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| ***Title of the course:***  **Public Health and Health Protection** | | ***NEPTUN-code:***  RKXKU1ABNF | ***Weekly teaching hours:*** *l+cw+lw*  2+1+0 | ***Credit*:** 4  ***Exam type****:* e |
| ***Course leader:***  Prof. Dr. habil. Hosam Hamuda Bayoumi | | ***Position:***  Private university professor  Associate professor | ***Required preliminary knowledge: -*** | |
| ***Curriculum:*** | | | | |
| The aim of the course is for students to get to know the tasks and methods of public health and environmental health. Topics: Concept of health and illness. The history of public health and its outstanding personalities. The structure and organizational system of Hungarian and international public health. The main tasks and areas of health education. Education for an environmentally and health-conscious lifestyle. Demographic basics, risk assessment and investigation methods, demographic characteristics of the Hungarian and international situation. The impact of globalization on health. Environmental health science: consequences of globalization. Climate change. Epigenetics. Occupational health and health care. General epidemiology of infectious diseases. Epidemiological measures for the benefit of the infectious patient and his environment. National and international epidemiological situation. Levels and arenas of prevention. Epidemiology and prevention of non-communicable diseases. Hospital hygiene, prevention of nosocomial infections. Health protection. Acquisition of health protection and public health knowledge. Health promotion. Nutrition and health science. Characteristics of Hungarian nutrition. Environmental health aspects of nutrition. Alternative forms of nutrition. The structure and functioning of the immune system. Antibodies. Immunity and vaccinations. Transplantation, transfusion. Antibiotics. Allergy, AIDS, autoimmune disease. Air, soil and water hygiene. Mental health. Infection control. Ionizing and non-ionizing radiations. Environmental health problems of the skin organ system, respiratory and movement organ system and metabolic processes. Non-communicable diseases: Epidemiology of cardiovascular and tumour diseases. Mental health care. Old and new addictions. Current duties of mother, child and youth protection. Aging societies and the public health challenges of old age. Health problems caused by waste. Effect of environmental pollution. Presence of environmental pollutants in food. Basic concepts of toxicology. Toxicology of metals, their compounds and pesticides. Toxicological tests and their characteristics, measurement options. Genotoxicology and its expected effects. Adaptation processes of the weather and the organism. Recognizing the connections between the environment and health. Expected health effects of climate change. | | | | |
| **Detailed description of the subject, timetable** | | | | |
| **Weeks** | **Topics of lectures** | | | |
| 1. | **Lecture**: Concept of health and illness. The history of public health and its outstanding personalities. The structure and organizational system of Hungarian and international public health. The main tasks and areas of health education. Education for an environmentally and health-conscious lifestyle.  **Practical**: Activities of healthcare institutions, social and human insurance organizations | | | |
| 2. | **Lecture** Demographic basics, risk assessment and investigation methods, demographic characteristics of the Hungarian and international situation.  **Practical**: | | | |
| 3. | **Lecture** The impact of globalization on health. Environmental health science: consequences of globalization. Climate change. Epigenetics. Occupational health and health care.  **Practical**: High-quality analysis of demographic, mortality and morbidity, as well as other health and social security data initiates the development of the analysis methodology | | | |
| 4. | **Lecture** General epidemiology of infectious diseases. Epidemiological measures for the benefit of the infectious patient and his environment. National and international epidemiological situation. Levels and arenas of prevention. Epidemiology and prevention of non-communicable diseases. Hospital hygiene, prevention of nosocomial infections.  **Practical**: | | | |
| 5. | **Lecture** Health protection. Acquisition of health protection and public health knowledge. Health promotion.  **Practical**: Health promotion methods | | | |
| 6. | **Lecture** Nutrition and health science. Characteristics of Hungarian nutrition. Environmental health aspects of nutrition. Alternative forms of nutrition.  **Practical**: | | | |
| 7. | **Lecture** The structure and functioning of the immune system. Antibodies. Immunity and vaccinations. Transplantation, transfusion. Antibiotics. Allergy, AIDS, autoimmune disease.  **Practical**: Basic principles of healthcare management and conditions for its practical application | | | |
| 8. | **Lecture** Air, soil and water hygiene. Mental health.  Practical: | | | |
| 9. | **Lecture** Infection control. Ionizing and non-ionizing radiations.  **Practical**: Environmental pollutants and health problems | | | |
| 10. | **Lecture** Environmental health problems of the skin organ system, respiratory and movement organ system and metabolic processes.  **Practical**: | | | |
| 11. | **Lecture** Non-communicable diseases: Epidemiology of cardiovascular and tumor diseases. Mental health care. Old and new addictions. Current duties of mother, child and youth protection. Aging societies and the public health challenges of old age.  **Practical**: Lifestyle and health problems | | | |
| 12. | Lecture Health problems caused by waste. Effect of environmental pollution. Presence of environmental pollutants in food.  Practical: | | | |
| 13. | **Lecture** Basic concepts of toxicology. Toxicology of metals, their compounds and pesticides. Toxicological tests and their characteristics, measurement options. Genotoxicology and its expected effects.  **Practical**: Nutrition and food toxicants | | | |
| 14. | **Lecture** Adaptation processes of the weather and the organism. Recognizing the connections between the environment and health. Expected health effects of climate change.  **Practical**: | | | |
| **Mid-term requirements** | | | | |
| **Participation in occupations:**  Participation in practical lessons and lectures is obligated.  Students should not be absent more than 4 lectures and 1 practical lesson. If more, the course result is disable | | | | |
| **Mid-terms, protocols, reports, etc.:**  Two written examinations (including the theory + practice lessons) must be completed at least at a satisfactory level, the homework solution, and an essay, as well as the practical presentation. Examinations must be completed at least with a satisfactory level (separately). The replacement examination is due in the 14th week or during the examination period as prescribed by the Student Requirement System (HKR). | | | | |
| **The method of obtaining a signature /** mid-term mark**:**  Signature conditions: a sufficient level of performance of the 2 written examinations, solving the homework and write the assay as well as the practical final report of the practical lessons. In case of written examination mark fail (1), correction opportunities (the replacement examination are available according at the 14th week according to the Student Requirement System (HKR)  **Important dates:**   1. written examination: 7th of April 2025 2. written examination: 12th of May 2025   Supplement date of the essay and solving the homework: 30th of April 2025  Date of replacement the written examination(s): 22nd of May 2025 | | | | |
| ***Professional competencies:*** | | | | |
| Knows the health and public health factors that determine the state of health, as well as the comprehensive and specific characteristics, most important directions, frameworks and professional guidelines of the related fields of public health. Knows the theoretical background, basic relationships and practical methods of epidemiological studies. Knows the theoretical background and practical importance of health-environment. Know the international results of healthcare-associated infections. He is familiar with international research results on the prevention of healthcare-associated infections. Knows the general and specific natural and social science principles, rules, and connections necessary for the cultivation of public health and health protection. He has comprehensive knowledge of the characteristics and relationships of environmental elements and public health and health protection, as well as the environmentally harmful substances affecting them. During the development and application of health and other technologies, he is able to cooperate with the engineers who develop and apply the given technology in order to develop the technology from the point of view of public health and health protection. Thanks to their multidisciplinary knowledge, they are suitable for creative participation in engineering work and are able to adapt to constantly changing requirements. It cooperates with social organizations dealing with environmental protection, but it can be debated in order to develop optimal solutions. He shares his experiences with his colleagues, thus helping them to develop. Takes responsibility towards society for decisions made in the field of public health and health protection. | | | | |
| ***Literature:*** | | | | |
| 1. Rozanov [V.](http://store.elsevier.com/authorDetails.jsp?authorId=ELS_1195542)  (2016): Stress and Epigenetics in Suicide, 1st Edition, Academic Press, Print Book ISBN: 9780128051993 2. Emerging Infectious Diseases www.cdc.gov/eid Vol. 22, No.10, October 2016 3. [International travel and health (2013](http://www.freebooks4doctors.com/link.php?id=1304)): Information on health risks for travellers. IBSN: 9789240686434 4. Merck and the Merck Manuals (2011): [Infectious Diseases, in: Merck Manual](http://www.freebooks4doctors.com/link.php?id=1124) Merck Sharp & Dohme Corp. 5. Michael Stuart Bronze, Burke A Cunha, Ronald A Greenfield, et al. (2011): [Infectious Diseases](http://www.freebooks4doctors.com/link.php?id=1041) Medscape Reference WebMD 6. Victorian State Government, Australia (2009): [Blue Book](http://www.freebooks4doctors.com/link.php?id=1283). Guidelines for the control of infectious diseases Victorian State Government 7. Paget Stanfield et al. (2008): [Diseases of Children in the Subtropics and Tropics](http://www.freebooks4doctors.com/link.php?id=1373). 4th edition ISBN: 9780340506332 8. David Coggon, David Barker, Geoffrey Rose (2008): [Epidemiology for the Uninitiated](http://www.freebooks4doctors.com/link.php?id=1421). BMJ Publishing Group | | | | |
| **Comment*:***  Attendance at the lectures is mandatory! Obligations of attendance can be fulfilled in case of a maximum of 4 absences. In case of 5th absence from the sessions, the course can no longer be completed. At least sufficient (50-64% = 2) completion of the med-term exams, preparation of practical reports, written of one essay and solving the homework questions. | | | | |