

<b>Name of the course</b>	<b>Health Ecology and Occupational Medicine</b>			<b>Code</b>	MSE514
<b>Type of study program:</b>	Integrated university study program, Medicine			<b>Year of study:</b>	5
<b>Credits (ECTS):</b>	3.0	<b>Semester:</b>	X	<b>Number of hours per semester (l+s+e)</b>	60 (20+20+20)
<b>Status of the course:</b>	obligatory	<b>Preconditions:</b>	Passed all exams of the 4th year	<b>Comparative conditions:</b>	/
<b>Access to course:</b>	Fifth year students			<b>Hours of instructions:</b>	According to schedule
<b>Course teacher:</b>	Assoc. Prof. Krunoslav Capak, MD, PhD				
<b>Consultations:</b>	As agreed with students				
<b>E-mail address and phone number:</b>	kcapak@hzjz.hr				
<b>Associate teachers:</b>	Prof. Ivan Vasilj MD, PhD Asst. Prof. Marija Bubaš, MD, PhD Senior assistant Pavle Jeličić, MD, PhD Senior assistant Boženka Galić Tirić, MD				
<b>Consultations:</b>	As agreed with students				
<b>E-mail address and phone number:</b>	<a href="mailto:bubas.hzjz@gmail.com">bubas.hzjz@gmail.com</a> <a href="mailto:pavle.jelicic@hzjz.hr">pavle.jelicic@hzjz.hr</a> <a href="mailto:galic.bozenka@gmail.com">galic.bozenka@gmail.com</a>				
<b>The aims of the course:</b>	<p>The aims of the course are:</p> <ul style="list-style-type: none"> <li>To familiarize students with chemical, biological and physical factors of the immediate living and working environment, methods of monitoring and risk assessment, health effects and temporary or permanent consequences of exposure, including emergency situations that can negatively affect human health.</li> <li>To acquaint students with global health and environmental problems, the basics of health aspects of urbanization and housing, the public health significance of nutrition, nutritional supplements, laboratory testing and monitoring, methods of monitoring exposure to harmful environmental factors and assessment of health effects.</li> </ul> <p>Through the basics of work physiology and psychology, students will expand their knowledge in these areas and acquire basic skills in occupational health and occupational health protection. Knowledge of the field of occupational health also includes a part of clinical medicine, and students will be trained to apply the acquired clinical knowledge in the assessment of work ability, and will expand their knowledge in the differential diagnosis of health disorders and determining the etiology of the clinical presentation of the disease, as well as to recognize, detect early, and prevent diseases caused or aggravated by work and exposure to harmful environmental factors.</p>				
<b>Learning outcomes (general and specific competences):</b>	<ul style="list-style-type: none"> <li>Assess the adverse health effects of environmental factors, conditions and work methods;</li> <li>Explain the causes and prevention of injuries at work, occupational diseases, work-related diseases, and other acute or chronic diseases and conditions important for the morbidity of workers that cause temporary or permanent incapacity for work;</li> <li>Participate in the work of multidisciplinary professional teams, by applying acquired knowledge and skills;</li> <li>Assess the urgency and need to act in accordance with standard procedures in case of poisoning and accidents at work, if the conditions allow it;</li> <li>Clarify the dependence of health and disease on chemical, biological and physical factors related to the immediate living and working environment, including emergency situations;</li> <li>Take occupational anamnesis;</li> <li>Propose measures to prevent and mitigate environmental disasters;</li> <li>Argue positions on the benefits of a multidisciplinary approach in solving the complex relationship between living and working conditions.</li> </ul>				
<b>Course content (Syllabus):</b>	The subject consists of 20 units. Each thematic unit includes: 1-2 hours of lectures, 1-3 hours of seminars, and 1-3 hours of exercises.				

<b>Format of instruction (mark in bold)</b>	<b>Lectures</b>	<b>Exercises</b>	<b>Seminars</b>	Independent assignments
	<b>Consultations</b>	Work with mentor	Field work	Other
<b>Student responsibilities:</b>	<p>Students are expected to fully engage with the educational process through a variety of formats including lectures, exercises, and seminars.</p> <ul style="list-style-type: none"> <li>• Lectures: Students are required to attend lectures regularly, actively listen, take comprehensive notes, and participate in any discussions or question-and-answer sessions.</li> <li>• Exercises: Exercises are practical applications of the theoretical knowledge gained from lectures. Students must complete these tasks diligently, either individually or in groups, depending on the instructions.</li> <li>• Seminars: Participation in seminars is crucial for deepening understanding of the subject matter. Students should prepare by completing any pre-seminar reading or assignments, actively contribute to discussions, and respect diverse viewpoints.</li> </ul> <p>Screening of student work and assessment of understanding will be conducted through various methods:</p> <ul style="list-style-type: none"> <li>• Class Attendance and participations: Regular attendance in all scheduled classes (lectures, exercises, seminars) is mandatory.</li> <li>• Seminar essay: Students will be required to write an essay based on seminar topics. This essay should reflect a deep understanding of the subject, critical analysis, and the ability to articulate thoughts clearly and concisely.</li> <li>• Written Exam: A written exam will evaluate the student's grasp of the course content through structured questions or problems. It requires thorough preparation and demonstrates the student's ability to synthesize and apply knowledge effectively.</li> <li>• Oral Exam: An oral exam may be conducted to assess a student's comprehension and verbal articulation of the course material.</li> </ul>			
<b>Screening student work (mark in bold)</b>	<b>Class attendance</b>	<b>Class participations</b>	<b>Seminar essay</b>	Practical training
	<b>Oral exam</b>	<b>Written exam</b>	Continuous assessment	Essay
<b>Detailed evaluation within a European system of points</b>				
<b>STUDENTS RESPONSIBILITIES</b>	<b>HOURS</b>	<b>PROPORTIONS OF ECTS CREDITS</b>	<b>PROPORTIONS OF GRADE</b>	
Class attendance and participation	60	2.0	0 %	
Seminar paper	5	0.2	0 %	
Written exam	10	0.3	50 %	
Oral exam	15	0.5	50 %	
Total	90	3.0	100 %	
<p>Further clarification:  The subject exam is written and oral.  Written test (full written test 50 % of the grade)  All those who regularly attended classes have the right to take the written part. Also, the written exam can be taken by students who have passed the pre-final exams of the teaching units during which they were not in class (20 %). The written exam contains 40 questions. Passing the written exam is a prerequisite for taking the oral exam. The final grade entered in the student grade book (index) is the average grade of the written and oral part of the exam. The final assessment is carried out according to the Regulation of Studies of the University of Mostar and applies to all study groups. According to the Regulations on studying final grade is obtained as follows:  A = 91-100% 5  B = 79 to 90% 4  C = 67 to 78% 3  D = 55 to 66% 2  F = 0 to 54% 1</p>				

<b>Required literature:</b>	Current Diagnosis and Treatment Occupational and Environmental Medicine, 6th Edition. LaDou J, Harrison R. McGraw Hill 2022. Teaching materials and handouts.
<b>Optional literature:</b>	Health Ecology and Occupational Medicine, Capak K. Bubaš M, Medicinski fakultet, Mostar, 2022 - script
<b>Additional information about the course</b>	Method of monitoring teaching quality: <ul style="list-style-type: none"> <li>• Student survey</li> <li>• Analysis of teaching quality by students and teachers</li> <li>• Analysis of exam pass rates</li> <li>• Report of the Office for Teaching Quality</li> <li>• Self-evaluation and external evaluation (visit by quality control teams)</li> </ul>

Annexes: calendar classes

<b>The number of teaching unit</b>	<b>TOPICS AND LITERATURE</b>
<b>I.</b>	Title: Environment, Work, and Health Short description: Definition and task of environmental health; History of environmental health; Environmental factors (chemical, biological, physical, biomechanical, psychological); Principles of health vulnerability assessment; Principles of occupational and environmental medicine; Tasks of occupational medicine, definitions, classification, and mechanism of action of industrial poisons. Literature: required and optional
<b>II.</b>	Title: Global Environmental Health Issues Short description: global warming, ozone layer depletion, light pollution, soil pollution Literature: required and optional
<b>III.</b>	Title: Health Aspects of Housing and Urbanization Short description: Economic development, industry, energy, and transport Literature: required and optional
<b>IV.</b>	Title: Health Effects of Air Pollution Short description: atmospheric pollution, indoor air pollution Literature: required and optional
<b>V.</b>	Title: Biological Environmental Factors Short description: Diseases caused by microorganisms, vector-borne diseases; Methods, means, and techniques of pest control (Disinfection, Disinsection, Deratization); Occupational hazards: biological factors in the workplace; Health risks of selected occupations. Literature: required and optional
<b>VI.</b>	Title: Physical Factors in General and Work Environment Short description: Noise, health effects of exposure to noise, electromagnetic radiation; Exposure to ionizing and non-ionizing radiations; Basics of ecological toxicology; Pathways of entry, toxicity tests, environmental health standards; Occupational hazards: physical factors in the workplace; Health risks of selected occupations. Literature: required and optional
<b>VII.</b>	Title: Chemical Factors in General and Work Environment Short description: Basics of toxicology; Pathways of entry, toxicity tests, environmental health standards; Occupational hazards: chemical factors in the workplace; Health risks of selected occupations. Literature: required and optional
<b>VIII.</b>	Title: Risk Management Short description: Risk assessment in environmental health and occupational medicine; Determining individual and population exposure; Occupational diseases and work-related diseases; Work-related diseases and injuries;

	Workplace and cancer. Literature: required and optional
<b>IX.</b>	Title: Water and Health Short description: Water supply and wastewater disposal, laboratory testing of drinking water healthiness, Field exercises: visit to a water supply facility, visit to a wastewater treatment system Literature: required and optional
<b>X.</b>	Title: Nutrition and Health Short description: Public health significance of nutrition, methods of assessing nutritional status, planned and evaluation of nutrition Literature: required and optional
<b>XI.</b>	Title: Dietary Supplements Short description: Contaminants in food, laboratory testing of food healthiness, monitoring of drinking water Literature: required and optional
<b>XII.</b>	Title: Waste Management Short description: Municipal waste, medical waste. Literature: required and optional
<b>XIII.</b>	Title: Occupational Medicine in Practice Short description: Occupational medicine clinic; Assessment of work capacity and temporary work disability. Literature: required and optional
<b>XIV.</b>	Title: Physiology and Psychology of Work Short description: Physiological aspects of workloads, ergonomic approach to the human-machine-work environment system, fatigue and prevention measures; Reproductive health and workplace- Literature: required and optional
<b>XV.</b>	Title: Occupational Safety Short description: Technical and administrative safety measures, personal protection; Work environment control; Assessment of factors in the workplace, monitoring, risk assessment, and mitigation of exposure to factors in the workplace. Literature: required and optional