**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 |  **Rehabilitation in Cardiovascular pathology** | **RE1302** |
| 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 | **III** | 2.5. Semester | **1** | 2.6. The type of assessment | **Exam, E1** |
| 2.7. Discipline type | **Mandatory** | **Specialty 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 | **2** | **1** | **1** |
| Semester 2 |  |  |  |
| 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 | 10 |  |
| Supplementary documentation in the library, using specialised platforms via internet and by field work | 5 |  |
| Preparation time for seminars / practical classes, study themes, reviews, portfolio and essays | 5 |  |
| Tutorship | 2 |  |
| Examinations | 2 |  |
| Other activities | 2 |  |
| 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 | Explorations and evaluation methods in medical recovery, Internal medicine elements |
| 4.2. of competences | - Knowledge of methods, techniques of paraclinic exploration for evaluation of the degree of integration, adaptation of human biosystem in diverse circumstances. - Knowledge of physiological and physiopathological mechanisms of the main medical conditions, especially the cardiovascular ones, and their identification for the use of adequate cardiovascular rehabilitation treatment.  |

5. **Conditions (where applicable)**

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| 5.1. for lectures | Video logistical support |
| 5.2. for seminars / practical classes | Appropriate equipment (protective clothing, masque) |

**6. Specific competences acquired**

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| **Professional competencies** | **C 1.3** | * Use of adequate parameters of techniques requires for increase of articular mobility, muscle force, coordination, equilibrium, improvement of some modified paramters (cardiovascular, respiratory, neuromuscular etc.)
* Implementation of new massage protocols
* Implementation of electrotherapy, photoptherapy, magnetotherapy, ultrasonotherapy procedures; use of paramenters and of schedule of sessions adapted to pathology and region
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| **C 3.1** | * Use of adequate parameters in all forms of electrotherapy, considering analgesic, muscle relaxing effects or the muscle intensity contraction according to applied procedure
* Implementation of different strategy for elaboration of new protocols of electrotherapy
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| **Transversal****competencies** | **CT1** | . Identification of objectives, available resources, finalization conditions, stages of implementation, meeting end-lines and associated risks. * Identification of roles and responsibilities in a multidisciplinary team and implementation of efficient social relationships within the team and along with the patient.
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7**.** **Objectives of the study discipline (according to the grid of specific competences acquired)**

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| 7.1. General objective | * Explanation of cardiovascular and respiratory diseases and syndromes, kinetotherapy programs, hydrothermotherapy, electrotherapy, methods of functional evaluation according to region and type of pathology
* Identification of main sign and symptoms of cardiovascular disease, evaluation of a patient before and after cardiovascular and respiratory rehabilitation, participation in some investigations.
* Interpretation of some functional investigations.
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| 7.2. Specific objectives | - Evaluations and integration of kinetotherapy, hydrothermotherapy, electrotherapy procedures and implementation of adequate scores for initial evaluation and assessment of functional cardiovascular and respiratory deficit, to improve the quality of life and evaluation of socio-professional independence after applied therapy.  |

**8. Contents**

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| **8.1. Lectures** | **Teaching methods** | **Observations** |
| 1 | Cardiovascular recovery- introduction, definition, history, applications. The structure of a cardiovascular recovery program.Natural therapeutic factors in cardiovascular recovery. Effort training – its effects upon effort capacity and cardiac function | Video projection, interactive discussion |  2 hours |
| 2 | Effort testing of a coronary affected patients – significance, indications, methodology, contraindications, incidentsBalneofiziokinetotherapy and recovery in ischemic heart disease | Video projection, interactive discussion | 2 hours |
| 3 | Balneofiziokinetotherapy and recovery in arterial hypertension. | Video projection, interactive discussion | 2 hours |
| 4 | Balneofiziokinetotherapy and recovery in valvular heart diseases and arrhythmia.  | Video projection, interactive discussion | 2 hours |
| 5 | Balneofiziokinetotherapy and recovery in heart failure | Video projection, interactive discussion | 2 hours |
| 6 | Balneofiziokinetotherapy and recovery in peripheral arteriopathies and in venous diseases. | Video projection, interactive discussion |  2 hours |
| 7 | Balneofiziokinetotherapy and recovery after cardiac surgery | Video projection, interactive discussion | 2 hours |

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| **8.2. Practical activities - practical class**  | **Teaching methods** | **Observations** |
| 1 | Introductive notions about cardiovascular system. The effects of balneophysiokinetotherapy on heart | Discussions, study case presentations, practical demonstrations, practical applications | 2 hours  |
| 2 | Structure of a cardiovascular recovery program. Structure of a cardiovascular recovery base, equipment, personnel.Natural and physical therapeutic factors in cardiovascular recovery. Effort training – its effects upon effort capacity and cardiac function. Effort testing in coronary disease– testing conditions, necessary equipment, methodology, incidents, conditions for test cessation | Discussions, study case presentations, practical demonstrations, practical applications | 2 hours |
| 3 | Kinetotherapy in ischemic heart disease and in heart failure. | Discussions, case presentations, practical, practical applications | 2 hours |
| 4 | Kinetotherapy in arterial hypertension | Discussions, case presentations, practical, practical applications | 2 hours |
| 5 | Kinetotherapy in vavular heart disease and in arrhythmia | Discussions, case presentations, practical, practical applications | 2 hours |
| 6 | Kinetotherapy and recovery in peripheral arteriopathies and in venous diseases | Discussions, case presentations, practical, practical applications | 2 hours |
| 7 | Balneofiziokinetotherapy before and after surgery. Kinetotherapy after heart transplant and after myocardial revascularization. | Discussions, case presentations, practical, practical applications | 2 hours |

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| **8.3. Bibliography:** |
| ***Mandatory:*** |
| 1. Joseph Niebauer. Cardiac Rehabilitation Manual 2013 Edition.
2. 2016 European Guidelines on cardiovascular disease prevention in clinical practice The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts).
3. Lecture notes, PPT.
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| ***Elective:*** |
| 1. Anderson L, Thompson DR, Oldridge N, et al Exercise-based cardiac rehabilitation for coronary heart disease. Cochrane Database Syst Rev. 2016 Jan 5;2016(1).
2. Price KJ, Gordon BA, Bird SR, Benson AC. A review of guidelines for cardiac rehabilitation exercise programmes: Eur J Prev Cardiol. 2016 Nov;23(16):1715-1733.
3. 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.
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**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:* Cardiovascular assessment of a patient
* Application of adequate scores for initial evaluation of cardiac functional deficit
* Improvement of quality of life and evaluation of acquired socio-professional independence after therapy
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| Date05.09.2023 | 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,  |
| 14.09.2023 |  | Department director / signature, |
|  |  | Associate Professor Daniela-Viorelia Matei, MD, PhD |