**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: Anatomy /RE1110** |
| **2.2.** | **Module leader: Lecturer** **Laura Riscanu, PhD** |
| **2.3.** | **Seminar leader: Lecturer Laura Riscanu, PhD** |
| **2.4. Year of study** | **I** | **2.5. Semester in which is taught** | **2** | **2.6. Evaluation type**  | EXAM | **2.7. Subject status** | Mandatory DF |

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **3.1.Number of hours / week** | 4 | **3.2. Courses number of hours / week** | 2 | **3.3.Seminar / l practical classes** | 2 |
| **3.4. Total number of learning hours** | 56 | **3.5. Courses** | 28 | **3.6. Seminar / practical classes** | 28 |
| **3.7. Distribution of the available time** | Sem II |
| **Study based on the manual, lecture support, bibliography and hand notes** | 10 |
| **Supplementary documentation in the library, using specialised platforms via internet and by field work** | 7 |
| **Preparation for seminars / practical classes, study themes, reviews, portofolio, and essays** | 2 |
| **Tutorship** | 2 |
| **Examinations** | 4 |
| **Other activities** |  |
| **3.8. Total hours of individual study** | 19 |
| **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 |  |
| **4.2.** of competences |  |

1. **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) |

1. **Specific competences acquired**

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| --- | --- |
| Professional competences (expressed as knowledge and abilities) | C1.1 description of concepts, theories and fundamental concepts of physiological and pathological mechanisms of the body, symptoms and clinical signs, identification methods and techniques of physiotherapyC1.2 formulation of hypotheses and operationalization of key concepts to explain syndromes and / or diseasesC1.4 Using parameters appropriate techniques to increase joint mobility, muscle strength, coordination, balance, the improvement of the modified parameters: cardiovascular |
| Transverse competences (of role, of professional development, personal) | CT1. Identify objectives to be achieved, the resources available, the conditions for completion of their work flow, working time, deadlines and related risksCT2. Identifying roles and responsibilities in a multidisciplinary team and application techniques and effective work relationships within the team and the relationship 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 | Knowing the shape and structure of the human body and anatomy of various body systemsThe formation of a biological thinking  |
| **7.2.** Specific objectives | Gaining knowledge on the functioning of themisculosckeletal, cardiovascular, respiratory, digestive, urinary, nervous sistemsIntegration anatomical data and functional unit of the living organism. |

1. **Contents**

**SEMESTER 2**

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| **8.1. Lecture- General Anatomy** | **Teaching methods** | **Observations** |
| 1 General musculoskeletal system, classification, structure, physicochemical properties, periosteum | Interactive lectures,Discussion, Explanations | **2 hours** |
| 2. Musculoskeletal system - artrology – joint classification, joint elements of a mobile, active and passive elements; joint biomechanics principles | Interactive lectures,Discussion, Explanations | **2 hours** |
| 3 Musculoskeletal system -miology- general concepts about muscles, classification of muscles, connective structures conexe- tendons, aponeurosis, retinacule | Interactive lectures,Discussion, Explanations | **2 hours** |
| 4 Functional organization of the upper limb, axial elements available under the functional layer of upper limb movements, fascial compartments, nerves and blood compartments of the upper limb. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 5 Functional organization of the lower limb, axial elements available under the functional layer of upper limb movements, fascial compartments, nerves and blood compartments of the lower limb. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 6 Functional organization of axial skeletal elements, curvatures physiological, anatomical elements that participate in the posture | Interactive lectures,Discussion, Explanations | **2 hours** |
| 7 Functional organization of the torso walls, skeletal structures, thoraco-abdominal press | Interactive lectures,Discussion, Explanations | **2 hours** |
| 8 Cardiovascular apparatus- external and internal conformation of the heart anatomy heart function and structure; endocarditis, myocardial contractile, embryonic myocardium, | Interactive lectures,Discussion, Explanations | **2 hours** |
| 9 Cardiovascular apparatus- pericardium; vasculature and cardiac innervation. cardiovascular - systemic circulation, pulmonary circulation | Interactive lectures,Discussion, Explanations | **2 hours** |
| 10 The respiratory tract – extrapulmonary airways: nasal cavities, larynx, trachea conformation external, internal conformation, | Interactive lectures,Discussion, Explanations | **2 hours** |
| 11 The respiratory tract - lungs – external conformation, structure, innervation and blood supply organization pulmonary pleura. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 12. Digestive apparatus– annexes glands mouth and esophagus - descriptive anatomy and functional structure, innervation and vasculature, stomach, small intestine, large intestine – descriptive anatomy and functional structure, vascularisation and innervation | Interactive lectures,Discussion, Explanations | **2 hours** |
| 13.Digestive apparatus -annexes glands – liver, biliary tract, pancreas - anatomy descriptive; structure, innervation and vasculature, peritoneum; spleen - external conformation and structure | Interactive lectures,Discussion, Explanations | **2 hours** |
| 14.Urinary tract - the kidneys - external conformation, structure, excretory pathways functional organization. Male and female genitalia - functional organization structure | Interactive lectures,Discussion, Explanations | **2 hours** |
| **Bibliography**mandatoryAtlas of Human Anatomy , 6th Edition, Frank Netter, Saunders , 2014Anatomy: An Essential Textbook Pap/Psc Edition, [Anne M Gilroy](https://www.amazon.com/Anne-M-Gilroy/e/B008S0268S/ref%3Ddp_byline_cont_book_1), 2010electiveAtlas 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), 2011Gray's Anatomy: The Anatomical Basis of Clinical Practice, 41e 41st Edition Gray's Anatomy: The Anatomical Basis of Clinical Practice, 41e 41st Edition , [Susan Standring PhD DSc](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&text=Susan+Standring+PhD++DSc&search-alias=books&field-author=Susan+Standring+PhD++DSc&sort=relevancerank), 1977Clinically Oriented Anatomy, Sixth Edition and Grant's Atlas of Anatomy Twelfth EditionClinically oriented anatomy, [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), [Keith L. Moore](https://www.google.ro/search?sa=X&biw=1600&bih=762&q=keith+l+moore&stick=H4sIAAAAAAAAAOPgE-LSz9U3SDaszCi0UOIEsy0M49O0ZLKTrfST8vOz9cuLMktKUvPiy_OLsq0SS0sy8osAnV1yTzcAAAA&ved=0ahUKEwjkmvjEvuTRAhVMNxQKHYRiBoQQmxMIyQEoATAU), 19851. Essential Clinical Anatomy, [Keith L. Moore](https://www.google.ro/search?sa=X&biw=1600&bih=762&q=keith+l+moore&stick=H4sIAAAAAAAAAOPgE-LRT9c3NErKrcgwzclQ4tTP1TdItjCMT9OSyU620k_Kz8_WLy_KLClJzYsvzy_KtkosLcnILwIAQRsKRzkAAAA&ved=0ahUKEwiJmevfvuTRAhVHuxQKHRmnDOUQmxMI3AEoATAO), [Anne MR Agur](https://www.google.ro/search?sa=X&biw=1600&bih=762&q=essential+clinical+anatomy+anne+mr+agur&stick=H4sIAAAAAAAAAOPgE-LRT9c3NErKrcgwzclQ4tLP1TcwLSsuTsvWkslOttJPys_P1i8vyiwpSc2LL88vyrZKLC3JyC8CAHHc7CQ6AAAA&ved=0ahUKEwiJmevfvuTRAhVHuxQKHRmnDOUQmxMI3QEoAjAO), 6th Edition, 1995
 |
| **8.2. Seminar / practical classes** | **Teaching methods** | **Observations** |
| 1 Axial skeleton of the body - the spine, general characters and regional vertebrae, sacrum, coccyx, chest, sternum, ribs. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 2 Skeleton of upper limb and shoulder girdle, shoulder blade, clavicle, humerus, radius and ulna, the hand skeleton | Interactive lectures,Discussion, Explanations | **2 hours** |
| 3 The skeleton of the lower limb and pelvic girdle, hip, pelvis bone, femur, patella, tibia, fibula, foot skeleton | Interactive lectures,Discussion, Explanations | **2 hours** |
| 4 Upper limb joints- the shoulder joint, the elbow joint, aticulation between the forearm bones, joints of the hand bones. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 5 Lower limb joints- the hip joint, the knee, joints between the leg bones. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 6 Upper limb muscles: inserts, action, fascia. Vascularization and innervation of the upper limb. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 7 Leg muscles: inserts, action, fascia. Vascularization and innervation of the lower limb. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 8 The joints of the spine. The muscles of the trunk and anterior-lateral abdominal wall. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 9 Cardiovascular apparatus- external and internal conformation of the heart anatomy heart function and structure; endocarditis, myocardial contractile, embryonic myocardium.  | Interactive lectures,Discussion, Explanations | **2 hours** |
| 10 Pericardium; vasculature and cardiac innervation. Cardiovascular - systemic circulation, pulmonary circulation. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 11 The respiratory tract – extrapulmonary airways: nasal cavities, larynx, trachea conformation external, internal conformation, lungs – external conformation, structure, innervation and blood supply organization pulmonary pleura  | Interactive lectures,Discussion, Explanations | **2 hours** |
| 12 Digestive apparatus– annexes glands mouth and esophagus - descriptive anatomy and functional structure, innervation and vasculature, stomach, small intestine, large intestine – descriptive anatomy and functional structure, vascularisation and innervation. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 13 Digestive apparatus -annexes glands – liver, biliary tract, pancreas - anatomy descriptive; structure, innervation and vasculature, peritoneum; spleen - external conformation and structure. | Interactive lectures,Discussion, Explanations | **2 hours** |
| 14 Urinary tract - the kidneys - external conformation, structure, excretory pathways functional organization. Male and female genitalia - functional organization structure | Interactive lectures,Discussion, Explanations | **2 hours** |
| **Bibliography****mandatory**Atlas of Human Anatomy , 6th Edition, Frank Netter, Saunders , 2014 Anatomy: An Essential Textbook Pap/Psc Edition, [Anne M Gilroy](https://www.amazon.com/Anne-M-Gilroy/e/B008S0268S/ref%3Ddp_byline_cont_book_1), 2010 **selective**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), 2011Gray's Anatomy: The Anatomical Basis of Clinical Practice, 41e 41st Edition Gray's Anatomy: The Anatomical Basis of Clinical Practice, 41e 41st Edition , [Susan Standring PhD DSc](https://www.amazon.com/s/ref%3Ddp_byline_sr_book_1?ie=UTF8&text=Susan+Standring+PhD++DSc&search-alias=books&field-author=Susan+Standring+PhD++DSc&sort=relevancerank), 1977Clinically Oriented Anatomy, Sixth Edition and Grant's Atlas of Anatomy Twelfth Edition Clinically oriented anatomy, [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), [Keith L. Moore](https://www.google.ro/search?sa=X&biw=1600&bih=762&q=keith+l+moore&stick=H4sIAAAAAAAAAOPgE-LSz9U3SDaszCi0UOIEsy0M49O0ZLKTrfST8vOz9cuLMktKUvPiy_OLsq0SS0sy8osAnV1yTzcAAAA&ved=0ahUKEwjkmvjEvuTRAhVMNxQKHYRiBoQQmxMIyQEoATAU), 19851. Grant's Atlas of Anatomy,[Arthur F Dalley](https://www.google.ro/search?sa=X&biw=1600&bih=762&q=grant%27s+atlas+of+anatomy+arthur+f+dalley&stick=H4sIAAAAAAAAAOPgE-LSz9U3MMsqKMozUAKzTSvyipMrtWSyk630k_Lzs_XLizJLSlLz4svzi7KtEktLMvKLAO1JUtM4AAAA&sqi=2&ved=0ahUKEwiFyJbjvuTRAhUDVhQKHcNUAx0QmxMIzAEoATAO), [Anne MR Agur](https://www.google.ro/search?sa=X&biw=1600&bih=762&q=grant%27s+atlas+of+anatomy+anne+mr+agur&stick=H4sIAAAAAAAAAOPgE-LSz9U3MMsqKMozUAKzTcuKi9OytWSyk630k_Lzs_XLizJLSlLz4svzi7KtEktLMvKLABVSf8o4AAAA&sqi=2&ved=0ahUKEwiFyJbjvuTRAhUDVhQKHcNUAx0QmxMIzQEoAjAO), 21e 21st Edition 2008
 |

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** | Acquiring theoretical notions and presented in the course | Written exam | 50% |
| **Seminar/practical classes** | Practical works themes | Colloquium practical activity | 40% |
| Activities carried out in laboratory and conducted quality essays | Tests during the semester | 10% |
| **Minimal performance standard:** Recognition at least 10 of anatomical landmarks of those given to practical activities. |

**Date Signature of head of discipline**

Lecturer Riscanu Laura, Ph-D

25.09.2019

**Department approval date**

30.09.2019

**Signature of department director**

 Lecturer Daniela-Viorelia Matei, Ph-D