

Health Ecology (Ivan Eržen, Ph.D., Full Prof.)

Subject code: HE

Academic year: 2.

Lectures: 20

Seminar work: 10

Lab exercises: 15

ECTS: 4

Aims of the course:

The purpose of teaching health ecology is that students:

- are familiar with the mission of health ecology and its historical development, and to learn about the significance and impact of social environment on development of this scientific field,
- understand mutual effects of characteristics of individuals, environmental elements and various harmful factors on the health of the population.
- develop the abilities to cooperate in observations and assessment of environmental factors affecting human health,
- are familiar with the process of risk assessment and also possibilities and limitations offered by this approach in the field of identification and reduction of issues related to health ecology, and
- learn about ethical responsibility in case of detecting or suspecting the occurrence of health consequences linked to harmful effect of a particular environmental factor.

Subject content:

Within the subject of health ecology the students will learn about the historical development, significance and impact of social environment on the development of health ecology. The students will learn about changes of the particular subject and what development path can be expected in the future.

The student will learn about the significance of interrelationship and the mutual balance among the environment, individuals and individual factors influencing health. Destruction of the balance is the basis for adverse functioning, and later on for the occurrence of a disease. The students will be acquainted with different adaptation mechanisms which allow compensation of negative impacts on health, namely: autonomous adaptation systems, adaptation systems depending on the will of an individual (active change of circumstances and conditions, cultural habits, ethical norms) and adaptation systems affected by a society.

Within the study subject a special attention will be paid to a presentation of the foundations of the balanced development which represents one of the basic principles of health ecology. Some basic prerequisites for health and their interrelations and entanglement will be presented in the course of lectures. Knowledge and understanding of these relations is of key importance for formation of adequate problem-solving approaches related to health ecology.

The students will be acquainted with the most important factors; which are according to their nature divided into chemical (organic and inorganic chemicals), biological (microorganisms and their toxins, arthropods, allergens and higher plants toxins, protein allergens of vertebrate animals),

physical (sound, , ionising radiation, non-ionising radiation, light, pressure, heat), biomechanical (repetitive movements, painful and tiring positions, injuries), economic (employment, gross domestic product, the level of industrial and technological development, macroeconomic policy), cultural and social (life style, level of education, interpersonal relations, political establishment, the level of democratisation, human rights).

The focus is on presentation of possible consequences on health and adequate placement of various factors regarding the degree of risk after being exposed to such factors affecting human health in general, or affecting health of special groups of human population who are more vulnerable due to their biological, social and economic features.

Examining the impact of harmful environmental factors on human health requires more accurate knowledge of the type and the degree of exposure. For this reason, a part of the study process is dedicated to a presentation of different ways of measuring harmful environmental factors and measuring a degree of exposure of human population. The measurements presented in the course of the lectures are: measuring the quality of the environment (water, the air, soil and food), measuring exposure of a human, identification of health consequences and monitoring the health of an environment.

A significant part of health ecology presented during the study process is also risk assessment - a process where students will be acquainted with a detailed analysis of a degree of risk imposed by a harmful factor, and with assessment of possible effects on health of the individuals exposed to such risk factors.

Within health ecology, the student will also learn about fundamental principles of international ethical principles that apply to professionals working in the field of health ecology.

Teaching methods:

Lectures, seminar work involving field work

Student's obligations:

Written exam, seminar work

Literature

1. Gajšek P, Hlastan-Ribič C, Bilban M, Marušič A, Gabrijelčič Blenkuš M, Cegnar T, Eržen I, Petrovič A, Perharič L, Juričič M (ur.), Čakš T (ur.). Higiena: skripta (*Hygiene: lectures note*): University of Ljubljana, Faculty of Medicine, Department of Public Health - Hygiene, 2004.
3. Eržen I. Abstract from lectures of the study subject Environmental Epidemiology: Ljubljana. Visoka šola za zdravstvo Oddelek za sanitarno inženirstvo(*Faculty of Nursing, Department of Sanitary Engineering*), 2003