Poisonous Snakes and Insects **– *3 hours*** • Foreign Bodies **– *3 hours*** • Non-traumatic Emergency Conditions **(by organ systems) including acute dehydration – *3 hours*** • Organization of Emergency Services **in peacetime, wartime, natural disasters, and other mass-casualty events – *3 hours***		

Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	**0,9**	**Research**	-	**Experimenal Work**	-
	Practical Work	-	**Report**	-	**Consultations**	-
	Essay	-	**Seminar Paper**	**1,5**	**Other (Specify)**	-
	Midterm Exam	**1,8**	**Oral Exam**	-	**Other (Specify)**	-
	Written Exam	**1,8**	**Project**	-	**Other (Specify)**	-
Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities 1. Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% 2. Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% 3. Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: 4. 30 points ..... 30% TOTAL: 100%					
Compulsory Literature (available in the library and through other media)	**Title**		**Number of Copies in the Library**		**Availability through Other Media**	**Other**
	Practical Emergency Resuscitation and Critical Care — Kaushal Shah, Jarone Lee				https://www.cambridge.org/core/books/practical-emergency-resuscitation-and-critical-care/4E7C4393773477BDA0034935269B4ED5	- - -

Supplementary Literature	/					
Other (at the proposer's discretion)	-	-	-	-	-	-

COURSE TITLE	**INTERNAL MEDICINE AND CARE OF INTERNAL MEDICINE PATIENTS**		
LEVEL OF STUDY	**Undergraduate**		
Course Code	**3.2.27.Z001**	**Year of Study**	**II**
Course Instructor(s)	**prof. dr. sc. Amra Macić Džanković**	**Credit Value (ECTS)**	**7**
Teaching Assistants	Mr.**Alma Karajko**		
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introduction to the etiology, symptomatology, diagnostics, therapy, nursing care, and prevention of diseases of the internal organs, within the scope of the cardiovascular, respiratory, gastrointestinal, urinary, hematopoietic, endocrine, and locomotor systems.		
Prerequisites and Entry Competencies	Prerequisites: Anatomy and Physiology		
Expected Learning Outcomes at the Course (10 outcomes)	• Acquire the fundamentals of internal medicine and medical history taking • Acquire the fundamentals of internal propaedeutics • Understand the most common signs and symptoms of diseases affecting different organ systems • Understand the symptomatology of cardiovascular diseases • Understand the symptomatology of respiratory diseases • Understand the symptomatology of gastrointestinal tract diseases • Understand the symptomatology of kidney and urinary tract diseases • Understand the symptomatology of hematopoietic system diseases • Understand the symptomatology of endocrine diseases • Understand the symptomatology of locomotor system diseases		
Course Content Detailed According to Teaching Hours	• Introduction to Internal Medicine, Medical History (Anamnesis) – *3 hours* • Internal Propaedeutics – *3 hours* • Most Common Signs and Symptoms of Diseases of Organ Systems – *3 hours* • Cardiovascular Diseases – *3 hours* • Respiratory Diseases – *3 hours* • Diseases of the Gastrointestinal Tract – *3 hours* • Diseases of the Kidneys and Urinary Tract – *3 hours* • Diseases of the Hematopoietic System – *3 hours* • Endocrine Diseases – *3 hours* • Diseases of the Locomotor System – *3 hours*		
Types of Instruction	In class Online	Consultations	
Student			

<table>
<tr><td>Obligations</td><td colspan="6"></td></tr>
<tr><td rowspan="5">Student Workload Monitoring (enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Class Attendance</td><td>1,05</td><td>Research</td><td></td><td>Experimenal Work</td><td></td></tr>
<tr><td>Practical Work</td><td></td><td>Report</td><td></td><td>Consultations</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Seminar Paper</td><td>1,75</td><td>Other (Specify)</td><td></td></tr>
<tr><td>Midterm Exam</td><td>2,1</td><td>Oral Exam</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Written Exam</td><td>2,1</td><td>Project</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Pre-exam Activities
• Class Attendance:
1. Lecture attendance – 5 points 5%
2. Exercise attendance – 5 points 5%
3. Continuous work / Interactivity – 5 points 5%
• Seminar Paper:
1. Written part – 20 points 15%
2. Oral presentation – 5 points 10%
• Midterm Exam (Colloquium):
1. 30 points 30%
Final Exam
4. Written / Oral Exam:
• 30 points 30%
TOTAL:……100%</td></tr>
<tr><td rowspan="2">Compulsory Literature (available in the library and through other media)</td><td colspan="2">Title</td><td colspan="2">Number of Copies in the Library</td><td>Availability through Other Media</td><td>Other</td></tr>
<tr><td colspan="2">Harrison's Principles of Internal Medicine — redakcija: Anthony S. Fauci, Dennis L. Kasper, Stephen L. Hauser, J. Larry Jameson, Joseph Loscalzo et al.</td><td colspan="2"></td><td>https://accessmedicine.mhmedical.com/book.aspx?bookID=3095</td><td>-</td></tr>
<tr><td>Supplementary Literature</td><td colspan="6">UISBAX Materials</td></tr>
<tr><td>Other (at the proposer's discretion)</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td></tr>
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COURSE TITLE	INTRODUCTION TO PHYSIOTHERAPY		
LEVEL OF STUDY	**Undergraduate**		
Course Code	3.6.2.Z001	**Year of Study**	II
Course Instructor(s)	Doc.dr.sc. Tanja Bavrka Bošnjak	**Credit Value (ECTS)**	**7**
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	The course introduces students to the theoretical, research, and practical scope of physiotherapy. It familiarizes them with fundamental concepts and definitions in physiotherapy, the physiotherapy profession, the ICF classification, physiotherapy assessment, intervention and evaluation, planning and organization of physiotherapy, teamwork, common clinical problems in physiotherapy, professional standards, and research in the field of physiotherapy.		
Prerequisites and Entry Competencies	Anatomy		
Expected Learning Outcomes at the Course (10 outcomes)	• Acquire the basics of physical medicine and rehabilitation, physiotherapy (history, definitions, concepts, classifications), and the scope of physiotherapy practice • Gain knowledge necessary for the professional work of physiotherapists • Understand professional terminology, including the ICF (International Classification of Functioning, Disability, and Health) • Acquire knowledge of physical prophylaxis • Understand diagnostic methods in physical medicine and conduct physiotherapy assessment • Acquire the basics of physical therapy, physiotherapy interventions, and physiotherapy evaluation • Understand the fundamentals of medical rehabilitation (goals, tasks, development of rehabilitation plans, organization of work) • Plan and organize physiotherapy at different levels, including teamwork in healthcare settings • Acquire the basics of professional rehabilitation, apply standards in physiotherapy practice, and address the most common clinical problems in physiotherapy • Acquire the fundamentals of research in physiotherapy		
Course Content Detailed According to Teaching Hours	• **Physical Medicine and Rehabilitation, Physiotherapy** – History, definitions, concepts, classifications, and scope of physiotherapy practice • **Physiotherapist Education** • **ICF (International Classification of Functioning, Disability and Health)** • **Physical Prophylaxis** • **Physical Diagnostics / Physiotherapy Assessment**		

	• **Physical Therapy / Physiotherapy Intervention and Evaluation** • **Medical Rehabilitation** – Goals, tasks, development of rehabilitation plans, and organization of work • **Planning and Organizing Physiotherapy** – Levels of organization and teamwork • **Professional Rehabilitation** – Standards in physiotherapy practice and the most common clinical problems in physiotherapy • **Research in Physiotherapy**
Types of Instruction	In class Online Consultations

Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	1,05	**Research**	-	**Experimenal Work**	-
	Practical Work	-	**Report**	-	**Consultations**	-
	Essay	-	**Seminar Paper**	1,75	**Other (Specify)**	-
	Midterm Exam	2,1	**Oral Exam**	-	**Other (Specify)**	-
	Written Exam	2,1	**Project**	-	**Other (Specify)**	-

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points …….. ..... 30% TOTAL: ……100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**

	Cifu DX. Braddom's physical medicine and rehabilitation. Elsevier, Philadelphia, 2016.		-		**DX Cifu** - 2020 - books.google.com	-
Supplementary Literature	UISBAX Materials					
Other (at the proposer's discretion)	-	-	-	-	-	-

COURSE TITLE	**FUNDAMENTALS OF PHYSICAL MEDICINE AND REHABILITATION**					
LEVEL OF STUDY	**I CIKLUS**					
Course Code	3.2.32.Z001		**Year of Study**		II	
Course Instructor(s)	Prof.dr.sc. Zoran Bajin		**Credit Value (ECTS)**		7	
Teaching Assistants						
COURSE DESCRIPTION						
COURSE OBJECTIVES	Students are required to acquire knowledge about the fundamental characteristics of individual physical modalities and to apply them in everyday practice.					
Prerequisites and Entry Competencies	Anatomy					
Expected Learning Outcomes at the Course (10 outcomes)	• Acquire the fundamental principles of physical medicine and rehabilitation • Understand the basic classification of physical medicine • Acquire the basics of patient rehabilitation • Understand the fundamentals of physical stimuli in therapy • Acquire knowledge of thermotherapy principles • Acquire knowledge of hydrotherapy principles • Acquire knowledge of heliotherapy principles • Acquire knowledge of electrotherapy principles • Acquire introductory knowledge of kinesiotherapy • Develop basic kinesiotherapy skills					
Course Content Detailed According to Teaching Hours	• Introduction • Fields and Branches of Physical Medicine • Rehabilitation • Physical Stimuli • Thermotherapy • Hydrotherapy • Heliotherapy • Electrotherapy • Kinesiotherapy – Introduction • Kinesiotherapy – Basic Skills					
Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring ***(enter the share in***	**Class Attendance**	1,05	**Research**	-	**Experimenal Work**	-

ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)	**Practical Work**	-	**Report**	-	**Consultations**	-
	Essay	-	**Seminar Paper**	1,75	**Other (Specify)**	-
	Midterm Exam	2,1	**Oral Exam**		**Other (Specify)**	
	Written Exam	2,1	**Project**		**Other (Specify)**	

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points ……..... 30% TOTAL: ……100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Essentials of Physical Medicine and Rehabilitation, 4th Edition — Walter R. Frontera, Julie K. Silver, Thomas D. Rizzo Jr.	-	https://www.elsevierhealth.com/essentials-of-physical-medicine-and-rehabilitation-9780323549479.html	-
Supplementary Literature	UISBAX Materials			
Other (at the proposer's discretion)	-	-	-	-

COURSE TITLE	PHYSIOTHERAPY IN SURGERY AND TRAUMATOLOGY		
LEVEL OF STUDY	Undergraduate		
Course Code	3.6.2.Z002	**Year of Study**	II
Course Instructor(s)	doc. dr. sc. Tanja Bavrka Bošnjak	**Credit Value (ECTS)**	6
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introduction to surgical diseases and the consequences of injuries.		
Prerequisites and Entry Competencies	Anatomy and Pathology		
Expected Learning Outcomes at the Course (10 outcomes)	• Understand the role and importance of physiatry in surgery • Apply the basics of kinesiotherapy in the preoperative period • Apply physiotherapy in the postoperative period • Implement physical procedures in early and late rehabilitation after surgical interventions • Acquire the fundamentals of traumatology of the locomotor system • Understand the basics of alloarthroplasty and its relation to physiatry • Acquire the fundamentals of neurosurgery and physiatry • Acquire the fundamentals of cardiac surgery and physiatry • Acquire the fundamentals of visceral surgery and physiatry • Acquire the fundamentals of miscellaneous surgical and physiatric approaches •		
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics and Hours) • Role and Importance of Physiatry in Surgery – ***3 hours*** • Basics of Kinesiotherapy in the Preoperative Period – ***3 hours*** • Application of Physiotherapy in the Postoperative Period – ***3 hours*** • Application of Physical Procedures in Early and Late Rehabilitation After Surgery – ***3 hours*** • Traumatology of the Locomotor System – ***3 hours*** • Alloarthroplasty and Physiatry – ***3 hours*** • Neurosurgery and Physiatry – ***3 hours*** • Cardiac Surgery and Physiatry – ***3 hours*** • Visceral Surgery and Physiatry – ***3 hours*** • Miscellaneous Topics – ***3 hours***		
Types of Instruction	In class Online	Consultations	
Student Obligations			

Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	0,9	**Research**		**Experimenal Work**	
	Practical Work		**Report**		**Consultations**	
	Essay		**Seminar Paper**	1,5	**Other (Specify)**	
	Midterm Exam	1,8	**Oral Exam**		**Other (Specify)**	
	Written Exam	1,8	**Project**		**Other (Specify)**	

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points ……..... 30% TOTAL: ……100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Springer:New York. 2. Faneli, C. G. Posterior cruciate ligament injuries. Springer: New York. 2015.	-	-	-
	Blom. A. W. And other., Apley & Solomon*s System of Ortopaedics and Trauma. Thent Edition. Taylor & Francis Group, LLC. Boca Raton., London., New York. 2018.	-	-	-
Supplementary Literature	/			
Other (at the proposer's discretion)	/	/	/	/

COURSE TITLE	BALNEOLOGY		
LEVEL OF STUDY	**Undergraduate**		
Course Code	3.6.2.Z003	**Year of Study**	II
Course Instructor(s)	Doc.dr.sc. Tanja Bavrka Bošnjak	**Credit Value (ECTS)**	6
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to natural healing agents. The course provides knowledge about their characteristics, biological effects, methods of preparation and application, as well as indications and contraindications for their use.		
Prerequisites and Entry Competencies	Anatomy		
Expected Learning Outcomes at the Course (10 outcomes)	• Acquire basic concepts, definitions, and historical background of natural healing agents • Understand peloids, including classification, chemical composition and physical properties, balneological characteristics, biological effects, preparation and application techniques, indications and contraindications, and artificial peloids • Demonstrate knowledge of mineral waters: physical properties and chemical composition, classification, physiological effects, therapeutic use, balneological reactions, indications, and contraindications • Acquire knowledge of therapeutic gases: carbon dioxide, hydrogen sulfide, radon, ozone • Understand the basics of medical meteorology: meteorology, meteorophysiology, meteoropathology, and meteorotropism of certain diseases and conditions • Acquire knowledge of medical climatology: climatic factors, climate classification, climatophysiology, and climatopathology • Understand the basics of climatotherapy: aerotherapy, heliotherapy, high-altitude therapy, thalassotherapy, psammotherapy, speleotherapy • Understand biological rhythms and balneoclimatic locations • Acquire the basics of mineral waters (reinforcement and application in therapy) • Acquire knowledge of health tourism and wellness practices		
Course Content Detailed According to Teaching Hours	• **Introduction:** Basic concepts, definitions, and historical background • **Peloids:** Classification, chemical composition and physical properties, balneological characteristics, biological effects, preparation and application techniques, indications and contraindications, artificial peloids • **Mineral Waters:** Physical properties and chemical composition, classification, physiological effects, therapeutic application, balneological reactions, indications and contraindications		

	• **Therapeutic Gases:** Carbon dioxide, hydrogen sulfide, radon, ozone • **Medical Meteorology:** Meteorology, meteorophysiology, meteoropathology, meteorotropism of specific diseases and conditions • **Medical Climatology:** Climatic factors, climate classification, climatophysiology, climatopathology • **Climatotherapy:** Aerotherapy, heliotherapy, high-altitude therapy, thalassotherapy, psammotherapy, speleotherapy • **Biological Rhythms; Balneoclimatic Locations** • **Mineral Table Waters** • **Health Tourism and Wellness**
Types of Instruction	In class Online Consultations

Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	0,9	**Research**	-	**Experimenal Work**	-
	Practical Work	-	**Report**	-	**Consultations**	-
	Essay	-	**Seminar Paper**	1,5	**Other (Specify)**	-
	Midterm Exam	1,8	**Oral Exam**	-	**Other (Specify)**	-
	Written Exam	1,8	**Project**	-	**Other (Specify)**	-

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points ……..... 30% TOTAL: ……100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Fialka - Moser V. et al. Hydrotherapie und Balneotherapie. Pflaum, 2009.	-	-	-
Supplementary Literature	Gillert O. Hydrotherapie und Balneotherapie. Munchen: Pflaum, 1990. – dostupno na: https://www.amazon.de/Hydrotherapie-Balneotherapie-Theorie-Praxis-			

	Physiotherapie/dp/3790505277					
Other (at the proposer's discretion)	-	-	-	-	-	-

COURSE TITLE	DISINFECTION, DISINSECTION, AND DERATIZATION		
Year of Study	**Year of Study**		
Course Code	3.3.5.Z002	**Year of Study**	II
Course Instructor(s)	doc.dr.sc. Emilija Hrapović	**Credit Value (ECTS)**	7
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to the biology of rodents and insects, as well as to the protected species in Bosnia and Herzegovina.		
Prerequisites and Entry Competencies	**Prerequisite:** Fundamentals of Biology with Ecology		
Expected Learning Outcomes at the Course (10 outcomes)	Detailed Course Content (by Topics) • Introduction • Dynamics of Sterilization and Disinfection – Method Selection • Disinfection: Mechanism of action of disinfectants on microorganisms • General Introductory Notes on Rodents and Insects • Systematics of Rodents and Insects • Morphology and Physiology of Rodents and Insects • Ecology of Rodents and Insects • Overview of Protected, Rare, and Endangered Species in Bosnia and Herzegovina • Methods and Organization of Deratization • Causes of Population Decline, Implemented Protective Measures, and Measures to Be Undertaken		
Sadržaj predmeta detaljno razrađen prema satnici nastave:	1. **Introduction** – *2 hours* • **Dynamics of Sterilization and Disinfection – Method Selection** – *4 hours* • **Disinfection:** Mechanism of Action of Disinfectants on Microorganisms – *3 hours* • **General Introductory Notes on Rodents and Insects** – *2 hours* • **Systematics of Rodents and Insects** – *4 hours* • **Morphology and Physiology of Rodents and Insects** – *3 hours* • **Ecology of Rodents and Insects** – *3 hours* • **Overview of Protected, Rare, and Endangered Species in Bosnia and Herzegovina** – *3 hours* • **Methods and Organization of Deratization** – *3 hours* • **Causes of Population Decline, Implemented Protective Measures, and Recommended Measures** – *3 hours*		

<table>
<tr><td>Types of Instruction</td><td colspan="3">In class
Online</td><td colspan="3">Consultations</td></tr>
<tr><td>Student Obligations</td><td colspan="6"></td></tr>
<tr><td rowspan="5">Student Workload Monitoring
(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Class Attendance</td><td>1,05</td><td>Research</td><td></td><td>Experimenal Work</td><td></td></tr>
<tr><td>Practical Work</td><td></td><td>Report</td><td></td><td>Consultations</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Seminar Paper</td><td>1,75</td><td>Other (Specify)</td><td></td></tr>
<tr><td>Midterm Exam</td><td>2,1</td><td>Oral Exam</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Written Exam</td><td>2,1</td><td>Project</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Assessment and Evaluation of Student Performance
Pre-exam Activities
• Class Attendance:
1. Lecture attendance – 5 points 5%
2. Exercise attendance – 5 points 5%
3. Continuous work / Interactivity – 5 points 5%
• Seminar Paper:
1. Written part – 15 points 15%
2. Oral presentation – 10 points 10%
• Midterm Exam (Colloquium):
1. 30 points 30%
Final Exam
4. Written / Oral Exam:
• 30 points ……..... 30%
TOTAL: ……100%</td></tr>
<tr><td>Compulsory Literature (available in the library and through other media)</td><td colspan="2">Title</td><td>Number of Copies in the Library</td><td>Availability through Other Media</td><td>Other</td></tr>
<tr><td></td><td colspan="2">Principles of Food Sanitation, Sixth Edition — Norman G. Marriott, M. Wes Schilling, Robert B. Gravani</td><td>(1)</td><td>-</td><td>-</td></tr>
<tr><td>Supplementary Literature</td><td colspan="6">/</td></tr>
</table>

Other (at the proposer's discretion)	/	/	/	/

COURSE TITLE	MICROBIOLOGICAL ANALYSIS OF FOOD AND WATER		
LEVEL OF STUDY	**Undergraduate**		
Course Code	**3.3.5.Z003**	**Year of Study**	**III**
Course Instructor(s)	prof. dr. sc. Amir Ibrahimagić	**Credit Value (ECTS)**	6
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to water sanitation and disinfection, diseases caused by contaminated water, food as an ecosystem and its properties, characteristics of microorganisms in food production (fermentation, enzymatic activity, preserved food), the role of microorganisms in the process of food spoilage, food poisoning, and food quality control in production.		
Prerequisites and Entry Competencies	Microbiology		
Expected Learning Outcomes at the Course (10 outcomes)	• **Detailed Course Content (by Topics)** • **Concepts of Bacteriological Control of Drinking Water:** Water and sanitation; drinking water quality control; wastewater management • **Epidemiology of Waterborne Diseases:** Mechanisms of "water-borne" infections • **Legal Regulations and the Role of Inspection Authorities in Food Analysis:** Submission and collection of food samples for laboratory testing; prioritization of food testing; analytical reporting • **Factors Affecting Microbial Growth in Food:** Food as a medium; ecosystems in food; homeostasis; intrinsic and extrinsic factors influencing microbial growth; microbial damage; viable but non-culturable cells (VBNC); spores and their significance in food microbiology; low-acid canned foods • **Microbiological Control of Food:** Indicator microorganisms of food contamination; microbiological criteria; the need for establishing microbiological criteria; definition • **Techniques of Microbiological Food Analysis:** Determination of bacteriological cleanliness of hands, surfaces, and containers • **Testing Sterility of Canned Meat Products:** Methods for examining canned meat sterility; investigation of spoilage causes in canned meat • **Control of Bacteriological Cleanliness in Food Industry Facilities:** Monitoring cleanliness of equipment and staff hygiene in food production plants and public catering establishments • **Foodborne Diseases:** Sources of food contamination; causative agents of food poisoning; the role of public health in monitoring, reducing foodborne pathogens, eliminating sources of contamination; irradiation as a method of protecting food products from microorganisms • **Strategies for Ensuring Food Safety in Production:** Good Manufacturing Practice (GMP); sanitation; sanitation principles; disinfection; Standard Sanitation Operating Procedures (SSOP)		
Sadržaj predmeta detaljno razrađen prema satnici nastave:	• Microorganisms and food: sources of contamination and microbial spoilage of food – 3 hours • Microorganisms in industrial processes – 3 hours • Microbiology of milk and dairy products: pasteurization, sterilization, fermented dairy products – 3 hours • Food poisoning caused by microbial contamination: salmonellosis, staphylococcal food poisoning, bacterial toxin poisoning – 3 hours • Role of spore-forming bacteria in food contamination – 3 hours • Rare bacterial causes of food poisoning: Listeria, enterohemorrhagic E. coli – 3 hours • Microbiological control of food – 3 hours • Control indicators, HACCP, parasites in food – 3 hours • Microbiological control of water – 3 hours • Diseases caused by contaminated water – 3 hours		

<table>
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Online</td><td colspan="3">Consultations</td></tr>
<tr><td>Student Obligations</td><td colspan="6"></td></tr>
<tr><td rowspan="5">Student Workload Monitoring
(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Class Attendance</td><td>0,9</td><td>Research</td><td>-</td><td>Experimenal Work</td><td>-</td></tr>
<tr><td>Practical Work</td><td>-</td><td>Report</td><td>-</td><td>Consultations</td><td>-</td></tr>
<tr><td>Essay</td><td>-</td><td>Seminar Paper</td><td>1,5</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Midterm Exam</td><td>1,8</td><td>Oral Exam</td><td>-</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Written Exam</td><td>1,8</td><td>Project</td><td>-</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Assessment and Evaluation of Student Performance
Pre-exam Activities
5. Class Attendance:
1. Lecture attendance – 5 points 5%
2. Exercise attendance – 5 points 5%
3. Continuous work / Interactivity – 5 points 5%
6. Seminar Paper:
1. Written part – 15 points 15%
2. Oral presentation – 10 points 10%
7. Midterm Exam (Colloquium):
1. 30 points 30%
Final Exam
4. Written / Oral Exam:
8. 30 points 30%
TOTAL: .....100%</td></tr>
<tr><td>Compulsory Literature (available in the library and through other media)</td><td colspan="2">Title</td><td>Number of Copies in the Library</td><td colspan="2">Availability through Other Media</td><td>Other</td></tr>
<tr><td></td><td colspan="2">Microbiological Examination Methods of Food and Water: A Laboratory Manual, 2nd Edition — Margarete Midori Okazaki, Neusely da Silva, Marta H. Taniwaki, Neliane Silveira & Valéria C. A. Junqueira</td><td>(1)</td><td colspan="2"></td><td>-</td></tr>
<tr><td>Supplementary Literature</td><td colspan="6"></td></tr>
<tr><td>Other (at the proposer’s discretion)</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
</table>

COURSE TITLE	**TOXICOLOGY**		
LEVEL OF STUDY	Undergraduate		
Course Code	**3.1.7.Z001**	**Year of Study**	**III**
Course Instructor(s)	**doc.dr.sc. Emilija Hrapović**	**Credit Value (ECTS)**	**6**
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to the basic concepts and definitions of toxicology, pathways of poison absorption, their effects, and legal regulations in this field.		
Prerequisites and Entry Competencies	No Prerequisites		
Expected Learning Outcomes at the Course (10 outcomes)	• Demonstrate knowledge and understanding of the basic concepts in toxicology • Identify types and classifications of poisons • Understand poison labeling systems • Recognize types of poisoning and establish poisoning diagnoses • Provide first aid for poisoning by various types of toxic agents • Implement protection measures against different types of poisoning • Understand the toxicokinetics of various poisons • Understand the toxicodynamics of different poisons • Apply legal regulations in the field of toxicology • Search literature, relevant international databases, and other information sources in toxicology		
Course Content Detailed According to Teaching Hours	• Definition of the subject, classification of poisons, toxicity, reliability, toxicological risks – 3 hours • Acute and chronic poisoning, dose-response relationship, diagnosis of poisoning – 4 hours Therapy of poisoning: nonspecific and specific therapy, symptomatic therapy – 3 hours • Mechanism of action of poisons and transport in the body – 2 hours Toxicokinetics: routes of entry, absorption, transport and distribution of poisons, biotransformation, elimination; toxicodynamics, receptors, and nonspecific effects – 5 hours • Poisoning with heavy metals: lead, mercury, arsenic, cadmium, iron – 2 hours • Poisoning with mycotoxins: aflatoxin, ochratoxin, zearalenone, fumonisins, trichothecenes, deoxynivalenol, patulin – 2 hours • Poisoning with insecticides, herbicides, fungicides – 2 hours • Poisoning with air pollutants: carbon monoxide, sulfur dioxide, hydrocarbons, aldehydes, nitrogen dioxide – 2 hours • Poisoning with organophosphorus compounds and nicotine – 1 hour Poisoning with plant toxins – 1 hour • Poisoning with hydrocyanic acid and cyanides, acids, and bases – 1 hour		

	Iatrogenic poisoning (salicylates, barbiturates, morphine, depressants, methanol, ethanol) – 1 hour • Toxic effects of botulinum toxin, bacterial toxins, and fungi – 1 hour					
Types of Instruction	In class Online		Konsultacije			
Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	0,9	**Research**	-	**Experimenal Work**	-
	Practical Work	-	**Report**	-	**Consultations**	-
	Essay	-	**Seminar Paper**	1,5	**Other (Specify)**	-
	Midterm Exam	1,8	**Oral Exam**	-	**Other (Specify)**	-
	Written Exam	1,8	**Project**	-	**Other (Specify)**	-
Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points ..... 30% TOTAL: 100%					

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	A Textbook of Modern Toxicology, 4th Edition — Ernest Hodgson		https://dl.icdst.org/pdfs/files3/b6c63244540e2a42fd2825fd5c8ea724.pdf	
Supplementary Literature	UISBAX Materials			

Other (at the proposer's discretion)						

COURSE TITLE	**PHYSICO-CHEMICAL ANALYSIS OF FOOD AND WATER**					
LEVEL OF STUDY	**Undergraduate**					
Course Code	**3.3.5.Z004**	**Year of Study**			**III**	
Course Instructor(s)	prof.dr.sc. Adna Mesihović	**Credit Value (ECTS)**			5	
Teaching Assistants						
COURSE DESCRIPTION						
COURSE OBJECTIVES	Introducing students to the parameters of physico-chemical analyses, contaminants in food and water, laboratory work and good laboratory practice, methods of analysis, and interpretation of results.					
Prerequisites and Entry Competencies	Prerequisite: Instrumental Methods					
Expected Learning Outcomes at the Course (10 outcomes)	• Demonstrate knowledge of the importance of food for human health • Understand the principles of food safety • Apply classical chemical methods for food analysis • Apply instrumental methods of food analysis and appropriate sampling methodologies • Determine the nutritional value of food products • Perform water sampling procedures and conduct field analyses • Understand water quality parameters and the requirements for safe drinking water • Conduct bacteriological, virological, and biological analyses of water • Conduct physical, chemical, and radiological analyses of water • Demonstrate knowledge of laboratory accreditation and good laboratory practice					
Course Content Detailed According to Teaching Hours	• Importance of food for humans – food and health – 3 hours • Food safety – 3 hours • Classical chemical methods of food analysis – 3 hours • Instrumental methods of food analysis and sampling methodology – 3 hours • Methods for determining the nutritional value of food – 3 hours • Water sampling and field analyses – 3 hours • Water quality parameters and drinking water safety – 3 hours • Bacteriological, virological, and biological analysis of water – 3 hours • Physical, chemical, and radiological analysis of water – 3 hours • Laboratory accreditation and good laboratory practice – 3 hours					
Types of Instructio n	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring	**Class Attendanc**	**0,75**	**Researc h**	-	**Experimenal Work**	-

(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)	**e**					
	Practical Work	-	**Report**	-	**Consultations**	-
	Essay	-	**Seminar Paper**	**1,25**	**Other (Specify)**	-
	Midterm Exam	**1,5**	**Oral Exam**	-	**Other (Specify)**	-
	Written Exam	**1,5**	**Project**	-	**Other (Specify)**	-

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities 9. Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% 10. Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% 11. Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: 12. 30 points ..... 30% TOTAL: 100%

	Title	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
Compulsory Literature (available in the library and through other media)	*Water Analysis: A Practical Guide to Physico-Chemical, Chemical and Microbiological Water Examination and Quality Assurance* — Wilhelm Fresenius, Karl E. Quentin, Wilhelm Schneider	(1)	https://archive.org/details/wateranalysispra0000unse?utm	-
Supplementary Literature	• Manual of Methods of Analysis of Food Safety and Standards/Water, Authority of India, Ministry of Health and Family Welfare, Government of India, 2015			
Other (at the proposer's discretion)	-	-	-	-

COURSE TITLE	WASTE MANAGEMENT		
LEVEL OF STUDY	**Undergraduate**		
Course Code	3.3.5.Z005	**Year of Study**	III
Course Instructor(s)	doc.dr.sc. Emilija Hrapović	**Credit Value (ECTS)**	6
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to the types of waste, associated health risks, and methods of waste disposal.		
Prerequisites and Entry Competencies	Prerequisite: Hygiene and Health Ecology		
Expected Learning Outcomes at the Course (10 outcomes)	• Acquire basic knowledge of waste, including definitions, types, categories, and classification of waste • Demonstrate knowledge of international strategies and conventions in the field of waste management • Understand EU and BiH legislation related to waste management • Interpret statistical indicators and principles of waste management • Acquire knowledge of medical waste and medical waste management plans • Demonstrate knowledge of hazardous waste management • Understand methods of final disposal of solid waste • Acquire knowledge of sanitary landfills • Understand liquid waste and methods of its disposal • Recognize the epidemiological significance of inadequate waste disposal		
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics) • Definition, types, and categories of waste; waste classification • International strategies and conventions in waste management • EU and BiH legislation in waste management • Statistical indicators in waste management; principles of waste management • Medical waste and medical waste management plans • Hazardous waste • Methods of final disposal of solid waste • Sanitary landfills • Liquid waste and its disposal • Epidemiological significance of inadequate waste disposal		
Types of Instruction	In class Online	Consultations	

<table>
<tr><td>Student Obligations</td><td colspan="6"></td></tr>
<tr><td rowspan="5">Student Workload Monitoring
(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Class Attendance</td><td>0,9</td><td>Research</td><td>-</td><td>Experimenal Work</td><td>-</td></tr>
<tr><td>Practical Work</td><td>-</td><td>Report</td><td>-</td><td>Consultations</td><td>-</td></tr>
<tr><td>Essay</td><td>-</td><td>Seminar Paper</td><td>1,5</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Midterm Exam</td><td>1,8</td><td>Oral Exam</td><td>-</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Written Exam</td><td>1,8</td><td>Project</td><td>-</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Assessment and Evaluation of Student Performance
Pre-exam Activities
• Class Attendance:
1. Lecture attendance – 5 points 5%
2. Exercise attendance – 5 points 5%
3. Continuous work / Interactivity – 5 points 5%
• Seminar Paper:
1. Written part – 15 points 15%
2. Oral presentation – 10 points 10%
• Midterm Exam (Colloquium):
1. 30 points 30%
Final Exam
4. Written / Oral Exam:
• 30 points ……..... 30%
TOTAL: ……100%</td></tr>
<tr><td>Compulsory Literature (available in the library and through other media)</td><td colspan="2">Title</td><td>Number of Copies in the Library</td><td colspan="2">Availability through Other Media</td><td>Other</td></tr>
<tr><td></td><td colspan="2">An Introduction to Waste Management and Circular Economy — Stijn van Ewijk & Julia Stegemann</td><td>-</td><td colspan="2">https://library.oapen.org/bitstream/20.500.12657/86407/1/9781800084650.pdf</td><td>-</td></tr>
<tr><td>Supplementary Literature</td><td colspan="6">Briški F., (2016), Zaštita okoliša, Zagreb.-</td></tr>
<tr><td>Other (at the proposer’s discretion)</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td><td></td></tr>
</table>

COURSE TITLE	**METHODOLOGY OF SAMPLING IN SANITARY AND HYGIENE SUPERVISION**		
LEVEL OF STUDY	**Undergraduate**		
Course Code	**3.3.5.Z007**	**Year of Study**	**IV**
Course Instructor(s)	**prof.dr.sc. Adna Mesihović**	**Credit Value (ECTS)**	**8**
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to the methodology of sampling in environmental sanitary and hygiene supervision, the recommended equipment, as well as the procedures for transporting and preparing samples for specific analyses.		
Prerequisites and Entry Competencies	Prerequisite: Instrumental Methods		
Expected Learning Outcomes at the Course (10 outcomes)	1. Apply methods of sampling physical, chemical, and biological environmental factors 2. Understand principles of sample collection and sampling methodology 3. Perform sampling techniques, transportation, reception of samples, and maintain proper records and documentation 4. Apply rules and principles for sampling solid, liquid, and gaseous materials 5. Operate equipment and apply techniques for sampling drinking water 6. Operate equipment and apply techniques for sampling food 7. Operate equipment and apply techniques for sampling air 8. Operate equipment and apply techniques for sampling soil 9. Operate equipment and apply techniques for sampling industrial wastewater 10. Apply methods of sample preparation for laboratory analysis		
Sadržaj predmeta detaljno razrađen prema satnici nastave:	1. Introduction to methods of sampling physical, chemical, and biological environmental factors – 3 hours 2. Principles of sample collection – Sampling methodology – 3 hours 3. Techniques of sampling, transportation, reception of samples, and record keeping – 3 hours 4. Rules and principles for sampling solid, liquid, and gaseous materials – 3 hours 5. Techniques, equipment, and methods for sampling drinking water – 3 hours 6. Techniques, equipment, and methods for sampling food – 3 hours 7. Techniques, equipment, and methods for sampling air – 3 hours 8. Techniques, equipment, and methods for sampling soil – 3 hours 9. Techniques, equipment, and methods for sampling industrial wastewater – 4 hours 10. Preparation of samples for laboratory analysis – 2 hours		
Types of Instruction	In class Online	Consultations	
Student Obligations			

<table>
<tr><td rowspan="5">Student Workload Monitoring
(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Class Attendance</td><td>1,2</td><td>Research</td><td>-</td><td>Experimental Work</td><td>-</td></tr>
<tr><td>Practical Work</td><td>-</td><td>Report</td><td>-</td><td>Consultations</td><td>-</td></tr>
<tr><td>Essay</td><td>-</td><td>Seminar Paper</td><td>2</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Midterm Exam</td><td>2,4</td><td>Oral Exam</td><td>-</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Written Exam</td><td>2,4</td><td>Project</td><td>-</td><td>Other (Specify)</td><td>-</td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Assessment and Evaluation of Student Performance
Pre-exam Activities
1. Class Attendance:
○ Lecture attendance – 5 points 5%
○ Exercise attendance – 5 points 5%
○ Continuous work / Interactivity – 5 points 5%
2. Seminar Paper:
○ Written part – 15 points 15%
○ Oral presentation – 10 points 10%
3. Midterm Exam (Colloquium):
○ 30 points 30%
Final Exam
4. Written / Oral Exam:
• 30 points ……..... 30%
TOTAL: ……100%</td></tr>
<tr><td>Compulsory Literature (available in the library and through other media)</td><td colspan="2">Title</td><td>Number of Copies in the Library</td><td>Availability through Other Media</td><td>Other</td></tr>
<tr><td></td><td colspan="2"></td><td></td><td></td><td></td></tr>
<tr><td></td><td colspan="2">Eugene R.Kennedy, Thomas J.Fischbasc, Ruigang Song et al: Guidelines for Air Sampling and Analytic Method Development and Evaluation, U.S. Department od health and human services, Public Health Service, CDC and Prevention, National Institute for Occupationa Safety and health, Division of Physical Sciences and Engineering Cincinnati, Ohio 45226, May 1995 (Izd. 95-117 iz DHHS publication
NIOSH technical report)</td><td>(0)</td><td>https://books.google.ba/books?id=lX5fKt2gg_UC&dq=guidelines+for+air+sampling+and+analytical+method+development+and+evaluation&lr=&hl=hr&source=gbs_navlinks_s</td><td>-</td></tr>
</table>

Supplementary Literature	1. UISBAX Materials					
Other (at the proposer's discretion)	-	-	-	-	-	-

COURSE TITLE	BASIC PRINCIPLES OF DERMATOLOGY OF THE SKIN AND SKIN ADNEXA: PREVENTIVE AND THERAPEUTIC		
LEVEL OF STUDY	**Undergraduate**		
Course Code	3.2.15.Z001	**Year of Study**	I
Course Instructor(s)	Prof.dr.sc. Irdina Drljević	**Credit Value (ECTS)**	7
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	Introducing students to the medical aspects of correcting skin and skin adnexa disorders, as well as the prevention and treatment of adnexal skin diseases.		
Prerequisites and Entry Competencies	Prerequisite: Functional Anatomy and Physiology of Skin Adnexa		
Expected Learning Outcomes at the Course	Expected Learning Outcomes Upon completion of the course, the student will be able to: • Demonstrate knowledge of the general principles of dermatology of the skin and skin adnexa • Apply knowledge in correcting disorders of the skin and skin adnexa • Understand and implement prevention and treatment strategies for diseases of skin adnexa • Acquire foundational knowledge of dermatology of the nail, body hair, and glands • Successfully manage conditions related to skin adnexa		
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics) • Introduction • Basic characteristics of nail dermatology • Dermatology of body hair • Basic characteristics of dermatology of hair in specific regions: scalp, face/eyebrows, mustache and beard, axilla, genital region • Dermatology of skin glands • Prevention and treatment of nail diseases • Prevention and treatment of hair diseases • Prevention and treatment of skin gland diseases • Correction of skin adnexa • Diseases of the skin and skin adnexa		
Types of Instruction	In class On line	Consultations	

<table>
<tr><td>Student Obligations</td><td colspan="6"></td></tr>
<tr><td rowspan="5">Student Workload Monitoring
(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Class Attendance</td><td>1,4</td><td>Research</td><td></td><td>Experimental Work</td><td>1,05</td></tr>
<tr><td>Practical Work</td><td></td><td>Report</td><td></td><td>Consultations</td><td>0,7</td></tr>
<tr><td>Essay</td><td></td><td>Seminar Paper</td><td>1,75</td><td>Other (Specify)</td><td></td></tr>
<tr><td>Midterm Exam</td><td></td><td>Oral Exam</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Written Exam</td><td>2,1</td><td>Project</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Assessment and Evaluation of Student Performance
Pre-exam Activities
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1. Lecture attendance – 5 points 5%
2. Exercise attendance – 5 points 5%
3. Continuous work / Interactivity – 5 points 5%
• Seminar Paper:
1. Written part – 15 points 15%
2. Oral presentation – 10 points 10%
• Midterm Exam (Colloquium):
1. 30 points 30%
Final Exam
4. Written / Oral Exam:
• 30 points ……..... 30%
TOTAL: ……100%</td></tr>
<tr><td rowspan="2">Supplementary Literature
Supplementary Literature</td><td colspan="2">Title</td><td colspan="2">Number of Copies in the Library</td><td>Availability through Other Media</td><td>Other</td></tr>
<tr><td colspan="2">Basic Principles of Dermatology of the Skin and Skin Adnexa — Preventive and Therapeutic:</td><td colspan="2">(1)</td><td></td><td></td></tr>
<tr><td>Supplementary Literature</td><td colspan="6"></td></tr>
<tr><td>Other (at the proposer’s discretion)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

COURSE TITLE	**EMERGENCY CONDITIONS IN COSMETOLOGY**					
LEVEL OF STUDY	**Undergraduate**					
Course Code	3.2.15.Z003		**Year of Study**		II	
Course Instructor(s)	Prof.dr.sc. Milica Rajović		**Credit Value (ECTS)**		7	
Teaching Assistants						
COURSE DESCRIPTION						
COURSE OBJECTIVES	The aim of the course is to introduce students to emergency conditions in cosmetology and dermatology.					
Prerequisites and Entry Competencies	Prerequisite: Functional Anatomy and Physiology of the Skin					
Expected Learning Outcomes at the Course (10 outcomes)	Upon completion of the course, students will be able to: • Timely recognize emergency conditions in cosmetology and respond promptly • Identify early symptoms and signs of emergency conditions in cosmetology and provide first aid • Recognize complications that may arise during cosmetology procedures • Identify and respond to allergic reactions					
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics and Hours) • Introduction – 3 hours • Development of complications in cosmetology – 3 hours • Basic characteristics of emergency conditions in cosmetology – 3 hours • Systemic manifestations of allergic reactions – 3 hours • Local manifestations of allergic reactions – 3 hours • Emergency procedures for urgent conditions in cosmetology – 3 hours • Emergency procedures for urgent conditions in dermatology – 3 hours • Emergency procedures for injuries of the skin and skin adnexa – 3 hours • Other emergency procedures in cosmetology of different etiologies – 3 hours • First aid in cosmetology – 3 hours					
Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring ***(enter the share in***	**Class Attendance**	1,4	**Research**		**Experimenal Work**	1,05

ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)	**Practical Work**		**Report**		**Consultations**	0,7
	Essay		**Seminar Paper**	1,75	**Other (Specify)**	
	Midterm Exam		**Oral Exam**	2,1	**Other (Specify)**	
	Written Exam		**Project**		**Other (Specify)**	

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points …….. 30% TOTAL: ……100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Silvis M, ONeill R, Olympia R. Urgent care medicine secrets, Medicine and Healt, 2017.		(+)	

Supplementary Literature						
Other (at the proposer's discretion)						

COURSE TITLE	**MONITORING AND CORRECTION OF SKIN AGING PARAMETERS**					
LEVEL OF STUDY	**Undergraduate**					
Course Code	3.6.1.Z012		**Year of Study**		III	
Course Instructor(s)	Prof.dr.sc. Milica Rajović		**Credit Value (ECTS)**		7	
Teaching Assistants						
COURSE DESCRIPTION						
COURSE OBJECTIVES	The aim of the course is to introduce students to the fundamental parameters of aging and to the recognition of early signs of skin aging.					
Prerequisites and Entry Competencies	Prerequisite: Functional Anatomy and Physiology of the Skin					
Expected Learning Outcomes at the Course (10 outcomes)	Expected Learning Outcomes Upon completion of the course, students will be able to: • Apply professional knowledge and skills in counseling and performing diagnostics of the basic parameters of skin aging • Develop individualized therapy plans for skin aging correction and care • Demonstrate knowledge of the fundamental parameters of aging • Recognize early signs of skin aging					
Sadržaj predmeta detaljno razrađen prema satnici nastave:	Detailed Course Content (by Topics and Hours) • Basic methods for diagnosing skin aging parameters – 3 hours • Processes leading to skin aging – 3 hours • Procedures for preventing skin aging – 3 hours • Application of new technologies in the prevention and correction of aging parameters – 3 hours • Effects and proper use of cosmetic products in the aging process – 3 hours • Importance of cosmetic care in preventing skin aging – 3 hours • Treatment of visible signs of aging – 3 hours • Body spots: hypo- and hyperpigmentation and their treatment – 3 hours • Rejuvenation – 3 hours • Cosmetic treatments for wrinkles of the face, neck, and body – 3 hours					
Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring	**Class Attendance**	2,1	**Research**		**Experimental Work**	

(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)	**Practical Work**		**Report**		**Consultations**	
	Essay		**Seminar Paper**	1,75	**Other (Specify)**	
	Midterm Exam		**Oral Exam**	1,05	**Other (Specify)**	
	Written Exam	2,1	**Project**		**Other (Specify)**	

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points ……..... 30% TOTAL: ……100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Textbook of Aging Skin — Miranda A. Farage, Kenneth W. Miller, Howard I. Maibach		https://www.researchgate.net/publication/239619909_Textbook_of_Aging_Skin	
Supplementary Literature	UISBAX MATERIALS			
Other (at the proposer's discretion)				

COURSE TITLE	**BASIC COSMETIC TREATMENTS OF SKIN ADNEXA**		
LEVEL OF STUDY	**Undergraduate**		
Course Code	3.6.1.Z014	**Year of Study**	III
Course Instructor(s)	Prof.dr.sc. Irdina Drljević	**Credit Value (ECTS)**	5
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	The aim of the course is to introduce students to the basic cosmetic treatments of the skin.		
Prerequisites and Entry Competencies	Prerequisite: Functional Anatomy and Physiology of Skin Adnexa		
Expected Learning Outcomes at the Course (10 outcomes)	Upon completion of the course, students will be able to: • Critically evaluate and apply scientific knowledge to determine the optimal cosmetic treatment of healthy skin tailored to the individual • Demonstrate knowledge of basic cosmetic treatments for healthy skin adnexa • Understand the importance of identifying the appropriate basic cosmetic treatment for skin adnexa • Apply fundamental methods in basic cosmetic treatment of skin adnexa • Use essential preparations in basic cosmetic treatment • Demonstrate knowledge of basic cosmetic treatments for dry skin • Demonstrate knowledge of basic cosmetic treatments for oily skin • Demonstrate knowledge of basic cosmetic treatments for combination skin adnexa		
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics and Hours) • Introduction – 3 hours • Basic cosmetic treatments of skin adnexa according to types – 3 hours • Importance of determining the basic cosmetic treatment of skin adnexa – 3 hours • Basic methods in cosmetic treatment of skin adnexa – 3 hours • Basic preparations in cosmetic treatment of skin adnexa – 3 hours • The meaning of well-groomed skin adnexa – 3 hours • Basic cosmetic treatment of dry skin adnexa – 3 hours • Basic cosmetic treatment of oily skin adnexa – 3 hours • Basic cosmetic treatment of combination skin adnexa – 3 hours • Individual adaptation of cosmetic treatments – 3 hours		
Types of Instruction	In class Online	Consultations	
Student Obligations			

<table>
<tr><td rowspan="5">Student Workload Monitoring
(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Class Attendance</td><td>1</td><td>Research</td><td></td><td>Experimental Work</td><td></td></tr>
<tr><td>Practical Work</td><td></td><td>Report</td><td></td><td>Consultations</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Seminar Paper</td><td>1</td><td>Other (Specify)</td><td></td></tr>
<tr><td>Midterm Exam</td><td>1,5</td><td>Oral Exam</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Written Exam</td><td>1,5</td><td>Project</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Assessment and Evaluation of Student Performance
Pre-exam Activities
• Class Attendance:
1. Lecture attendance – 5 points 5%
2. Exercise attendance – 5 points 5%
3. Continuous work / Interactivity – 5 points 5%
• Seminar Paper:
1. Written part – 15 points 15%
2. Oral presentation – 10 points 10%
• Midterm Exam (Colloquium):
1. 30 points 30%
Final Exam
4. Written / Oral Exam:
• 30 points ……..... 30%
TOTAL: ……100%</td></tr>
<tr><td>Compulsory Literature (available in the library and through other media)</td><td colspan="2">Title</td><td colspan="2">Number of Copies in the Library</td><td>Availability through Other Media</td><td>Other</td></tr>
<tr><td></td><td colspan="2">Cosmetic Dermatology: Products and Procedures, 3rd Edition — Zoe Diana Draelos</td><td colspan="2">(1)</td><td></td><td></td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td></tr>
<tr><td>Supplementary Literature</td><td colspan="6">• UISBAX MATERIALS</td></tr>
<tr><td>Other (at the proposer’s discretion)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

COURSE TITLE	**SPECIAL COSMETIC TREATMENTS OF SKIN ADNEXA**					
LEVEL OF STUDY	**Undergraduate**					
Course Code	3.6.1.Z015		**Year of Study**		III	
Course Instructor(s)	Prof.dr.sc. Irdina Drljević		**Credit Value (ECTS)**		6	
Teaching Assistants						
COURSE DESCRIPTION						
COURSE OBJECTIVES	The aim of the course is to familiarize students with special cosmetic treatments of skin adnexa.					
Prerequisites and Entry Competencies	Prerequisite: Functional Cosmetology					
Expected Learning Outcomes at the Course (10 outcomes)	Upon completion of the course, students will be able to: • Understand the importance of identifying appropriate special cosmetic treatments • Critically evaluate and apply scientific knowledge to determine special cosmetic treatments of healthy skin tailored to the individual • Demonstrate knowledge of special cosmetic treatments for healthy skin • Recognize indications for dermabrasion • Demonstrate knowledge of basic preparations used in cosmetic treatments • Apply fundamental methods in facial and body skin treatments • Understand dermabrasion techniques and their effects on skin changes					
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics and Hours) • Introduction – 3 hours • Special cosmetic treatments of the skin according to skin type – 3 hours • Importance of determining special and specific cosmetic treatments – 3 hours • Basic methods in special cosmetic treatment of the skin and body – 3 hours • Basic preparations in special cosmetic treatment of the skin and body – 3 hours • Dermabrasion: methods and effects – 3 hours • Indications for dermabrasion – 3 hours • Special cosmetic treatment of dry skin of the face and body – 3 hours • Special cosmetic treatment of oily skin of the face and body – 3 hours • Special cosmetic treatment of combination skin of the face and body – 3 hours					
Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload	**Class**	1,2	**Research**		**Experimental**	

<table>
<tr><td rowspan="5">Monitoring
(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)</td><td>Attendance</td><td></td><td></td><td></td><td>Work</td><td></td></tr>
<tr><td>Practical Work</td><td></td><td>Report</td><td></td><td>Consultations</td><td></td></tr>
<tr><td>Essay</td><td></td><td>Seminar Paper</td><td>1,2</td><td>Other (Specify)</td><td></td></tr>
<tr><td>Midterm Exam</td><td>1,8</td><td>Oral Exam</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Written Exam</td><td>1,8</td><td>Project</td><td></td><td>Other (Specify)</td><td></td></tr>
<tr><td>Assessment and Evaluation of Student Performance During Classes and the Final Exam</td><td colspan="6">Assessment and Evaluation of Student Performance
Pre-exam Activities
• Class Attendance:
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2. Exercise attendance – 5 points 5%
3. Continuous work / Interactivity – 5 points 5%
• Seminar Paper:
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2. Oral presentation – 10 points 10%
• Midterm Exam (Colloquium):
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Final Exam
4. Written / Oral Exam:
• 30 points 30%
TOTAL: .....100%</td></tr>
<tr><td>Compulsory Literature (available in the library and through other media)</td><td colspan="2">Title</td><td>Number of Copies in the Library</td><td>Availability through Other Media</td><td colspan="2">Other</td></tr>
<tr><td></td><td colspan="2">Cosmetic Dermatology: Products and Procedures, 3rd Edition — Zoe Diana Draelos</td><td></td><td>ONLINE</td><td colspan="2"></td></tr>
<tr><td></td><td colspan="2"></td><td></td><td></td><td colspan="2"></td></tr>
<tr><td></td><td colspan="2"></td><td></td><td></td><td colspan="2"></td></tr>
<tr><td>Supplementary Literature</td><td colspan="6"></td></tr>
<tr><td>Other (at the proposer’s discretion)</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

COURSE TITLE	**APPLICATION OF INSTRUMENTAL (APPARATUS-BASED) COSMETICS ON SKIN ADNEXA**		
LEVEL OF STUDY	**Undergraduate**		
Course Code	3.6.1.Z016	**Year of Study**	III
Course Instructor(s)	Prof.dr.sc. Milica Rajović	**Credit Value (ECTS)**	7
Teaching Assistants			
COURSE DESCRIPTION			
COURSE OBJECTIVES	The aim of the course is to introduce students to the principles of applying apparatus-based cosmetics on the skin.		
Prerequisites and Entry Competencies	Prerequisite: Functional Anatomy and Physiology of Skin Adnexa		
Expected Learning Outcomes at the Course (10 outcomes)	Upon completion of the course, students will be able to: • Apply professional knowledge and skills in counseling and performing apparatus-based cosmetic treatments on the skin • Demonstrate knowledge of the general principles of proper application of apparatus-based cosmetics on the skin • Critically evaluate and apply scientific knowledge to identify the optimal apparatus-based treatment tailored to the individual • Critically evaluate and apply scientific knowledge regarding the use of devices in skin treatments • Provide guidance and counseling on the effects and proper application of lasers, and monitor the course and outcomes of therapy • Present the main indications for apparatus-based improvement of skin circulation		
Course Content Detailed According to Teaching Hours	Detailed Course Content (by Topics and Hours) • Introduction – 3 hours • Critical evaluation and application of scientific knowledge to determine the optimal apparatus-based skin treatment tailored to the individual – 3 hours • Critical evaluation and application of scientific knowledge for the use of devices in skin treatments – 3 hours • Counseling on the effects and proper use of lasers, monitoring the course and outcomes of therapy – 3 hours • Advantages and side effects of removing vascular changes with lasers – 3 hours • Bioptron – polarized light in cosmetology – 3 hours • Mechanical and thermal effects of ultrasound in cosmetology – 3 hours • General principles of ultrasound application in dermatology – 3 hours • Presentation of main indications for apparatus-based improvement of skin circulation – 3 hours • Principles of apparatus-based toning of skin connective tissue – 3 hours		
Types of Instruction	In class Online	Consultations	

Student Obligations						
Student Workload Monitoring ***(enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)***	**Class Attendance**	1,4	**Research**		**Experimental Work**	
	Practical Work		**Report**		**Consultations**	
	Essay		**Seminar Paper**	1,4	**Other (Specify)**	
	Midterm Exam	2,1	**Oral Exam**		**Other (Specify)**	
	Written Exam	2,1	**Project**		**Other (Specify)**	

Assessment and Evaluation of Student Performance During Classes and the Final Exam

Assessment and Evaluation of Student Performance
Pre-exam Activities

- Class Attendance:
  1. Lecture attendance – 5 points 5%
  2. Exercise attendance – 5 points 5%
  3. Continuous work / Interactivity – 5 points 5%
- Seminar Paper:
  1. Written part – 15 points 15%
  2. Oral presentation – 10 points 10%
- Midterm Exam (Colloquium):
  1. 30 points 30%

Final Exam
4. Written / Oral Exam:

- 30 points ……..... 30%

TOTAL: ……100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Cosmetic Applications of Laser and Light-Based Systems (Procedures in Cosmetic Dermatology) — urednik: John Marshall, Ron Shelton		https://www.amazon.com/-/he/Cosmetics-Applications-Light-Based-Personal-Technology/dp/0815515723	
Supplementary Literature	UISBAX MATERIALS			

Other (at the proposer's discretion)						

COURSE TITLE	BODY AESTHETICS PARAMETERS					
LEVEL OF STUDY	Dodiplomski					
Course Code	3.6.1.Z017		**Year of Study**		III	
Course Instructor(s)	Prof.dr.sc. Milica Rajović		**Credit Value (ECTS)**		7	
Teaching Assistants						
COURSE DESCRIPTION						
COURSE OBJECTIVES	The aim of the course is to introduce students to the basic parameters of aging, the recognition of early signs of skin aging, and the implementation of body aesthetics parameter analysis.					
Prerequisites and Entry Competencies	Prerequisite: Functional Anatomy and Physiology of the Skin					
Expected Learning Outcomes at the Course (10 outcomes)	Upon completion of the course, students will be able to: • Apply professional knowledge and skills in counseling and performing diagnostics of the basic parameters of aging • Develop individualized therapy plans for the correction and care of aging skin • Demonstrate knowledge of the fundamental parameters of aging • Recognize early signs of skin aging • Apply professional knowledge and skills in counseling and performing analysis of body aesthetics parameters					
Course Content Detailed According to Teaching Hours	1. Osnovne metode dijagnostike parametara starenja,3h 2. Procesima koji dovode do procesa starenja kože,3h 3. Postupcima preveniranja starenja kože,3h 4. Primjene novih tehnologija u prevenciji i otklanjanju parametara starenja,3h 5. Djelovanje i ispravna primjena kozmetičkih preparata u procesu starenja,3h 6. Značaj kozmetičke njege u prevenciji starenja kože,3h 7. Tretman sigurnih znakova starenja,3h 8. Mrlje po tijelu: hipo i hiperpigmentacije i njihov tretman,3h 9. Rejuvenatio,3h 10. Kozmetički tretmani nabora kože lica, vrata i tijela,3h					
Types of Instruction	In class Online		Consultations			
Student Obligations						
Student Workload Monitoring ***(enter the share in***	**Class Attendance**	2,1	**Research**		**Experimental Work**	

ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course)	**Practical Work**		**Report**		**Consultations**	
	Essay		**Seminar Paper**	1,75	**Other (Specify)**	
	Midterm Exam		**Oral Exam**	1,05	**Other (Specify)**	
	Written Exam	2,1	**Project**		**Other (Specify)**	

Assessment and Evaluation of Student Performance During Classes and the Final Exam	Assessment and Evaluation of Student Performance Pre-exam Activities • Class Attendance: 1. Lecture attendance – 5 points ..... 5% 2. Exercise attendance – 5 points ..... 5% 3. Continuous work / Interactivity – 5 points ..... 5% • Seminar Paper: 1. Written part – 15 points ..... 15% 2. Oral presentation – 10 points ..... 10% • Midterm Exam (Colloquium): 1. 30 points ..... 30% Final Exam 4. Written / Oral Exam: • 30 points ..... 30% TOTAL: 100%

Compulsory Literature (available in the library and through other media)	**Title**	**Number of Copies in the Library**	**Availability through Other Media**	**Other**
	Textbook of Cosmetic Dermatology (6th Edition) Robert Baran & Howard I. Maibach		https://www.routledge.com/Textbook-of-Cosmetic-Dermatology/Baran-Maibach/p/book/9781032270678	
Supplementary Literature				
Other (at the proposer's discretion)				