University of Medicine and Pharmacy "Carol Davila" Bucharest
Commission for Quality Assurance

DETALIED SYLLABUS

1. Data regarding the program

1.1.	UNIVERSITATY OF MEDICINE AND PHARMACY "CAROL DAVILA"
1.2.	FACULTY: MEDICINE/ DEPARTMENT - III , Complementary Sciences
1.3.	**DISCIPLINA: HYGIENE AND MEDICAL ECOLOGY**
1.4.	FIELD OF STUDY : HEALTH - Sectoral regulation within the European Union
1.5.	STUDY CYCLE: LICENCE
1.6.	STUDY PROGRAM: MEDICINE

2. Data regarding the discipline

2.1.	Name of the discipline/ matter mandatory/ optional within the discipline: HYGIENE AND MEDICAL ECOLOGY
2.2	Location: INSTITUTUL DE SĂNĂTATE PUBLICĂ BUCURESTI
2.3.	Course coordinator: (all qualified teachers with class hours: name, surname, university degree, age, seniority in didactic activity):
2.4.	Practical activity coordinator (all qualified teachers with class hours: name, surname, university degree, age, seniority in didactic activity):

2.5. Study year	III	2.6. Semester :	V/VI	2.7. Type of evaluation	Written exam and practical examination	2.8. Type of discipline	Mandatory DS

3. Total estimated time (hours/semester of didactic activities)

Hours per week	4	Out of which : lecture	2	Laboratory practical activity	2
Total hours in the curriculum	56/semester	Out of which : lecture	28/semester	Laboratory practical activity	28/semester
Distribution of the time pool	14 weeks		4 hours /day		hours
Study of books, lecture materials, bibliography, notes					yes
Supplemental documentation at the library, from specialized information portals and in the field					yes
Preparation for seminars / laboratories, homeworks, reports, portofolios and essays					yes
Tutorial activities					-
Examinations					yes
Other activities					-
Total hours of individual study per week					10
Number of credits		4			

4. Prerequisites (where applicable)

4.1. curricular prerequisites	Knowledge of biochemistry, physiology and biostatistics.
4.2. competency prerequisites	Knowledge of current laboratory activity.

5. Conditions (where applicable)

5.1. for lectures	Technical support: multimedia projector, computers, computer software (Windows and data processing software)
5.2. for laboratory and practical activities	National Institute of Public Health

6. Specific competencies aquired

Professional competencies (expressed through knowledge and skills)	At the end of the stage the student must know: - Analysis of situations due to the presence and action of certain environmental pollutants. - Analysis of pollution sources of various environmental factors, metabolism, effects on human health. - Recommendations that can be made to avoid, reduce or eliminate a hazardous situation for human health in the event of an acute or chronic exposure to pollutants. - Calculation of a food ratio. - Knowledge of the main sources of nutrients. - Assessing a judicious supply of food principles in accordance with the nutritional needs of the sick and healthy man. - Assessment of anthropometric parameters in children and young people. - Surveillance of the health of children and adolescents.
Transversal competencies (role, professional development, personal)	- To have the ability to work in a medical team in the field of hygiene. - To have the ability to work in a multidisciplinary team of physicians, biologists, chemists and hygiene related fields. - To show professional deontology.

7. Objectives of the discipline (based on the grid of specific competencies)

5.1. General objective	The discipline tries to form a specialized culture in the field of hygiene and medical ecology. It has three directions of action: environmental hygiene, food hygiene and the hygiene of children and adolescents.
5.2. Specific obiectives	*Environmental Hygiene* assesses the impact of various pollutants that may occur in the environment and the negative impact on human health as well as ways to prevent and combat these undesirable effects. *Food hygiene* presents the nutritional needs of humans, the main

	sources of nutrients and food safety features. *The hygiene of children and adolescents* has as objective the assessment and interpretation of the child's physical and neuro-psychological developmental elements, the identification of the child's growth and developmental disorders and the surveillance of the infant population in order to avoid adverse effects on health.

8. Contents

8.1. Lectures	**Teaching methods**	**Observations**
Lecture 1- Air pollution: the main pollutants in the air, health effects, reference standards.	Lectures presented in PPT format, movies showing pollution accidents, explanatory animations of pollution situations.	2 hours
Lecture 2 - Water pollution (biologic, chemical, radioactive).	Lectures presented in PPT format, movies showing pollution accidents, explanatory animations of pollution situations.	2 hours
Lecture 3 - Water treatment and requirments for drinking water, reference standards	Lectures presented in PPT format, movies showing pollution accidents, explanatory animations of pollution situations.	2 hours
Course 4 - Soil pollution, prevention measures, reference standards.	Lectures presented in PPT format, movies showing pollution accidents, explanatory animations of pollution situations.	2 hours
Lecture 5 - Ionizing and non-ionizing radiation: sources, classification and health effects, norms.	Lectures presented in PPT format, movies showing pollution accidents, explanatory animations of pollution situations.	2 hours
Lecture 6 - Requirements for a sanogenous habitat.	Lectures presented in PPT format, movies showing pollution accidents, explanatory animations of pollution situations.	2 hours
Lecture 7 - Climate change and health effects.	Lectures presented in PPT format, movies showing pollution accidents, explanatory animations of pollution situations.	2 hours
Lecture 8 - Terminology: nutrient, classification of nutrients. Energy requirements.	Lectures presented in PPT format, movies and explanatory animations.	2 hours
Lecture 9 - Proteins, Glucids, Lipids	Lectures presented in PPT format, movies and explanatory animations.	2 hours
Lecture 10 - Fat-soluble vitamins	Courses presented in PPT format, movies and explanatory animations.	2 hours
Lecture 11 -Water-soluble vitamins	Courses presented in PPT format, movies and explanatory animations.	2 hours
Lecture 12 - Micro- and Macronutrients	Courses presented in PPT format, movies and explanatory animations.	2 hours
Lecture 13 - General characteristics of the physical	Courses presented in PPT format, movies and explanatory animations.	2 hours

and neuro-psychical development of children.		
Lecture 14 - Surveillance of the children and young people health in educational establishments.	Courses presented in PPT format, movies and explanatory animations.	2 hours
8.2. Clinical stages (Laboratories)	**Teaching methods**	Observations
LP 1 - Assessment of carbon monoxide in air. Assessment of carboxyhemoglobin in blood	Oral and PPT presentation. Applied chemical determinations in air and blood.	2 hours
LP 2 - Assessment of sulfur dioxide in air. Assessment of nitrogen dioxide in air. Methodology for health impact assessment of exposure to irritant pollution	Oral and PPT presentation. Applicable chemical determinations for air samples. Methodology of health impact assessment. Practical exercises.	2 hours
LP 3 - Assessment of lead in the air. Assessment of lead effects on human health.	Oral and PPT presentation. Applicable chemical determinations of air samples. Methodology of health impact assessment. Practical exercises.	2 hours
LP 4 - Assessment of biologic contamination of air and surfaces.	Oral and PPT presentation. Bacteriologic determinations of air and surfaces contamination. Practical exercises.	2 hours
LP 5 - Assessment of biologic contamination of water. Water disinfection. Assessment of chemical pollution of water.	Oral and PPT presentation. Bacteriologic determinations of water contamination. Practical exercises.	2 hours
LP 6 - Assessment of soil pollution (biologic and chemical pollution). Thermal ambience. Indoor air quality.	Oral and PPT presentation. Bacteriologic and chemical determinations of soil samples. Practical exercises. Determination of the thermal environment in the classroom.	2 hours
LP 7 - Ionizing and non-ionizing radiation.	Oral and PPT presentation. Modalities for assessing the impact on human health. Practical exercises.	2 hours
LP 8 - Milk and dairy products. Eggs	Oral and PPT presentation. Modalities for assessing the impact on human health. Practical exercises.	2 hours
LP 9 - Meat and meat products	Oral and PPT presentation. Modalities for assessing the impact on human health. Practical exercises.	2 hours
LP 10 - Vegetables and fruits. Cereals derivates and legumes.	Oral and PPT presentation. Modalities for assessing the impact on human health. Practical exercises.	2 hours
LP 11 - Commercial fats. Canned	Oral and PPT presentation.	2 hours

products. Alcoholic and non-alcoholic beverages	Modalities for assessing the impact on human health. Practical exercises.	
LP 12 - Food survey in communities	Oral and PPT presentation. Modalities for assessing the impact on human health. Practical exercises.	2 hours
LP 13 - Methods and techniques for assessing the physical development of the child. Methodology for assessing the neuro-psychological development by age groups. The activity and rest program of children and adolescents.	Oral and PPT presentation. Modalities for assessing the impact on human health. Practical exercises.	2 hours
LP 14 - Health surveillance in communities: epidemiological triage, periodic examinations, surveillance of chronic diseases in children and young people.	Oral and PPT presentation. Modalities for assessing the impact on human health. Practical exercises.	2 hours

Bibliography for course and laboratory activities:

1. Moldoveanu A.M,. Environmental Hygiene, Editura MATRIX ROM, Bucuresti, 2007,
2. Principles and Practice of Environmental Medicine,a.by Alyce .Bezman. Tarcher, NY, 1992,
3. IARC Monographs on the carcinogenic risc to humans. Ionizing Radiation, Lyon, 2001,
4. Casarett&Doill's Toxicology: The basic science of Poisons, Curtis D Klaassen, McGraw-Hill Companies Inc, USA, 2001,
5. Topics in environmental epidemiology, Kyle Steenland, David A. Savitz, Oxford University Press, UK, 1997,
6. Dictionary of Food Science and Nutrition (Food Science), by A & C Black Publishers Ltd; 1 edition , 2006,
7. Manual of Nutrition (Reference Book 342) by Food Standards Agency, Stationery Office Books; 11th edition , 2008,
8. Janice Thomson, Melinda Manore, Linda Vaughan. The Science of Nutrition, Publisher: Benjamin Cummings; 2 edition, 2010,
9. Harrison's Principles of Internal Medicine 16th Edition, McGraw-Hill Professional; 16 edition 2004).
10. WHO, Guideline for indoor air quality, 2015,
11. WHO, Guideline for indoor air quality: dampness and mold, 2014,
12. WHO, Air quality quideline; universal update, 2005,
13. WHO-IPCS, Dermal exposure, 2014,
14. WHO, Protecting health from climate changes , 2013,
15. WHO, Protecting health in Europe from climate changes , 2013,
16. WHO, Guideline: Sugars intake for adults and children, 2015,
17. WHO, Guideline: Potassium intake for adults and children, 2015,
18. WHO, Guideline: Sodium intake for adults and children, 2015,
19. WHO, Child Growth Standards: Growth Velocity based on Weight, Length and Head Circumference, 2009,
20. WHO, Calcium and Magnesium in drinking water, 2009,
21. WHO, Vitamin and mineral requirements in human nutrition, 2005,
22. WHO, Water safety in distribution systems, 2014,
23. WHO, Crysotile asbestos, 2015,
24. WHO, Iodine and inorganic iodines: human health aspects, 2009,

25. WHO, Evaluation of certain contaminants in food, 2017.

9. Coroboration between discipline content and expectations of community, professional associations and representative employers in the field related to the program

Appropriate training at the end of the semester in which the hygiene was studied confers the prerequisites for the admission to residency and the performance of a successful medical activity.

10. Evaluation

Type of activity	Evaluation criteria	Evaluation methods	Percent of the final grade
Lecture	Understanding the theoretical notions of the discipline.	Written exam (grid type) – 30 questions: single choice and multiple choice.	75%
Laboratory and practical activities	Reproduction of the main laboratory determinations.	Practical exam in the front of group assistant.	25%
Minimal performance standards			
• At least 51% of the cumulative score in the two evaluations.			

Date of completion: 15/02/2018
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Signature of course coordinator

Signature of practical activity coordinator

Date of endorsement in the Department Board:
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Signature of Department Director