**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** | | | | | | | | |
| **2.1.** | **Subject: Radiology and medical imaging** | | | | | | | |
| **2.2.** | **Module leader:** Lecturer Roxana Covali MD, Ph-D | | | | | | | |
| **2.3.** | **Seminar leader:** Lecturer Roxana Covali MD, Ph-D | | | | | | | |
| **2.4. Year of study** | | **2nd** | **2.5. Semester in which is taught** | **II** | **2.6. Evaluation type** | colloquium | **2.7. Subject status** | Mandatory/D.D. |

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. practical classes/ clinical training** | 1 |
| **3.4. Total number of learning hours** | 28 | **3.5. Courses** | 14 | **3.6. practical classes/ clinical training** | 14 |
| **3.7. Distribution of the available time** | | | | | Hours |
| **Study based on the manual, lecture support, bibliography and hand notes** | | | | | 12 |
| **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** | | | | | 2 |
| **Tutorship** | | | | | 2 |
| **Examinations** | | | | | 4 |
| **Other activities (clinical training)** | | | | | - |
| **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, Biophysics |
| **4.2.** of competences | Knowledge of the communication means between basic units of living matter and the extracellular environment, and of the physical phenomena at the basis of living world |

1. **Conditions (where applicable)**

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| **5.1.** for lectures | Video projecting equipment |
| **5.2.** for seminars / practical classes | Radiology diagnosis equipment, negatoscope |

1. **Specific competences acquired**

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| Professional competences (expressed as knowledge and abilities) | C1.2  Formulation of hypothesis and key concepts in order to explain syndromes /diseases  C5.2  Use of basic knowledge for choosing the appropriate means and methods to assess the cell/organ function in different pathologies |
| 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 different imaging modalities of exploring normal or pathological body structures |
| **7.2.** Specific objectives | To make students accustomed to different imaging modalities of exploring normal or pathological body structures . To make students aware of advantages and disadvantages of every imaging method and the best way to use it |

1. **Contents**

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| **8.1. Lecture** | **Teaching methods** | **Observations** |
| C1. Radiology and imaging of the respiratory system  1.1 Trachea  1.2 Bronchus  1.3 Lung  1.4 Pleura | Statement, questioning, noticing, interactive discussion, explanation. | 2 h |
| C2. Radiology and imaging of the cardiovascular system  2.1 Heart  2.2 Large blood vessels | Statement, questioning, noticing, interactive discussion, explanation. | 2 h |
| C3. Radiology and imaging of the digestive system  3.1 Stomac  3.2 Small and large bowel  3.3 Liver, gallbladder  3.4 Pancreas | Statement, questioning, noticing, interactive discussion, explanation. | 2 h |
| C4. Radiology and imaging of the excretory system  4.1 Kidney  4.2 Urinary bladder | Statement, questioning, noticing, interactive discussion, explanation. | 2 h |
| C5. Radiology and imaging of the reproductive system in male and female  5.1 Testis  5.2 Ovary  5.3 Uterus  5.4 Breast | Statement, questioning, noticing, interactive discussion, explanation. | 2 h |
| C6. Radiology and imaging of the nervous system  6.1 Brain  6.2 Spinal cord | Statement, questioning, noticing, interactive discussion, explanation. | 2 h |
| C7.Radiology and imaging of the musculoskeletal system  7.1 Muscles and ligaments  7.2 Bone | Statement, questioning, noticing, interactive discussion, explanation. | 2 h |
| **Bibliography**  1.Corne J, Kumaran M (2016): Chest X-Ray Made Easy, Elsevier, 4th Edition, 184 pages  2.Covali R (2017): Practical Textbook of Radiology, Stef Publishing House, Iasi  3.Dahnert W (2017): Radiology Review Manual, Lippincott Williams &Wilkins, 8th Edition, 1552 pages  4.Grainger A, O’Connor PJ (2016): Grainger &Allison’s Diagnostic Radiology: Musculoskeletal System, Elsevier, 6th Edition  5.Herring W (2016): Learning Radiology, Elsevier, 3rd Edition, 352 pages  6.Manaster BJ, Crim J (2016): Imaging Anatomy:Musculoskeletal, Amyrsis, 2nd Edition, 1192 pages  7.Ross JS (2016): Diagnostic Imaging: Spine, Amyrsis, 3rd Edition, 1100 pages | | |
| **8.2. Seminar / practical classes** | **Teaching methods** | **Observations** |
| 1.Radiology and imaging of the respiratory system:  1.1 Thoracic X-ray  1.2 Thoracic computed body tomography | -Radiograms owned by dr. Covali  -CT scans owned by dr. Covali  -Conventional radiology and CT textbooks  -image interpretation and interactive discussions | 2 h |
| 2.Radiology and imaging of the cardiovascular system  2.1 Thoracic X-ray  2.2 Thoracic computed body tomography  2.3 Color Doppler ultrasound examination of the large vessels | -Radiograms owned by dr. Covali  -CT scans owned by dr. Covali  -Conventional radiology and CT textbooks  -image interpretation and interactive discussions | 2 h |
| 3.Radiology and imaging of the digestive system  3.1 Plain abdominal film  3.2 Barium enema  3.3 Ultrasonographic examination of the liver, gallbladder and pancreas  3.4Abdominal computed body tomography | -Radiograms owned by dr. Covali  -CT scans owned by dr. Covali  -Conventional radiology and CT textbooks  -image interpretation and interactive discussions | 2 h |
| 4. Radiology and imaging of the excretory system  4.1 Intravenous urography  4.2 Kidney computed tomography  4.3 Ultrasonographic examination of the kidney | -Radiograms owned by dr. Covali  -CT scans owned by dr. Covali  -Conventional radiology and CT textbooks  -image interpretation and interactive discussions | 2 h |
| 5. Radiology and imaging of the reproductive system in male and female  5.1 Doppler ultrasound examination of the testis  5.2 Pelvic ultrasound examination  5.3 Hysterosalpingography  5.4 Mammography | -Radiograms owned by dr. Covali  -CT scans owned by dr. Covali  -Conventional radiology and CT textbooks  -image interpretation and interactive discussions | 2 h |
| 6. Radiology and imaging of the central nervous system  6.1 Skull X-ray  6.2 Spine X-ray  6.3 Cephalic computed tomography | -Radiograms owned by dr. Covali  -CT scans owned by dr. Covali  -Conventional radiology and CT textbooks  -image interpretation and interactive discussions | 2 h |
| 7. Radiology and imaging of the muskuloskeletal system  7.1 Ultrasonographic examination of the soft tissues  7.2 MRI  7.3 Bone X-ray | -Radiograms owned by dr. Covali  -CT scans owned by dr. Covali  -Conventional radiology and CT textbooks  -image interpretation and interactive discussions | 2 h |
| **Bibliography**  **mandatory**  1.Corne J, Kumaran M (2016): Chest X-Ray Made Easy, Elsevier, 4th Edition, 184 pages  2.Covali R (2017): Practical Textbook of Radiology, Stef Publishing House, Iasi  3.Dahnert W (2017): Radiology Review Manual, Lippincott Williams &Wilkins, 8th Edition, 1552 pages  4.Grainger A, O’Connor PJ (2016): Grainger &Allison’s Diagnostic Radiology: Musculoskeletal System, Elsevier, 6th Edition  5.Herring W (2016): Learning Radiology, Elsevier, 3rd Edition, 352 pages  6.Manaster BJ, Crim J (2016): Imaging Anatomy:Musculoskeletal, Amyrsis, 2nd Edition, 1192 pages  7.Ross JS (2016): Diagnostic Imaging: Spine, Amyrsis, 3rd Edition, 1100 pages | | |

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** | Knowledge of the theoretical notions and aspects presented during the courses | Written examination | 50 % |
| **Seminar/practical classes** | Knowledge of the main imaging methods and their applications in medical diagnosis | Practical work examination | 40 % |
| Mark during the schoolyear | Interactive discussions | 10% |
| **Minimal performance standard:**  Minimal promotion demand: Recognizing of the imaging technique used, of the organ examined and of the lesion, for the following issues:lung cancer, enlarged heart, gastric ulcer, gallstones, kidney stones, skull fracture, vertebral fracture. | | | |

**Date: Signature of head of discipline**

23.09.2019 Lecturer Ana-Roxana Covali, Ph-D

**Department approval date**

30.09.2019

**Signature of department director**

Lecturer Daniela-Viorelia Matei, Ph-D