**ACADEMIC DISCIPLINE OVERVIEW**

1. **Program data**

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| **1.1.** | **GRIGORE T. POPA UNIVERSITY OF MEDICINE AND PHARMACY IASI** |
| **1.2.**  | **FACULTY OF MEDICAL BIOENGINEERING**  |
| **1.3.** | **PROGRAMME:** Physio-kinetotherapy and rehabilitation |
| **1.4.**  | **STUDY FIELD:** Health |
| **1.5.** | **STUDY CYCLE**: UNDERGRADUATE |
| **1.6.** | **STUDY PROGRAMME:** INENGLISH |
| 1. **Subject data**
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| **2.1.** | **Subject: Rehabilitation in traumatic orthopedic diseases RE 1218** |
| **2.2.** | **Module leader:** Associate professor Mariana Rotariu, Ph-D |
| **2.3.** | **Seminar leader:** Assist drd Ionita Catalin |
| **2.4. Year of study** | **II** | **2.5. Semester in which is taught** | **II** | **2.6. Evaluation type** | Exam | **2.7. Subject status** | Mandatory/D.S. |

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

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| **3.1.Number of hours / week** | 3 | **3.2. Courses number of hours / week** | 1 | **3.3. practical classes/ clinical training** | 2 |
| **3.4. Total number of learning hours** | 42 | **3.5. Courses** | 14 | **3.6. practical classes/ clinical training** | 28 |
| **3.7. Distribution of the available time** | Hours |
| **Study based on the manual, lecture support, bibliography and hand notes** | 10 |
| **Supplementary documentation in the library, using specialized platforms via internet and by field work** | 8 |
| **Preparation for seminars / practical classes, study themes, reviews, portfolio, and essays** | 15 |
| **Tutorship** | 2 |
| **Examinations** | 4 |
| **Other activities**  |  |
| **3.8. Total hours of individual study** | 33 |
| **3.9. Total hours pes semester** | 75 |
| **3.10. Number of credits** | 3 |

1. **Preconditions (where applicable)**

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| **4.1.** of curriculum | Anatomy, Physiology, Physiopathology, Radiology, Orthotic techniques |
| **4.2.** of competences | To know the macroscopic and microscopic structure of organs and systems of the body. To know the functionality of the specific medical apparatus and devices. To know the way of applying the orthoses, prostheses or other medical devices. Ability to create and design devices for facilitating and verifying the joint functionality. |

1. **Conditions (where applicable)**

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| **5.1.** for lectures | Video logistic support |
| **5.2.** for seminars / practical classes | The students will have the appropriate equipment |

1. **Specific competences acquired**

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| Professional competences (expressed as knowledge and abilities) | C1.2 Key knowledge in order to explain the traumatic orthopaedic syndromes and / or diseasesC1.3 To apply the kinesiotherapy programs related to the functional diagnosis and according to the physician’s indications, also performing the secondary prophylaxisC1.4 To use the appropriate parameters in the techniques of increasing the mobility of joint, muscle strength, coordination, balance, for the improvement of the modified parameters (cardiovascular, respiratory, neuromuscular etc.)C1.5 To develop and implement new kinesiotherapy protocolsC2.1 To define the general and local effects of the medical massage, to describe the main massage techniques for different body regions, with their indications and contraindications C2.2 The basic knowledge for explaining and interpreting the opportunity of some kinesiotherapy programs adapted to the treated area and type of pathology C2.3 To apply the massage programs related to the treated pathology and regionC2.4 To analyze the use of intensity and duration parameters of the massage techniques adapted to pathology, assessing the muscle tone, painful sensitivity, before and after massage.C2.5 To implement new massage protocols C3.1 To identify the physiological mechanisms of thermoregulation, the effects of thermal factors on the systems of the human body; to identify the hydrothermal therapy techniques (HTT) with indications, contraindications and precautions.C3.2 Knowledge on the procedures of hydrothermal therapy for the correct choice of a therapy strategy C3.3 To assess and integrate the procedures of hydrothermal therapy in the therapeutic program, according to the type of pathology and objectives.C3.4 To assess the proper parameters in the application of all forms of hydrothermal therapy, establishing the opportunity and associations between procedures.C3.5 To develop and build new HTT protocols.C4.3 To apply the procedures of electrotherapy, phototherapy, magnetotherapy, ultrasound therapy; to use the parameters and a timetable of the applications adapted to the treated pathology and area. C4.4 To use the proper parameters in all forms of electrotherapy, assessing the analgesic, muscle relaxant effects or intensity of the muscle contraction depending on the procedure appliedC4.5 To implement the various strategies to develop some new protocols of electrotherapy |
| Transverse competences (of role, of professional development, personal) | To identify the objectives to be achieved, the resources available, conditions for their completion, work stages, working time, related timescales for achievement and related risksTo identify the roles and responsibilities in a multidisciplinary team and to apply the techniques of networking and effective work within the team and in relation with the patient |

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

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| **7.1.** General objective | To gain knowledge and general and specialized skills in the field of orthopedics and traumatology, of physical recovery for various orthopedic-traumatic disorders, which allow the understanding and familiarizing with professional activities carried out in the field. |
| **7.2.** Specific objectives | To acquire knowledge and skills for taking over and interpreting information in the orthopedic-traumatic field (clinical data, physiological parameters, pathological particularities etc.)The ability of synthesis of some information in the orthopedic-traumatic field and its related fields in order to establish various programs, processes and methods of recovery specific to each pathological situation;To acquire knowledge and skills for handling prostheses and medical devices used for the recovery of patients with orthopedic conditions;To develop the ability to communicate and exchange ideas with experts in the field of bioengineering, orthopedics and related areas in order to support, make decisions and put into practice some principles and ideas in the field of recovery;To acquire the skills necessary to work within a recovery service for patients with orthopedic-traumatic disorders. |

1. **Contents**

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| **8.1. Lecture** | **Teaching methods** | **Observations** |
| Functional re-education - general; Place and how to conduct the re-education; Means of functional re-education; Examination of the patient - Methods of examination; Walking; Notions of physiotherapy; | Powerpoint presentations, interactive courses | 2 hours |
| Functional re-education in the traumatology of the upper limb - Functional recovery of the shoulder; Posttraumatic elbow; Posttraumatic hand;Functional recovery in the traumatology of the lower limb - Posttraumatic hip; | Powerpoint presentations, interactive courses | 2 hours |
| Functional recovery in the traumatology of the lower limb - Recovery of the posttraumatic knee;Functional recovery of the posttraumatic foot - Combating the pain; Restoring the muscle balance; Restoring the joint mobility; Restoring the vault planting; Restoring the alignment of the leg; | Powerpoint presentations, interactive courses | 2 hours |
| Functional recovery in the traumatology of the vertebral column - Notions of biomechanics; Treatment;Functional recovery in the musculoskeletal injuries - Muscle rupture; Achilles tendon rupture; | Powerpoint presentations, interactive courses | 2 hours |
| Traumatic meniscal tears - Pathological anatomy; Mechanism of production; Symptoms and diagnosis; Traumatic meniscal tears – Imaging; Treatment; | Powerpoint presentations, interactive courses | 2 hours |
| Recovery treatment of algoneurodystrophy - Symptoms; Treatment;Functional re-education after the hip arthroplasty - Simple prostheses (cervico - cephalic); Intermediate bipolar prostheses; | Powerpoint presentations, interactive courses | 2 hours |
| Functional re-education after the hip arthroplasty - Total hip prosthesis; Functional recovery after hip osteotomies;Static disorders of the foot - Plat foot; Cavoid foot; | Powerpoint presentations, interactive courses | 2 hours |
| **Bibliography****mandatory**1. Substituentii de os in tratamentul defectelor osoase (*Bone substitutes in the treatment of bone defects*) Authors : R. Mihaila, H. Redl, D. Antonescu, N. Schwarz, P. Sirbu, Venus Publishing House, Iasi 2006
2. Tehnici avansate și biomateriale în ortopedie. (*Advanced techniques and biometarials in orthopaedics*) Authors: Paul Botez, Paul Dan Sîrbu, Luminiţa Simion, Florin Munteanu, Tudor Petreuș. E “Gr. T. Popa”, U.M.F Iași Publishing House, 2008
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| **8.2. Seminar / practical classes** | **Teaching methods** | **Observations** |
| Lp 1: Presentation of the service of orthopaedic-traumatology, the division into beds; | Practical activities | 2 hours |
| Lp 2: Anamnesis and clinical examination in bed; paraclinical examinations; | Practical activities | 2 hours |
| Lp 3: Functional recovery of the posttraumatic shoulder and elbow; | Practical activities | 2 hours |
| Lp 4: Functional recovery of the posttraumatic hand; | Practical activities | 2 hours |
| Lp 5: Functional recovery of the posttraumatic hip; | Practical activities | 2 hours |
| Lp 6: Functional recovery of the posttraumatic knee; | Practical activities | 2 hours |
| Lp 7: Functional recovery of the posttraumatic foot; | Practical activities | 2 hours |
| Lp 8: Recovery management in the traumatology of the vertebral column; | Practical activities | 2 hours |
| Lp 9: Functional recovery in the muscle rupture; rupture of Achilles tendon; | Practical activities | 2 hours |
| Lp 10: Kinesiotherapy of patients with traumatic meniscal tears;  | Practical activities | 2 hours |
| Lp 11: Recovery management of the algoneurodystrophic patient; | Practical activities | 2 hours |
| Lp 12: Kinesiotherapy of patients with static disorders of the foot; | Practical activities | 2 hours |
| Lp 13: Principles of using the medical devices in the recovery and kinesiotherapy of patient with orthopaedic-traumatic disorders; | Practical activities | 2 hours |
| Lp 14: Principles of using the prostheses in the recovery and kinesiotherapy of patient with orthopaedic-traumatic disorders; | Practical activities | 2 hours |
| **Bibliography****mandatory**1. Substituentii de os in tratamentul defectelor osoase (Bone substitutes in the treatment of bone defects) Authors : R. Mihaila, H. Redl, D. Antonescu, N. Schwarz, P. Sirbu, Venus Publishing House, Iasi 2006
2. Tehnici avansate și biomateriale în ortopedie. (Advanced techniques and biometarials in orthopaedics) Authors: Paul Botez, Paul Dan Sîrbu, Luminiţa Simion, Florin Munteanu, Tudor Petreuș. E “Gr. T. Popa”, U.M.F Iași Publishing House, 2008
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1. **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. |

1. **Evaluation**

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| **Type of activity** | **Type of activity** | **Evaluation methods** | **Contribution to the final grade** |
| **Lecture** | Course theme | Written exam | 50% |
| **Seminar/practical classes** | Theme of the practical works | Oral exam practical activity | 40% |
| Activity throughout the semester | Tests | 10% |
| **Minimal performance standard:** To demonstrate that he / she is able to develop a therapeutic intervention plan based on a clinical / functional diagnosisMinimum passing condition: To present and use the medical devices for the diagnosis and treatment of the pathologies studied |

**Date of completion: Signature of head of discipline**

25.09.2019 Associate professor Mariana Rotariu, Ph-D

**Department approval date**

30.09.2019

 **Signature of department director**

Lecturer Daniela-Viorelia Matei, Ph-D