UNIVERSITY OF NOVI SAD
FACULTY OF MEDICINE

Study program: Doctoral Academic Studies in Biomedical Sciences

Name of the subject: BIOMEDICAL DATA ANALYSIS OF THE ENVIRONMENTAL IMPACT ASSESSMENT ON HEALTH

Teacher(s): Nataša B. Milić, Milica K. Medić Stojanoska, Nataša P. Milošević, Ljilja D. Torović, Sanja V. Bjelović, Branislava P. Ilinčić, Velibor S. Čabarkapa, Milica T. Atanacković Krstonošić, Mladena N. Lalić Popović, Nataša S. Vučinić, Aleksandar L. Rašković

Status of the subject: elective

Number of ESPB points: 20

Condition: -

Goal of the subject

The overarching goal of the subject is to enable students the study the exposure and measurement of environmental factors including biological, physical, genetic and chemical factors that affect the human health of a community.

Outcome of the subject

Knowledge: Key components of environmental health, including exposure assessment, toxicology, epidemiology, and risk assessment as well as major ways in which the environment and human health are linked.

Skills: Introduction to major factors that determine environmental health risks relevant to air pollution, water and sanitation, solid waste, food safety, and emerging health topics. Genetic susceptibility and health status influence the risk for environmental disease development and progression. Developmental, adult, and occupational chemical exposures associations with health adverse effects. Methodologies and approaches implementation in understanding and managing environmental risks to health; Implementation and development of coherent studies on the environmental health issue and solution proposals by applying the concept of the main environmental health components (exposure assessment, toxicology, epidemiology, and risk assessment) and environmental justice issue. The use of legislation in environmental control (Environmental health risks and regulation)

Content of the subject

Theoretical lectures

- Overview of Environmental Health and Introduction to Environmental Health Outcomes
- Major sources and types of environmental agents. Food Safety. Pests and Pesticides. POPs; Environmental Signals; EDCs
- Challenges in analytical analysis of environmental agents
- Environmental Epidemiology. Study Design: Cross-sectional, Case-control, Cohort
- Human Exposure Assessment. Exposure Dose. Toxicology and Patterns of Disease in Population. Risk assessment
- Environmental Health Framework
- Environmental Health Pathways (Source, Emission, and Concentration of Environmental Agents)
- Principles of toxicokinetic and toxicodynamics of major chemical classes that negatively affect human health
- Genomic, physiological and psychosocial factors affecting health outcomes following exposure to environment
- Air Pollution. Water Pollution. Reproductive and Developmental Disruption by Environmental Chemicals & Other Stressors
- Ionizing Radiation. Genotoxins: Genetic Instability and Epigenetic Changes
- Cancer: Role of the Environment in the Carcinogenic Process. Exposome
- Environmental Metabolomics and biomarkers
- Indoor and Outdoor Air Pollution: Its Effects on Health. Setting Standards for Occupational Health
- Food- and water-borne disease
- Municipal, industrial, and hazardous waste
- Healthy Communities and Environmental Justice. Energy Use, Climate Change and Health

Practical lectures

- Selected studies of risk assessment analysis related to environmental impact on human health
- Sample preparation and analytical tools for the determination of environmental agents in biological and environmental matrixes

Recommended literature

Compulsory

1. Yassi, A., Kjellstrom, T., de Kok, T., Guidotti, T. L. (2001). *Basic environmental health.* New York: Oxford University Press.
2. Nadakavukaren, A. (2000). *Our global environment: A health perspective* (5th ed.) Prospect Heights: Waveland Press, Inc.

Additional

1. Health Safety and Environment (Chapterwise Collection of Objective Questions) ISBN :9789386953353

Number of active classes	**Theory:** 60	**Practice:** 45

Methods of delivering lectures Theoretical and practical teaching.
Evaluation of knowledge (maximum number of points 100) project presentation/seminar 50 oral exam 50