**SYLLABUS**

1. **Programme Details**

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| **1.1.** | **“GRIGORE T. POPA” UNIVERSITY OF MEDICINE AND PHARMACY IASI** |
| **1.2.**  | **FACULTY: MEDICINE / DEPARTMENT: PREVENTIVE MEDICINE AND INTERDISCIPLINARITY** |
| **1.3.** | **DISCIPLINE: HYGIENE AND ENVIRONMENTAL HEALTH** |
| **1.4.**  | **FIELD OF STUDY: HEALTH** |
| **1.5.** | **STUDY CYCLE: BACHELOR**  |
| **1.6.** | **PROGRAMME OF STUDY: MEDICINE - ENGLISH**  |
| 1. **Discipline Details**
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| **2.1.** | **Name of the Discipline: HYGIENE AND ENVIRONMENTAL HEALTH** |
| **2.2.** | **Teaching staff in charge with lectures: Associate Professor PETRARIU FLORIN, M.D., Ph.D.** |
| **2.3.** | **Teaching staff in charge with seminar activities:** **Associate Professor PETRARIU FLORIN, M.D., Ph.D.** |
| **2.4. Year**  | **IV** | **2.5. Semester** | **I/II** | **2.6. Type of evaluation**  | C1/C2 | **2.7. Discipline regimen**  | Compulsory |

1. **Overall Time Estimates (hours/semester of didactic activity)**

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| * 1. **Number of hours per week**
 | 4 | **Of which:** **3.2. lectures** | 2 | * 1. **Seminar/ laboratory**
 | 2 |
| * 1. **Total hours**

**in the curriculum** | 40 | **Of which:** **3.5. lectures** | 18 | **3.6. Seminar/ laboratory** | 22 |
| **Distribution of time**  | Hours |
| **Study time using course book materials, bibliography and notes**  | 10 |
| **Further study time in the library, online and in the field** | 10 |
| **Preparation time for seminars / laboratories, homework, reports, portfolios and essays** | 10 |
| **Tutoring** | 3 |
| **Examinations** | 2 |
| **Other activities** | - |
| **3.7. Total hours of individual study** |  | **35** |
| **3.8. Total hours / semester** |  | **75** |
| **3.9. Number of credits**  |  | **3** |

1. **Prerequisites (where applicable)**

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| **4.1. curriculum** | Not applicable |
| **4.2. competences** | Not applicable |

1. **Conditions (where applicable)**

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| **5.1. for lecture delivery** | Not applicable |
| **5.2. for seminar / laboratory delivery** | Not applicable |

1. **Specific Competences Acquired**

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| **Professional Competences (knowledge and skills)** | Interpreting the results of an investigation conducted by the statistical method or by the food questionnaire.The interpretation of the physical development of children and teen agers and elaborating coherent programs of medical intervention.The interpretation of a water physico-chemical and microbiological report and proposal of intervention measures where is necessary.The interpretation of an air physico-chemical and microbiological report and correlating the results with the population health issues. |
| **Transversal Competences (roles, personal and professional development)** | The awareness of the importance and the impact of the preventive medicine on human health status. The ability to plan the use of material resources and to effectively manage the time budget. |

1. **Objectives of the Discipline (related to the acquired competences)**

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| **7.1. General Objective** | Learning and researching the methods for evaluating the quality of food, water, air and the development of children and teen agers. |
| **7.2. Specific Objectives**  | 1. Knowledge of the natural and artificial environmental factors and the ways in which they affect the individual and community health level.2. Skills acquisition for the methods of calculating the quantity and quality of a nutritional intake by gender, age and physiological state of the subject.3. Determination and the microclimate assessment in different forms of habitat (housing type or special type / health facilities, schools).4. Diagnosis of the physical development in children and teen agers. |

1. **Contents**

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| **8.1. Lectures** | **Teaching methods** | **Comments** |
| I. Energetic nutrients.Energetic needs of the human being. Energetic nutrients from food (proteins, lipids and carbohydrates). Classification, nutritional roles, Recommended Daily Allowances. Food sources of nutrients and the food processing impact. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| II. Non-energetic nutrients. Fat-soluble vitamins and water-soluble vitamins: nutritional roles; deficiency and excess consequences; usual requirements; food sources and the food processing impact. Major and trace elements: nutritional roles; deficiency and excess consequences. Usual requirements and food sources. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| III. Food groups: nutritive value; effects of an inadequate intake; RDA. Milk and milk-based products, meat and meat-based products, fish and sea food, eggs, cereals and other grain products, fruits and vegetables, potatoes, animal and vegetal fats, sugar-based products, alcoholic and non-alcoholic drinks. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| IV. Food groups: actual issuesFood safety and food additives. Organic food *vs.* conventional food. Genetically modified food *vs.* conventional food. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| V. The impact of air pollution on the human health status.Effects on the health status by modifying physical proprieties and chemical composition of the air.Thermal ambiance and thermal equilibrium of the human body.Air chemical pollution: sources, acute/chronic effects, prevention.Air and surfaces biological contamination in hospitals,health care facilities and the effects on human health status.Hospital acquired infections. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| VI. Physical air pollution (ionizing and non-ionizing radiation, noise pollution) and the impact on the human healthNatural and artificial sources of ionizing, non-ionizing radiationand noise pollution.Health promoting effects *vs.* damaging effects (acute and chronic). Preventing and fighting measures against ionizing radiation, non-ionizing radiation and noise pollution. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| VII. Role of water in relationship with human health statusSources of drinking water. Pollution and self-purification of the water.The impact of water pollution on the health status: effects of nitrates, detergents, pesticides and carcinogenic substances.The impact some microelements from the water: iodine and fluorine. Water mineralization and its influence on cardiovascular diseases. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| VIII. Centralized water supply of the population.Water treatment plant components.Biological water pollution impact on human health status.Water-borne diseases. Preventing and fighting against microbiological water pollution. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| IX. The growth and development process for children and teen-agers. General principles of human growth and development.Influencing factors on human growth and development.General and special features of growth and development for children and teen-agers (related to age, sex and types of activities). Healthful housing.Principals features of a house. The roles of a healthful housing in promoting health status. | Interactive debatesPowerPoint andVideo Presentations | 2 hours |
| **Bibliography**1. Gavăt V., Petrariu F.D., Gavăt C.C., Azoicăi D. *Factorii de risc din mediu şi sănătatea.*

Iasi: Editura EditDAN, 2001. 1. Gavăt V., Petrariu F.D., Gavăt C.C., Indrei L. L. *Alimentația şi patologia nutrițională.*

Iași: Editura “Gr. T. Popa”, 2003.1. Gavăt V., Albu A., Petrariu F.D. *Alimentația şi mediul de viață în relație cu dezvoltarea copiilor şi a tinerilor.* Iaşi: Editura “Gr. T. Popa”, 2006.
2. Gavăt V. *Sănătatea mediului şi implicațiile sale în medicină.* Iaşi: Editura “Gr. T. Popa”, 2007.
3. Mănescu S. *et al.* *Igienă.* București: Editura Medicală, 1991.
4. Mănescu S. *et al. Chimia sanitară a mediului.* București: Editura Medicală, 1994.
5. Banu C. *et al.* *Suveranitate, securitate și siguranță alimentară*. București: Editura ASAB, 2007.
6. \* \* \* Journal of the European Union. COUNCIL RECOMMENDATION of 9th of June 2009 on patient safety, including the prevention and control of healthcare associated infections. *EUR-Lex,* 2009 (2009/C151/01)
 |
| **8.2. Seminar / Laboratory** | **Teaching methods** | **Comments** |
| 1. Methodology for carrying out food inquiries in communities

and in the family (inquiry on food groups by statistical method and questionnaires). | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 2. Methodology of appreciation of the nutritional principles’ intake (inquiry on nutritional principles using the statistical method).  | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 3.Assessment of the nutritional status of the people and different types of populational studies. | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 4. The assessment of the food safety by knowing the nutritional value and the hygienic conditions imposed by the specificity of each food product. Food poisoning (risk factors, outbreak management) | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 5. Evaluation methodology for the air pollution in a populated centre. Impact studies. Systematization of a city. | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 6. Assessment of the risk of hospital acquired infections by air pollution. | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 7. Methodology for conducting studies of the impact of water pollution on the health status of the population: monitoring the concentration of nitrates in drinking water, prophylaxis of the occurrence of methemoglobinemia. | Discussion and questionsAnalysis of practical cases PowerPoint presentation | 2 hours |
| 8. Establishing the diagnosis of water potability, the methodology of water quality monitoring and the current EU legislation. | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 9. Treating the water for drinking purpose and checking its efficiency by reporting the level of microbiological indicators to the norms in force. Disinfection of variable volumes of water. | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 10. The methodology for determining the physical factors of indoor microclimate (temperature, humidity, air currents, radiant temperature). Subjective and objective physiological indicators for assessing the effects of the microclimate on the human body. | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| 11. Physical development and neuropsychological diagnosis of children and teen agers. The development assessment in sigmatic grades. Methodology for monitoring the children and teen agers health status in the communities. | Discussion and questionsAnalysis of practical casesPowerPoint presentation | 2 hours |
| **Bibliography**1. Gavăt V. *Igiena lucrări practice.* Iaşi: U.M.F. “Gr. T. Popa” 1998.
2. Lupea A *et al*. *Fundamente de chimia mediului.* Bucureşti: Editura Didactică şi Pedagogică, 2008.
3. Mănescu S. *Microbiologia sanitară.* Bucureşti: Editura Medicală, 1989.
4. Mănescu S. *et al.* *Chimia sanitară a mediului.* Bucureşti: Editura Medicală, 1994.
5. Shapton D. *Principles and practices for the safe processing of food.*

Cambridge: Woodhead Publishing Ltd, 1998. |

1. **Correlations between the contents of the discipline and the expectations of the epistemic community, of professional associations and of employers in the field**

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| Knowledge and skills are set as objectives mentioned in teaching and in the curricula, annually reviewed. After the analysis within the discipline, they are discussed and approved at the Bureau of Curriculum, to harmonize with the other disciplines. Throughout the period are evaluated as systematically as possible the direct correlation between the content and the expectations of the academic community, representatives of the community, professional associations and employers. As a primary goal, discipline aims to give to the students an optimal prerequisite for the next years of study in the MD program, in anticipation of a successful employment as soon after the graduation in residency programs held in Romania and other EU countries. |

1. **Evaluation**

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| **Type of activity**  | **10.1. Evaluation criteria** | **10.2. Methods of evaluation** | **10.3. Percentage of final grade** |
| **10.4. Lecture** | Colloquium grade | Written assessment at the end of the semester (four theoretical topics) | 50% |
| **10.5. Seminar / Laboratory** | Average grade of ongoing examinations | Activity during the semester (comprising frequency 10%, student’s behaviour 10%, interactivity 15%, knowledge assessment 65%) | 10% |
| Grade for practical examination | Practical exam (solving three practical problems) | 40% |
| **Minimum standard of performance: at least grade 5 to pass the discipline** |

**Date: 17.10.2019 Signature of Didactic Co-ordinator**

**Associate Professor Dr. Albu Adriana, M.D., Ph.D.**

**Signature of Department Director**

**Associate Professor Dr. Petrariu Florin Dumitru, M.D., Ph.D.**