The "Carol Davila" University of Medicine and Pharmacy Bucharest

SUBJECT OUTLINE

1. **Programme of study description**

1.1.	**THE "CAROL DAVILA" UNIVERSITY OF MEDICINE AND PHARMACY**
1.2.	**THE FACULTY OF MEDICINE / PRECLINICAL DEPARTMENT III - Complementary Sciences**
1.3.	**DISCIPLINE: HYGIENE AND MEDICAL ECOLOGY**
1.4.	**DOMAIN OF STUDY: Healthcare – regulated sector within the EU**
1.5.	**CYCLE OF STUDIES: BACHELOR'S DEGREE**
1.6.	**PROGRAMME OF STUDY: MEDICINE**

2. **Subject description**

2.1.	**Name of the subject/compulsory subject/elective subject within the discipline: HYGIENE**						
2.2.	**Location of the discipline: NATIONAL INSTITUTE OF PUBLIC HEALTH, BUCHAREST**						
2.3.	**Course tenured coordinator: Associate Professor Dr. Maria Nitescu**						
2.4.	**Practicals/clinical rotations tenured coordinator: Lecturer Dr. Mirela Nedelescu**						
2.5. Year of study	III	**2.6. Semester**	V/VI	**2.7. Type of assessment**	Written exam and practical exam	**2.8. Subject classification**	DOD

3. **Total estimated time (hours/semester of didactic activity) – teaching module**

Number of hours per week	4	**Out of which: course**	2	**Practical works**	2
Total number of hours from curriculum	56	**Out of which: course**	28	**Practical works**	28
Distribution of allotted time	14 weeks				**Hours**
Study from textbooks, courses, bibliography, and student notes					yes
Additional library study, study on specialized online platforms and field study					yes
Preparing seminars / laboratories, assignments, reports, portfolios and essays					yes
Tutoring					-
Examinations					yes
Other activities					-
Total hours of individual study					56
Number of credit points	4				

4. Prerequisites (where applicable)

4.1. of curriculum	Basic knowledge of biochemistry, physiology
4.2. of competencies	Digital competences

5. Requirements (where applicable)

5.1. for delivering the course	Multimedia devices (videoprojector, laptop, audio equipment, etc.)
5.2. for delivering the clinical rotation	Specific laboratory equipment and materials

6. Acquired specific competencies

Professional competencies (expressed through knowledge and skills)	- To identify environmental health risks in any population, using data collected by relevant public health

	institutions and the in force regulatory provisions, as well; - To identify nutrient imbalanced diets (through food insecurity) or unsafe food and to acquire skills for assessing individual or community nutritional status; - To be able to identify and evaluate risk factors in children and youth communities and to design interventions to promote health and prevent illness in such communities; - To design interventions to promote health in relation to environmental factors, food and nutrition.
Transversal competencies (of role, of professional and personal development)	- To acquire team working skills in public health practice; - To acquire multidisciplinary team working skills (cooperate with doctors, biologists, nutritionists, chemists, veterinarians, food industry engineers, environmental engineers and other specialists from related fields); - To demonstrate professional ethics.

7. Subject learning objectives (based on the scale of acquired specific competencies)

7.1. General learning objective	Formation of a specialized culture in the field of hygiene and medical ecology. This has three directions of action, namely environmental hygiene, food hygiene and child and adolescent hygiene
7.2. Specific learning objectives	Environmental Hygiene evaluates the impact of various polluting elements that can appear in the environment and negatively influence human health, as well as the ways to prevent and combat these unwanted effects; Food hygiene presents the importance and role of the main nutrients for health, the nutritional needs of humans at different stages of life, nutritional imbalances, the main food groups and aspects related to food safety; The hygiene of children and adolescents aims to know the hygienic and sanitary requirements necessary for the setting up and operation of children's and young people's units, as well as to know the methodology of monitoring the infant population to avoid harmful effects on health.

8. Content

8.1. Course	**Teaching methods**	**Observations**
Course 1 - Climate changes and their impact on ecosystems and health.	- Master course; - Interactive exposure according to the analytical program, using multimedia/video projectors, PowerPoint presentations, didactic films ; - For all courses there is updated electronic support in the form of ppt, displayed on the faculty website.	
Course 2 - Air pollution. Chemical pollutants with a major impact on health (irritant pollutants, toxic pollutants, carcinogenic pollutants), health effects, reference standards.		2 hours
Course 3 - Risks to human health in relation to exposure to allergens from the outdoor environment		2 hours
Course 4 – Human habitat and other environmental factors with risk to human health (UV radiation, ionizing radiation)		2 hours
Course 5 - Water polution. Infectious and non-infectious pathology in relation to water		2 hours
Course 6 – Environmental hygiene in healthcare units. Healthcare-associated		2 hours

infections: hospital environment determinants and non-pharmacological preventing measures.		
Course 7 – Food safety. Chemical and microbiological contamination. The main methods of contamination and measures to prevent contamination.		2 hours
Course 8 – Energy and macronutrients intake. Role in health, recommanded daily allowances (RDAs), food sources		2 hours
Course 9 – Micronutrients intake: fat-soluble and water-soluble vitamins. Role in health, recommanded daily allowances (RDAs),, food sources.		2 hours
Course 10 – Micronutrients intake: minerals. Role in health, recommanded daily allowances (RDAs), food sources.		2 hours
Course 11 – Peculiarities regarding nutrition in different stages of life. Specific physiological changes and nutritional needs		2 hours
Course 12 - Nutritional imbalances. Micronutrient deficiency, protein-calorie malnutrition and diseases caused by energy and macronutrient excess.		2 hours
Course 13 – Hygiene rules regarding the units for the protection, education, training, rest and recreation of children and young people		2 hours
Course 14 – Health surveillance in children and young people in educational institutions		2 hours
8.2. Practical works (Pw)	**Teaching methods**	**Observations**
Pw 1- Climate changes. Approaches and actions at global level to mitigate climate changes. WHO Global Strategy on Health, Environment and Climate Change.	-Short oral exposure; -Specific laboratory determinations, according to the analytical program; -Case studies, reports, specialized literature reviews, debates, use of databases, activity in microgroups, individual study; -The reports are made in microgroups.	2 hours
Pw 2 – Laboratory testing methodes of asphyxiating and respiratory irritating pollutants. The methodology for performing the health impact assessment in exposure to respiratory irritant pollutants.		2 hours
Pw 3 - Laboratory testing methodes of air polluted with lead. Laboratory testing methodes of human exposure to lead polluted environment.		2 hours
Pw 4 – Measuring thermal confort and CO2 concentration in the indoor air. Measuring human exposure to UV and ionizing radiations.		2 hours
Pw 5 - Laboratory testing methodes for microbiological and chemical pollution		2 hours

indicators in drinking water. Water desinfection.		
Pw 6 - Laboratory testing methodes for bacterial pollution of the indoor air, surfaces and hands. Assessing the efficacy of : cleaning and desinfection of surfaces; hand hygiene. Presentation of reports - the environmental hygiene module		2 hours
Pw 7 – Milk and dairy. Eggs: Testing methods of the indicators of alteration and contamination		2 hours
Pw 8 – Meat, fish and cuts. Oils and solid fats: Testing methodes of the indicators of alteration and contamination		2 hours
Pw 9 – Fruits and vegetables. Grains, derivates and dried legumes. Testing methods of the indicators of alteration and contamination		2 hours
Pw 10 – Added sugars. Alcoholic drinks and beverages. Testing methodes of the indicators of alteration and contamination		2 hours
Pw 11 - Principles of healthy eating, nutritional guidelines, diets for health promotion and prevention of chronic non-communicable diseases (DASH, Mediterranean diet, anti-inflammatory diet, vegetarian diet, etc.). Formulating a diet for a healthy adult.		2 hours
Pw 12 - Food intake evaluation methods. Assessment of individual nutritional status. Presentation of reports - food module		2 hours
Pw 13 - Hygienic requirements necessary for the operation of children and youth units, to prevent the occurrence of related diseases.		2 hours
Pw 14 - Activity and rest regime of children and adolescents. Food survey in a community.		2 hours

Bibliography for course and practical works

1. Igiena – curs pentru studenţi – Editura Universitară „Carol Davila”, 2018
2. European Environment Agency (EEA). Europe's changing climate hazards — an index-based interactive EEA report, 2021, https://www.eea.europa.eu/publications/europes-changing-climate-hazards-1
3. WHO Global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide, 2021, https://www.who.int/publications/i/item/9789240034228?ua=1
4. WHO guidelines for indoor air quality: selected pollutants, 2010, https://www.euro.who.int/__data/assets/pdf_file/0009/128169/e94535.pdf
5. European Centre for Disease Prevention and Control (ECDC). Food- and waterborne diseases and zoonoses, https://www.ecdc.europa.eu/en/food-and-waterborne-diseases-and-zoonoses
6. WHO. Guidelines for drinking-water quality: Fourth edition incorporating the first and second addenda, 2022, https://www.who.int/publications/i/item/9789240045064
7. WHO. Water, sanitation and hygiene, WASH Strategy 2018-2025,

https://www.who.int/publications/i/item/WHO-CED-PHE-WSH-18.03
8. European Environment Agency (EEA). The role of human biomonitoring in assessing and managing chemical risks. 2019, https://www.eea.europa.eu/themes/human/human-biomonitoring
9. WHO, Water safety in distribution systems, 2014, https://www.who.int/publications/i/item/9789241548892
10. WHO, Towards the elimination of asbestos-related diseases in the WHO European Region, 2015, https://www.euro.who.int/__data/assets/pdf_file/0015/272130/Asbestos5a.pdf
11. European Food Safety Authority (EFSA). Nutrient profiling – scientific advice for EU Farm to Fork initiative, 2022, https://www.efsa.europa.eu/en/news/nutrient-profiling-scientific-advice-eu-farm-fork-initiative
12. European Food Safety Authority (EFSA). Data reports 2021: Chemical Contaminant and Additives occurrence (2011-2015), https://www.efsa.europa.eu/en/data-report/chemical-contaminant-and-additives-occurrence-2011-2015

9. Corroboration of the subject content with the expectations of the representatives of the epistemic community, professional associations, and major employers in the field of the programme of study

The student's training aims to familiarize them with the main environmental risks, with the risks generated by a nutritionally, energetically and hygienically inadequate diet, so that the future physician can identify the patient's exposure to such risks and make correct decisions regarding case management.
It also aims for the student to understand the importance that environmental factors and nutrition play in promoting health and preventing disease, so that they can design health promotion interventions in relation to environmental factors, food and nutrition.
The content of the discipline is consistent with the requirements of the professional association and employers.

10. Assessment

Type of activity	Assessment criteria	Assessment methods	Assessment weighting within the final grade
Course	- adequate acquisition of the concepts presented and their correct understanding	- written exam – presentation of two fundamental notions (30%) - solving 15 questions, Q (5 single choice Q, 10 multiple choice Q) 25%	55%
Practical works	- correct solving of case studies, practical applications	- written exam –10 questions (5 single choice Q, 5 multiple choice Q) - 15% - 1 case study -15%	30%
10.5.1. Reports of microgroups	- carrying out a literature review in microgrups, from the list established by the discipline team, in accordance with the analytical curriculum.	Review in microgroups and oral presentation of the report in form of a ppt presentation	15%

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The Quality Assurance Commission

Minimum performance standard
• Correctly solving at least 50% of the multiple choice question section, of the written questionnaire. Mandatory condition for promotion. • Correctly solving at least 50% of the "editorial topics" section of the written examination. Mandatory condition for promotion. • Correctly solving at least 50% of the case study- mandatory condition for promotion.

Date of filing	**Signature of the course tenured coordinator** **Associate Prof. Dr. Maria Nitescu**	**Signature of the seminar tenured coordinator** **Lecturer dr. Mirela Nedelescu**

Signature of the Head of the Department
Prof. Dr. Dana Galieta Mincă

Date of approval in the Council of the Department: