**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 | **Applied Anatomy of the Locomotor System** | **RE1102** |
| 2.2. Teaching staff in charge with lectures | **Lecturer Laura Adriana Rîșcanu, MD, PhD** |
| 2.3. Teaching staff in charge with practical activities | **Assistant Professor Poroh Manuela, MD, PhD candidate** |
| 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 | **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 | 12 |  |
| 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 | 4 |  |
| Other activities |  |  |
| 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 |  |
| 4.2. of competences |  |

5. **Conditions (where applicable)**

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| 5.1. for lectures | Logistic video support |
| 5.2. for seminars / practical classes | Students will wear protective clothing (lab coat) |

**6. Specific competences acquired**

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| **Professional competencies** | **C1.1** | Description of the structures and shapes of the human locomotor system, recognition of symptoms and clinical signs, identification of physiotherapy methods and techniques. |
| **C1.2** | Understanding disorders and explaining syndromes and/or diseases of the locomotor system through knowledge of the anatomical structures involved |

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

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| 7.1. General objective | 1. Knowledge of the shape and structure of the locomotor system2. To form a biological thinking of future physiotherapists. |
| 7.2. Specific objectives | 1. Knowledge of the functioning of the bone, muscle and joint systems2. Integration of anatomical data into the functional unit and the living organism. |

**8. Contents**

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| 8.1. Lectures | Teaching methods | Observations |
| 1 | Locomotor system -osteology- generalities, classification, structure, physicochemical properties, periosteum | Video logistical supportInteractive lectures, Discussion, Explanations | 2 hours |
| 2 | Locomotor system - arthrology - classification of joints, elements of a mobile joint, active and passive elements; principles of joint biomechanics | Video logistical supportInteractive lectures, Discussion, Explanations | 2 hours |
| 3 | Locomotor system - myology - general notions about muscles, classification of muscles, related connective structures - tendons, aponeuroses, retinacules, muscles at rest and activity, physical properties, muscle contraction, lever systems, functional groups | Video logistical supportInteractive lectures, Discussion, Explanations | 2 hours |
| 4 | Functional organisation of the upper limb, disposition of axial elements, functional substrate of upper limb movements, fascial compartments, neuroarterial compartments of the upper limb | Video logistical supportInteractive lectures, Discussion, Explanations | 2 hours |
| 5 | Functional organisation of the lower limb, disposition of axial elements, functional substrate of lower limb movements, fascial compartments, neuroarterial compartments of the lower limb | Video logistical supportInteractive lectures, Discussion, Explanations | 2 hours |
| 6 | Functional organization of axial skeletal elements, physiological curvatures, anatomical elements participating in the realization of posture Functional organization of trunk walls, skeletal structures, thoraco-abdominal press | Video logistical supportInteractive lectures, Discussion, Explanations | 2 hours |
| 7 | Functional organisation of the head and neck, musculature, vascularisation and innervation of head and neck muscles | Video logistical supportInteractive lectures, Discussion, Explanations | 2 hours |

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| 8.2. Practical activities - practical class  | Teaching methods | Observations |
| 1 | Axial skeleton of the body - vertebral column, general and regional characteristics of vertebrae, sacrum, coccyx, thorax, sternum, ribs, spinal joints | Video logistical supportInteractive lectures, anatomical casts,Discussion, Explanations | 2 hours |
| 2 | Skeleton of the upper limb and shoulder girdle, scapula, clavicle, humerus, radius and ulna, skeleton of the hand, Joints of the upper limb | Video logistical supportInteractive lectures, anatomical casts,Discussion, Explanations | 2 hours |
| 3 | Skeleton of the lower limb and pelvic girdle, coxal, bony pelvis, femur, patella, tibia, fibula, foot sheath, lower limb joints | Video logistical supportInteractive lectures, anatomical casts,Discussion, Explanations | 2 hours |
| 4 | Muscles of the upper limb: insertions, action, fasciae, Vascularisation and innervation of the upper limb | Video logistical supportInteractive lectures, anatomical casts,Discussion, Explanations | 2 hours |
| 5 | Muscles of the lower limb: insertions, action, fasciae, vasculature and innervation of the lower limb | Video logistical supportInteractive lectures, anatomical casts,Discussion, Explanations | 2 hours |
| 6 | Skeleton of the neurocranium and viscerocranium, skull in general | Video logistical supportInteractive lectures, anatomical casts,Discussion, Explanations | 2 hours |
| 7 | Muscles of the trunk, the cephalic and the anterolateral wall of the abdomen, weaknesses in the anterolateral abdominal wall | Video logistical supportInteractive lectures, anatomical casts,Discussion, Explanations | 2 hours |

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| **8.3. Bibliography:** |
| ***Mandatory:*** |
| ***1***.Course notes, e-Learning platform2.Practical work notes, e-Learning platform 3. Abrahams' and McMinn's Clinical Atlas of Human Anatomy, [Peter H. Abrahams](https://www.libristo.ro/ro/autor/Peter%20H.%20Abrahams), [Jonathan D. Spratt](https://www.libristo.ro/ro/autor/Jonathan%20D.%20Spratt), [Marios Loukas](https://www.libristo.ro/ro/autor/Marios%20Loukas), [Albert-Neels van Schoor](https://www.libristo.ro/ro/autor/Albert-Neels%20van%20Schoor), [Ralph T. Hutchings](https://www.libristo.ro/ro/autor/Ralph%20T.%20Hutchings), [Elsevier](https://www.librariadelfin.ro/editura/elsevier--i794) Edit,  2019 4. Atlas of Human Anatomy , 6th Edition, Frank Netter, Saunders **Edit** , 20145. Netter Atlas of Human Anatomy: Classic Regional Approach, 8th Edition, [Elsevier](https://www.libristo.ro/ro/editura/Elsevier) Edit, Frank H. Netter, 04/2022 6. Gray's Anatomy for Students - Richard Drake, A. Wayne Vogl, Adam W. M. Mitchell, [Richard L. Drake](https://www.librariadelfin.ro/autor/richard-l-drake--i12018), [A. Wayne Vogl](https://www.librariadelfin.ro/autor/a-wayne-vogl--i12019), [Adam W. M. Mitchell](https://www.librariadelfin.ro/autor/adam-w-m-mitchell--i12020), [Elsevier](https://www.librariadelfin.ro/editura/elsevier--i794) Edit,  2019 |

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| ***Elective:*** |
| 1. Atlas of Anatomy 2nd Edition, [Anne M Gilroy](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&text=Anne+M+Gilroy&search-alias=books&field-author=Anne+M+Gilroy&sort=relevancerank), [Brian R MacPherson](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_2?ie=UTF8&text=Brian+R+MacPherson&search-alias=books&field-author=Brian+R+MacPherson&sort=relevancerank), [Lawrence M Ross](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_3?ie=UTF8&text=Lawrence+M+Ross&search-alias=books&field-author=Lawrence+M+Ross&sort=relevancerank) [Michael Schuenke](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_4?ie=UTF8&text=Michael+Schuenke&search-alias=books&field-author=Michael+Schuenke&sort=relevancerank) , [Erik Schulte](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_5?ie=UTF8&text=Erik+Schulte&search-alias=books&field-author=Erik+Schulte&sort=relevancerank) , [Udo Schumacher](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_6?ie=UTF8&text=Udo+Schumacher&search-alias=books&field-author=Udo+Schumacher&sort=relevancerank) [Lippincott Williams & Wilkins](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&text=Lippincott+Williams+%26+Wilkins&search-alias=books&field-author=Lippincott+Williams+%26+Wilkins&sort=relevancerank), 2011
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| 1. Clinically oriented anatomy, [Keith L. Moore](https://www.google.ro/search?sa=X&biw=1600&bih=762&q=keith+l+moore&stick=H4sIAAAAAAAAAOPgE-LSz9U3SDaszCi0UOIEsy0M49O0ZLKTrfST8vOz9cuLMktKUvPiy_OLsq0SS0sy8osAnV1yTzcAAAA&ved=0ahUKEwjkmvjEvuTRAhVMNxQKHYRiBoQQmxMIyQEoATAU), Arthur F. Dalley, [Lippincott Williams & Wilkins](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&text=Lippincott+Williams+%26+Wilkins&search-alias=books&field-author=Lippincott+Williams+%26+Wilkins&sort=relevancerank), 2012
2. Gray s anatomy , H.Gray, F.R.S., Running Press, Philadephia, 2021
3. Sobotta Atlas of Anatomy: General Anatomy and Musculoskeletal System, volumul 1, [Friedrich Paulsen, Jens Waschke](https://www.librariadelfin.ro/autor/friedrich-paulsen-jens-waschke--i30384), [Elsevier](https://www.librariadelfin.ro/editura/elsevier--i794) Edit,  2018
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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.Individual study 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:* Recognition of at least 10 anatomical landmarks of the locomotor system, presented in the practical activities.
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| Date | Holder of course / signature, | Holder of practical activities / signature, |
| 11.09.2024 | Lecturer Laura Adriana Rîșcanu, MD, PhD | Assistant Professor Manuela Poroh, MD, PhD candidate |

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