**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: PHYSIOPATHOLOGY RE1113** |
| **2.2.** | **Module leader: Lecturer Roxana Covali PhD** |
| **2.3.** | **Seminar leader: Lecturer Roxana Covali PhD** |
| **2.4. Year of study** | **1st** | **2.5. Semester in which is taught** | **2nd** | **2.6. Evaluation type** | Exam | **2.7. Subject status** | Mandatory  |

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

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| **3.1.Number of hours / week** | 2 | **3.2. Courses number of hours / week** | 1 | **3.3.Seminar / l practical classes** | 1 |
| **3.4. Total number of learning hours** | 28 | **3.5. Courses** | 14 | **3.6. Seminar / practical classes** | 14 |
| **3.7. Distribution of the available time** | Hours |
| **Study based on the manual, lecture support, bibliography and hand notes** | 6 |
| **Supplementary documentation in the library, using specialised platforms via internet and by field work** | 10 |
| **Preparation for seminars / practical classes, study themes, reviews, portofolio, and essays** | 4 |
| **Tutorship** | 2 |
| **Examinations** | 4 |
| **Other activities** | 2 |
| **3.8. Total hours of individual study** | 22 |
| **3.9. Total hours pes semester** | 50 |
| **3.10. Number of credits** | 2 |

1. **Preconditions (where applicable)**

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| **4.1.** of curriculum | Anatomy, Physiology |
| **4.2.** of competences | Knowledge of communication means between basic units of living matter and extracellular environment |

1. **Conditions (where applicable)**

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| **5.1.** for lectures | Projector |
| **5.2.** for seminars / practical classes | Studențs will wear protection equipement (white coat) |

1. **Specific competences acquired**

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| Professional competences (expressed as knowledge and abilities) | C1.1 Description of concepts, theories and basic notions for physiological and pathological mechanisms of the human body, recognition of symptoms and clinical signs- Interpretation of altered blood and biochemical values in various diseases- Capacity of selection of the adequate tests in order to determine certain diseases C1.2 Formulation of hypotheses and operationalize of key concepts in order to explain syndromes and /or diseases- Evaluation and selection of the best methods to determine physiological constants specific to every patient |
| Transverse competences (of role, of professional development, personal) | Identifying roles and responsabilities in a multidisciplinary team.Application of relationship techniques. Efficiency in teamwork and in patient relationship |

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

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| **7.1.** General objective | To make students accustomed to changes in the function of different organs and systems due to various diseases |  |
| **7.2.** Specific objectives | To understand the reason of alteration in function of different organs and systems of the body, and to be aware of the possible evolution of these alterations |  |

1. **Contents**

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| **8.1. Lecture** | **Teaching methods** | **Observations** |
| 1. Physiopathology of cell alteration: necrosis, steatosis, atrophy, amiloid degeneration, calcifications | Interactive lecture, discussions, explanations | 2h |
| 2. Physiopathology of inflammation: hyperhaemia, exsudation, white cell migration, chronic inflammation, organising | Interactive lecture, discussions, explanations | 2h |
| 3. Physiopathology of acute infections: body protective barrier, bacteraemia, septicemia. Physiopathology of chronic infection: cell alterations indiced by bacteria and viruses | Interactive lecture, discussions, explanations | 2h |
| 4. Physiopathology of the compact bone. Physiopathology of the cancellous bone. Physiopathology of ligaments and tendons | Interactive lecture, discussions, explanations | 2h |
| 5. Physiopathology of the skeletal muscle and cardiac muscle. Physiopathology of circulatory changes: thrombosis, embolism, infarction | Interactive lecture, discussions, explanations | 2h |
| 6. Physiopathology of the peripheral nerves. Physiopathology of healing in: striated muscles, peripheral nerves, central nervous system neurons, bones, fractures | Interactive lecture, discussions, explanations | 2h |
| 7. Physiopathology of physical effort | Interactive lecture, discussions, explanations | 2h |
| **Bibliography****Mandatory**1.Boto A, Costa J (2016): Soft Tissue and Bone Pathology. Jaypee Medical Publishers, 152 pages2.Huether S, McCance KL (2017): Undestanding Pathophysiology. Mosby, 6th Edition, 1160 pages3.Kumar V, Abbas AK, Aster JC (2015): Robbins Patologie. Bazele morfologice si fiziopatologice ale bolilor, Editura Medicală Callisto, 960 pages4.Lakhani S, Finlayson C, Dilly S, Gandhi M (2016): Basic Pathology: An Introduction to the Mechanisms of Disease, CRC Press, 5th Edition, 382 pages5.Mitchell R, Kumar V, Abbas AK, Aster JC (2017):Pocket Companion to Robbins& Coltran Pathologic Basis of Disease, Elsevier, 9th Edition6.Mohan H (2016): Practical Pathology. Jaypee Medical Publishers, 4th Edition, 282 pages7.Silbernagl S, Lang F (2011):Fiziopatologie, Editura Medicală Callisto, 448 pages |
| **8.2. Seminar / practical classes** | **Teaching methods** | **Observations** |
| 1.Physiopathology of the cardiovascular system: alteration of the complete blood count, alteration of the ECG  | Case solvings, explanations | 2h |
| 2. Physiopathology of the protidic, carbohydrate, lipidic metabolism: alteration of specific tests and of blood tests | Case solvings, explanations | 2h |
| 3.Compact bone: specific structure and vulnerability | Case solvings, explanations | 2h |
| 4.Cancellous bone: specific structure and vulnerability | Case solvings, explanations | 2h |
| 5. Skeletal and cardiac muscle: specific structure and vulnerability | Case solvings, explanations | 2h |
| 6. Ligaments and tendons: specific structure and vulnerability | Case solvings, explanations | 2h |
| 7. Peripheral nerves: specific structure and vulnerabilityPhysical effort: biological limits | Case solvings, explanations | 2h |
| **Bibliography****Mandatory**1.Boto A, Costa J (2016): Soft Tissue and Bone Pathology. Jaypee Medical Publishers, 152 pages2.Huether S, McCance KL (2017): Undestanding Pathophysiology. Mosby, 6th Edition, 1160 pages3.Kumar V, Abbas AK, Aster JC (2015): Robbins Patologie. Bazele morfologice si fiziopatologice ale bolilor, Editura Medicală Callisto, 960 pages4.Lakhani S, Finlayson C, Dilly S, Gandhi M (2016): Basic Pathology: An Introduction to the Mechanisms of Disease, CRC Press, 5th Edition, 382 pages5.Mitchell R, Kumar V, Abbas AK, Aster JC (2017):Pocket Companion to Robbins& Coltran Pathologic Basis of Disease, Elsevier, 9th Edition6.Mohan H (2016): Practical Pathology. Jaypee Medical Publishers, 4th Edition, 282 pages7.Silbernagl S, Lang F (2011):Fiziopatologie, Editura Medicală Callisto, 448 pages |

**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** | **Type of activity** | **Evaluation methods** | **Contribution to the final grade** |
| **Lecture** | Acquiring theoretical aspects and concepts presented in the course | Written exam | 50% |
| **Seminar/practical classes** | Practical works topics | Colloquium for practical work | 40% |
| Activity during the semester |  | 10% |
| **Minimal performance standard:****- Knowing the forces classes and basic notions for physiopathological mechanisms of the human body** |

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

25.09.2019 Lecturer Ana-Roxana Covali PhD

**Department approval date**

30.09.2019 **Signature of department director**

Lecturer Daniela-Viorelia Matei, PhD