**ACADEMIC DISCIPLINE OVERVIEW**

1. **Program data**

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| 1.1. Higher education institution | Grigore T. Popa University of Medicine and Pharmacy Iasi |
| 1.2. Faculty | Medical Bioengineering |
| 1.3. Department | Biomedical Sciences |
| 1.4. Field of study | Health |
| 1.5. The cycle of studies | Bachelor |
| 1.6. Study program / qualification | Balneo-physiokinetotherapy and rehabilitation – english language / Physiokinetotherapist |

**2. Discipline data**

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| 2.1. Name of the discipline / Code | **Pharmacology. Clinical pharmacology** | **RE1213** |
| 2.2. Teaching staff in charge with lectures | **Associate Professor Cristina Gavrilescu, MD, PhD** |
| 2.3. Teaching staff in charge with practical activities | **Associate Professor Cristina Gavrilescu, MD, PhD** |
| 2.4. Year of study | **II** | 2.5. Semester | **2** | 2.6. The type of assessment | **Exam, E2** |
| 2.7. Discipline type | **Mandatory** | **Fundamental discipline** |

**3. Estimated total time (hours/semester of didactic activity)**

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| 3.1. Number of hours / week: | 3.2. Courses number of hours / week | 3.3. Seminars / practical classes number of hours / week |
| Semester 1 |  |  |  |
| Semester 2 | **2** | **1** | **1** |
| 3.4. Total number of learning hours: | **28** | 3.5. Of which: Courses | **14** | 3.6. Of which: Seminars / practical classes: | **14** |
| 3.7. Distribution of individual study time: | Hours sem. 1 | Hours sem. 2 |
| Study time using course book materials, bibliography and hand notes |  | 8 |
| Supplementary documentation in the library, using specialised platforms via internet and by field work |  | 4 |
| Preparation time for seminars / practical classes, study themes, reviews, portfolio and essays |  | 4 |
| Tutorship |  | 2 |
| Examinations |  | 2 |
| Other activities |  | 6 |
| Total hours of individual study (*without examinations*) |  | **22** |
| 3.8. Total hours per semester |  | **50** |
| 3.9. Number of credits |  | **2** |

**4. Preconditions (where applicable)**

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| 4.1. of curriculum | Physiology, Biochemistry |
| 4.2. of competences | - Basic Knowledge regarding the main physiologic functions of human body and their regulation;- Knowledge of the most important signaling pathways related to communication between cells |

5. **Conditions (where applicable)**

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| 5.1. for lectures | Videos logistic support |
| 5.2. for seminars / practical classes | Protective clothing |

**6. Specific competences acquired**

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| **Professional competencies** | **C1.1** | Description of concepts, theories and fundamental notions of physiological and pathological mechanisms of the human locomotor system, recognition of clinical symptoms and signs, identification of physical therapy methods and techniques. Knowledge of the medication of the respiratory and cardiovascular system, the main indications and adverse reactionsUnderstanding the advantages and disadvantages of the common routes of drug administration and excretion |
| **C 1.2** | Formulation of hypotheses and operationalization of key concepts in order to explain syndromes and/or diseases of the locomotor, respiratory and cardiovascular systemAssessing the appropriate drug use |

7**.** **Objectives of the study discipline (according to the grid of specific competences acquired)**

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| 7.1. General objective | Basic knowledge of pharmacokinetics and pharmacodynamics. |
| 7.2. Specific objectives | - Teaching the students the absorption, transport, distribution, metabolism and excretion of medicaments- Teaching the mechanisms of action of some classes of drugs. |

**8. Contents**

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| **8.1. Lectures** | **Teaching methods** | **Observations** |
| 1 | Pharmacokinetics | Interactive lecture, critical acclaim | 2 hours |
| 2 | Pharmacodynamics | Interactive lecture, critical acclaim | 2 hours |
| 3 | Movement disorders | Interactive lecture, critical acclaim | 2 hours |
| 4 | Muscle relaxants | Interactive lecture, critical acclaim | 2 hours |
| 5 | Basis of treatment in bronchial asthma and chronic obstructive pulmonary disease | Interactive lecture, critical acclaim | 2 hours |
| 6 | Basis of treatment in arterial hypertension, ischemic heart disease, heart failure | Interactive lecture, critical acclaim | 2 hours |
| 7 | Basis of treatment in diabetes mellitus | Interactive lecture, critical acclaim | 2 hours |

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| **8.2. Practical activities - practical class**  | **Teaching methods** | **Observations** |
| 1 | Routes of drug administration | Seminar. Practical demonstration. | 2 hours |
| 2 | Discussion on the importance of pharmacodynamics | Seminar. Practical demonstration | 2 hours |
| 3 | Examples of movement disorders and their treatment | Seminar. Practical demonstration. Case presentation | 2 hours |
| 4 | Examples of muscle relaxants. Advantages and disadvantages | Seminar. Practical demonstration. Case presentation | 2 hours  |
| 5 | Treatment of bronchial asthma and COPD | Seminar. Practical demonstration. Case presentation | 2 hours |
| 6 | Treatment of arterial hypertension, ischemic heart disease, heart failure | Seminar. Practical demonstration. Case presentation | 2 hours |
| 7 | Treatment of diabetes mellitus | Seminar. Practical demonstration. Case presentation | 2 hours |

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| **8.3. Bibliography:** |
| ***Mandatory:*** |
| 1. Course and practical works notes posted on e-Learning platform2. Richards D.- Oxford Handbook of Practical Drug Therapy. Oxford University Press, London, 20163. Cobert B.- Cobert’s Manual of Drug Safety and Pharmacovigilance. World Scientific Publishing Co Pte Ltd. 20194. C. Ghiciuc Pharmacology-lecture notes- - edit ,,Gr.T.Popa” UMF Iasi 2014 |
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| ***Elective:*** |
| ***1.*** Katzung B.G. — Basic & Clinical Pharmacology. Prentice Hall International Inc., London, 20132. Paloma Manea, Cristina-Maria Gavrilescu, Irina Jari, Manuela Ursaru, Dragos Negru, Rodica Ghiuru, Mona Scutariu: Basics in medical semiology and internal medicine; edit ,,Gr.T.Popa” UMF Iasi 2016 ISBN 978-606-544-367-9.3. Clinical toxicology-L.Sorodoc,C.Lionte- edit ,,Gr.T.Popa” UMF Iasi, 2013 |

**9. *Correlation of the discipline contents with the expectations of the epistemic community, professional associations, and representative employers from the afferent program field***

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| Knowledge and abilities are established as didactic objectives and specified as such in the analytic programs that are revised yearly. After their analysis by the study discipline staff, these are discussed and approved in the Curricular Committee, towards curricular harmonization among the various study disciplines. Along this entire process systematic evaluation is performed, directly if possible, regarding the correspondence of the contents to the expectations of the academic community and of the representatives of the social community, professional associations, and employers. |

**10. Evaluation**

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| Type of activity | Assessment criteria | Evaluation methods | Contribution to the final grade |
| Lectures | Acquiring theoretical notions and presented in the course | Written exam. MCQ Examination | 80 % |
| Practical activities | Activities carried out in laboratory and conducted quality essays. | Colloquium practical activity | Admitted/ Rejected |
| Individual study | Preparation time for seminars / practical classes, study themes, reviews, portfolio and essays.Study time using coursebook materials, bibliography and hand notes, documentation in the library, using specialised platforms via internet and by field work. | Tests during the semester | 20 % |
| Minimal performance standard:* Describe the pharmacokinetic stages and the mechanism of action of a particular drug.
* Basic knowledge on medication used in respiratory, cardiovascular and osteoarticular diseases.
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| Date12.09.2024 | Holder of course / signature, | Holder of practical activities / signature, |
|  | Associate Professor Cristina Gavrilescu, MD, PhD | Associate Professor Cristina Gavrilescu, MD, PhD |



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| Date of approval in the Department Council/Teaching Council,  |
| 19.09.2024 |  | **Department director / signature,****Associate Professor Daniela-Viorelia Matei, MD, PhD** |
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