**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 | **Kinesiology** | **RE1107** |
| 2.2. Teaching staff in charge with lectures | **Lecturer Cătălin Ionițe, PhD**  |
| 2.3. Teaching staff in charge with practical activities | **Lecturer Cătălin Ionițe, PhD** |
| 2.4. Year of study | **I** | 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 | **3** | **1,5** | **1,5** |
| Semester 2 |  |  |  |
| 3.4. Total number of learning hours: | **42** | 3.5. Of which: Courses | **21** | 3.6. Of which: Seminars / practical classes: | **21** |
| 3.7. Distribution of individual study time: | Hours sem. 1 | Hours sem. 2 |
| Study time using course book materials, bibliography and hand notes | 40 |  |
| Supplementary documentation in the library, using specialised platforms via internet and by field work | 10 |  |
| Preparation time for seminars / practical classes, study themes, reviews, portfolio and essays | 13 |  |
| Tutorship | 4 |  |
| Examinations | 4 |  |
| Other activities | 20 |  |
| Total hours of individual study (*without examinations*) | **83** |  |
| 3.8. Total hours per semester | **125** |  |
| 3.9. Number of credits | **5** |  |

**4. Preconditions (where applicable)**

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| 4.1. of curriculum | - |
| 4.2. of competences | - |

5. **Conditions (where applicable)**

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| 5.1. for lectures | Hall, desks, video projector |
| 5.2. for seminars / practical classes | Room, massage tables, medical recovery items (elastic bands, weights, medicine balls, dumbbells, trellises, etc.).Students are also required to have a medical suit and medical slippers. |

**6. Specific competences acquired**

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| **Professional competencies** | **C 1.3** | Construction and application of kinetotherapy, programs related to the functional diagnosis and according to the physician's indications, also performing out secondary prophylaxis. |
| **C 1.4** | Use of adequate exercises, parameters in the techniques to increase articular mobility, muscle force, coordination, balance. |
| **C2.2** | The use of appropriate parameters in the techniques of increasing joint mobility, muscle strength, coordination and balance, in improving some modified parameters (cardiovascular, respiratory, neuromuscular, etc.). |
| **C 2.4** | The development of adequate scores for assessing the reduction of the functional deficit and socio-professional independence |

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

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| 7.1. General objective | Accumulation of knowledge related to the theoretical and methodical bases of kinetotherapy. |
| 7.2. Specific objectives | Development of certain field specific programs and correlations with the results from related fields. |

**8. Contents**

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| **8.1. Lectures** | **Teaching methods** | **Observations** |
| 1 | Explanation of the concept of kinesiology, definition, classification, principles | Verbal methods: explanation Intuitive methods: PowerPoint, video, observation. | 2 h |
| 2 | Fundamentals structure and motion of the human body. (Parts of human body, Mapping the human body) | 2 h |
| 3 | Skeletal arthrology: Study of the joints (Joint action terminology, classification, joints of the axial body, joints of the lower and upper extremity) | 2 h |
| 4 | Myology: study of the muscular system (Anatomy and physiology of the muscle tissue, how muscle function, type of contractions, roles of the muscle) | 2 h |
| 5 | How to determinate the force of a muscle contraction and the implication of the skeletal muscle. | 2 h |
| 6 | Types of joint motion and musculoskeletal assessment (active versus pasive range of motion, resisted motion, muscle palpation) | 2 h |
| 7 | The Neuromuscular system (Voluntary movement vs reflex movement, overview of proprioception, joint proprioceptors, muscle spindles, golgi tendon organs, inner ear proprioceptors, other musculoskeletal reflexes. | 2 h |
| 8 | Posture and the gait cycle ( importance of ”good posture” ideal standing, analyzing the postural line, gait cycle, muscular activity during the gait) | 2 h |
| 9 | Principles of exercise (reasons for exercise, types of exercise, type of resistance, execution of exercise) | 2 h |
| 10 | Exercise technique Stretching (introduction, basic stretching techniques: static and dinamic, advance stretching techniques) | 3 h |

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| **8.2. Practical activities - practical class**  | **Teaching methods** | **Observations** |
| 1 | Practical session introducing the human body, mapping the human body. | Verbal methods: ExplenationIntuitive methods: power point, video, observation.Practical methods: performance of techniques, performance of techniques in a group of students, etc | 2 h |
| 2 | Practical session drawing the limits of each part of the body. | 2 h |
| 3 | Practical session to understand the planes and axes around which the movement is made, as well as the possibilities of movement in each joint. | 2 h |
| 4 | Practical exercise session specific to the types of contractions, how to activate the muscle fiber, avoiding adaptation to effort | 2 h |
| 5 | Practical sesion of the fundamental and derived positions used in physical therapy as well as their use depending on the strength of contraction. | 2 h |
| 6 | Practical session of performing passive mobilizations (spine, upper limb and lower limb) and comparing range of motion with active mobilization | 5 h |
| 7 | Practical session to evaluate the posture and highlight the differences from the reference values, as well as the gait evaluation and highlight the differences from the reference values. | 2 h |
| 8 | Practical session of building physical exercises in different fundamental and derived positions | 2 h |
| 9 | Practical session of static and dynamic stretching, awareness of the effect and the differences between them | 2 h |

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| **8.3. Bibliography:** |
| ***Mandatory:***Course materials and practical works posted on the e-learning platform of UMF Iasi1. Klaus Buckup, Johannes Backup. Clinical Tests for the Musculoskeletal system. Examination-Signs-Phenomena. Thieme Publisher Stuttgart, Germany, 2016 ISBN 9783131367938
2. Albert I. King. The biomechanics of impact injury. Biomechanical response, mechanisms of injury, human tolerance and simulation. Springer International Publishing AG 2018 ISBN 978-3-319-49792-1
3. Mansfield Neumann. Essentials of kinesiology for the physical therapist assistant. Elsevier INC, St. Louis Missouri, 2014 ISBN: 978-0-323-08944-9
4. David G. Behm. The science and physiology of flexibility and stretching. Implications and applications in sport performance and health. Routledge. Taylor & Francis Group. NY. 2019. ISBN 978-1-315-11074-5
5. Shaun Philips. Fatigue in sport and exercise. Taylor & Francis Group. NY. 2015. ISBN 978-1-315-81485-8
6. Rotariu Mariana, Ionite Andrei-Cătălin. Movements of the spine correlations between landmarks and effectors. Editura Discobolul, București, 2018 ISBN: 978-606-798-060
 |
| ***Elective:*** |
| 1. Derek Hasen, Steve Kennelly. Plyometric anatomy. Human Kinetics. USA. 2017. ISBN: 978-1-4925-3349-8 James Watkins. Biomecanics. Laboratory and field excercises in sport and exercise. Routledge Taylor & Francis Group. 2018. ISBN 978-1-315-30631-5
2. Kazuyuki Kanosue et all. Physical activity exercise, sedentary behavior and health. Springer. Japan. 2015 ISBN 978-4-431-55333-5
3. Terry J. Housh et all. Introduction to exercise science. Fifth edition. Routledge Taylor & Francis Group. 2018. ISBN 978-1-315-17767-0
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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:* Knowledge of fundamental and derived positions
* Knowledge of the planes and axes around which the movement is made
* Knowledge of the types of joints
* Knowing the types of muscle contraction
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| Date | Holder of course / signature, | Holder of practical activities / signature, |
| 12.09.2024 | Lecturer Cătălin Ionițe, PhD  | Lecturer Cătălin Ionițe, PhD |

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