



DISCIPLINE SHEET

1.-Info about the program

| | | |
|--|-------------------------------------|--|
| FOUNDATION FOR DEVELOPMENT AND MANAGEMENT | | |
| 1.2-Faculty | FACULTY OF MEDICINE | |
| 1.3-Departament | Preclinical/ Fundamental Discipline | |
| 1.4-Study domain | Health | |
| 1.5-Study cycle | Bachelor | |
| 1.6-Study program/ Calification | Medicine-English | |

2.- Info about discipline

| | | | | | | | | |
|-----------------------------|---|--|----|---------------------|------|------------------------|-----------|------------|
| 2.1- Name of the discipline | | ANATOMY AND EMBRYOLOGY_II | | | | | | |
| 2.2-Course lecturer | | Prof. Dr. VARLAAM Horațiu , MD, PhD | | | | | | |
| 2.3-Laboratory lecturer | | 1.-Assist. Lect. Dr. SOLOMON Radu , MD, PhD | | | | | | |
| | | 2.-Assist. Lect.Dr. CUCU Ramona , MD, PhD | | | | | | |
| 2.4-Year of study | I | 2.5 Semester | II | 2.6 Evaluation type | Exam | 2.7. Discipline regime | Content | DF |
| | | | | | | | Mandatory | DOB |

3.-Total time (hours of didactic activity per semester)

| | | | | | |
|---|------------|-------------|-----------|----------------|-------------|
| 3.1-Number of hours per week | 5 | 3.2- course | 2 | 3.3-laboratory | 3 |
| 3.4-Total hours of the curriculum | 70 | 3.5- course | 28 | 3.6-laboratory | 42 |
| Distribution of time | | | | | Hour |
| Study after manual, course support, bibliography and notes | | | | | 31 |
| Additional documentation in the library, on the specialized electronic platforms and on the field | | | | | 35 |
| Training seminars/laboratories/projects, themes, papers,portofolios and essays | | | | | 6 |
| Tutoring | | | | | 4 |
| Examination | | | | | 4 |
| Other activities | | | | | - |
| 3.7-Individual study hours | 80 | | | | |
| 3.8-Total hours per semester | 150 | | | | |
| 3.9-Credit number | 6 | | | | |

4.-Preconditions (where applicable)

| | |
|----------------|---|
| 4.1-curriculum | ▪-Fundamental Concepts of Human Anatomy |
| 4.2-skills | ▪-It is not the case |

5.-Conditions (where applicable)



| | |
|---------------------------|---|
| 5.1-course progress | <ul style="list-style-type: none"> ▪-Conditions for active and interactive learning, teaching activities conducted in a heuristic and problematizing spirit; Classroom/auditorium, teaching aids (PC, video projector, overhead projector, whiteboard), educational materials: PowerPoint presentation, educational film, posters, etc.; |
| 5.2 – laboratory progress | <ul style="list-style-type: none"> ▪-Rules of conduct for students in the anatomy laboratory. Conditions for practical-applied learning, in a heuristic and problematizing spirit; Laboratory room equipped with a whiteboard and specific laboratory equipment, anatomical specimens, practical study on cadavers; |

6. Learning outcomes

| | |
|--------------------------------------|--|
| Knowledge | Identifies, describes and explains fundamental notions regarding the characteristics of the healthy human body, structural (anatomical, histological, cellular and molecular) and functional (physiological, biochemical, biophysical), as well as the principles of methods |
| Skills | Correctly interpret and apply fundamental notions regarding the structure and functions of the human body and methods for investigating biological functions. |
| Responsibilities and autonomy | Integrates fundamental notions and methods of investigating biological functions, formulates and assumes reasoned conclusions regarding the state of health or disease. |

7.-Course Objectives (arising from the grid of specific competencies acquired)

| | |
|---|--|
| 7.1 -The general objectives of the discipline | <ul style="list-style-type: none"> ▪-Knowing the elements of descriptive and topographical anatomy of all the components of the human body. ▪-Understanding embryogenesis and organogenesis as the basis of morphogenesis in the anatomy of the normal development of the human body. ▪-Knowledge of the regions and spaces of the human body on axial (head, neck, trunk) or appendicular (limbs) segments within topographical anatomy. |
|---|--|



| | |
|-------------------------|--|
| | <ul style="list-style-type: none"> ▪-Knowledge of the complex morphology of organ systems and devices. ▪-Morphological exploration on the prepared piece (cadaver) of the anatomical sections. ▪-Acquisition of international anatomical terminology (anatomical nomenclature). ▪-Identification, description, and explanation of the fundamental concepts regarding the characteristics of the healthy human organism, including structural (anatomical, histological, cellular, and molecular) and functional (physiological, biochemical, biophysical) features, as well as the principles of methods for investigating biological functions; |
| 7.2-Specific objectives | <ul style="list-style-type: none"> ▪-Understanding knowledge and anatomical elements. ▪-Identification of all anatomical elements. ▪-Knowing the relationships between the different anatomical elements. ▪-Study of topographic regions and sectional anatomy. ▪-Correct interpretation and application of the fundamental concepts regarding the structure and functions of the human organism and the methods for investigating biological functions. ▪-Integration of fundamental concepts and methods for investigating biological functions, formulation and assumption of substantiated conclusions regarding health status or disease. |

8.-Content

| 8.1-Course | Teaching methods | Hours /week | Obs. |
|--|---|-------------|------|
| 1.- Embryological development of the respiratory system. Pleuro-pulmonary regions. | Interactive exposition of the material according to the analytical program, using multimedia means, powerpoint presentations, didactic films. | 2 | |
| 2.- Projection of pleural recesses. Mediastinum - boundaries, division, and content. | | 2 | |
| 3.- Embryological development of the heart. Pericardium. | | 2 | |
| 4.- External conformation of the heart. Vessels and nerves of the chest. | | 2 | |
| 5.- Embryological development of abdominal organs. Topography of the abdominal cavity. Generalities of the peritoneum, distribution of the peritoneum, and omental bursa. | | 2 | |
| 6.- Gastric region. Stomach - external conformation, internal conformation, structure, relations, vascularization, and innervation. | | 2 | |



| | | | |
|---|--|----------|--|
| <p>7.-Hepatic region. Liver - segmentation, external conformation, structure, relations, vascularization, and innervation. Intrahepatic and extrahepatic bile ducts. Portal vein.</p> | | <p>2</p> | |
| <p>8.-Splenic region. Spleen - external conformation, structure, relations, vascularization, and innervation. Pancreas - external conformation, structure, relations, vascularization, and innervation.</p> | | <p>2</p> | |
| <p>9.-Small and large intestines - division, external conformation, internal conformation, structure, relations, vascularization, and innervation. Vessels and nerves of the abdomen. Celiac plexus – composition and branches. Kidney - external conformation, internal conformation, structure, relations, vascularization, and innervation. Fixation means.</p> | | <p>2</p> | |
| <p>10.-Urinary bladder - external conformation, internal conformation, structure, relations, vascularization, and innervation. Fixation means. Vessels and nerves of the pelvis.</p> | | <p>2</p> | |
| <p>11.-Uterus, fallopian tubes, and ovaries - external conformation, internal conformation, structure, relations, vascularization, and innervation. Fixation means.</p> | | <p>2</p> | |
| <p>12.-Prostate, seminal vesicles, and deferent ducts - external conformation, structure, relations, vascularization, and innervation. Perineal region - boundaries and division. Male perineum. Female perineum.</p> | | <p>2</p> | |
| <p>13.-Embryological development of the eyeball and its appendages. Anatomy of the eyeball and its appendages.</p> | | <p>2</p> | |
| <p>14.-Embryological development of the ear. Anatomy of the external ear. Anatomy of the middle ear. Anatomy of the inner ear. Organ of taste. Olfactory organ.</p> | | <p>2</p> | |
| <p>Bibliography:</p> <ul style="list-style-type: none"> -Drake RL, Vogl AW, Mitchell AW, Tibbits RM, Richardson PE. Gray's Atlas of Anatomy. 3rd ed., Elsevier, 2020. -Drake RL, Vogl AW, Mitchell AW. Gray's Anatomy for Students, 5th ed, Elsevier, 2023. -Gilroy AM, MacPherson BR, Ross LM. Atlas of Anatomy. Latin Nomenclature. 4th ed., Thieme, 2022. | | | |



- Netter FH. Netter Atlas of Human Anatomy. 8th ed., Elsevier, 2022.
- Paulsen F, Waschke J. Sobotta Atlas of Anatomy, Volumes 1-3, 17th ed., Elsevier, 2023.
- Sadler TW. Langman's Medical Embryology, 15th ed., Wolters Kluwer, 2023.
- Schoenwolf GC, Bleyl SB, Brauer PR, Francis-West PH. Larsen's Human Embryology, 6th ed., Elsevier, 2020.
- Standing S (ed). Gray's Anatomy. The Anatomical Basis of Clinical Practice, 42nd Ed, Elsevier, 2020.
- Wineski LE. Snell's Clinical Anatomy by Regions. 10th Ed., Wolters Kluwer, 2019.
- KAMINA, Pierre - Anatomy Atlas - Bucharest: Litera Publishing House, 2014
- KAMINA, Pierre / Basics of anatomy. – Bucharest: Litera Publishing House, 2015

| 8.2 -Laboratory | Teaching methods | Hours/ week | Obs |
|--|---|----------------|-----|
| <p>1.-Study of the thorax, sectioning of the sterno-costal plate. Study of organs in situ. Study of the pleura and pleuro-pulmonary recesses. Projection of pleural recesses, pulmonary fissure. Study of the pulmonary hilum. Study of the lungs - lobes and segments.</p> | <p>Verification of the students' theoretical knowledge about the current work, proof by the student of the knowledge of the dissection method, evaluation of each student's way of working. Checking the student's practical knowledge by identifying macroscopic anatomical elements on cadaver parts, macroscopic anatomical preparations, sections, casts and anatomical plates.</p> | 3 | |
| <p>2.-Study of the mediastinum. Study of the pericardial reflection. Sectioning of the pericardium with the highlighting of the heart and major vessels. Dissection of major vessels, sectioning, extraction of the heart.</p> | | 3 | |
| <p>3.-Heart – external conformation. Study of heart vascularization. Dissection of the heart – internal conformation of the heart. Dissection of the mediastinum. Study of the trachea, bronchi, and thoracic part of the esophagus.</p> | | 3 | |
| <p>4.-Study of the thoracic portion of the aorta, intercostal vessels, and nerves. Study of the superior vena cava, azygos veins, hemiazygos vein, thoracic duct, autonomic nervous system (sympathetic trunk), vagus nerves.</p> | | 3 | |
| <p>5.-Opening of the abdomen. Study of organs in situ. Study of the distribution of the peritoneum and peritoneal formations. Study of the diaphragm muscle: structure; hiatuses; vascularization; innervation. Projection of diaphragmatic hiatuses and domes.</p> | | 3 | |
| <p>6.-Peritoneal formations - mesentery, ligaments, omental. Peritoneal cavity: supra- and infra-colic spaces with their subdivisions. Study of the abdominal</p> | | 3 | |



| | | | |
|--|--|-----------------|--|
| <p>esophagus: relations, external conformation, internal conformation, vascularization, innervation. Study of visceral regions at the supramesocolic level. Study of the projection of supramesocolic organs on the trunk walls.</p> | | | |
| <p>7.-Study of the omental bursa and its extensions; omental foramen bursa and Winslow's hiatus. Access routes to the omental bursa. Dissection of the celiac trunk and its branches; celiac plexus. Extraction and study of the liver: external conformation, structure, relations, vascularization, lymphatics, innervation. Liver ligaments. Liver segmentation.</p> | | <p>3</p> | |
| <p>8.-Living anatomy: projection of the liver to the abdominal-thoracic wall. Study of the portal vein. Extraction and study of the stomach: external conformation, internal conformation, structure, relations, vascularization, innervation. Stomach ligaments. Living anatomy: projection of the cardia and pylorus. Projection of the anterior surface, greater and lesser curvature of the stomach. Imaging study.</p> | | <p>3</p> | |
| <p>9.-Extraction and study of the spleen: external conformation, structure, relations, vascularization, innervation. Spleen ligaments. Living anatomy: projection of the spleen. Extraction and study of the pancreas: external conformation, structure, relations, vascularization, innervation. Living anatomy: projection of the pancreas. Imaging study.</p> | | <p>3</p> | |
| <p>10.-Study of the projection of infra-mesocolic organs on the trunk walls. Dissection of the mesentery and its vessels. Extraction, sectioning, and study of the small intestine: division, external conformation, internal conformation, structure, relations, vascularization, innervation. Extraction, sectioning, and study of the large intestine: division, external conformation, internal conformation, structure, relations, vascularization, innervation.</p> | | <p>3</p> | |



| | | | |
|--|--|----------|--|
| <p>11.-Dissection of the renal region. Study of the kidney: external conformation, structure, relations, vascularization, innervation. Extraction of the kidney and its transverse study. Study of the ureter. Living anatomy: projection of the ureter; ureteral pain points. Dissection of the bladder region. Extraction, sectioning, and study of the urinary bladder. Study of the female and male urethra. Dissection of the genital organs.</p> | | 3 | |
| <p>12.-Dissection of the perineal region (anal and urogenital regions). Exploration of the perineal region: general boundaries. Study of the male and female perineum and their regions: anterior (uro-genital triangle, uro-genital with external genital organs) and posterior (posterior perineum): anal opening and ischio-rectal fossa.</p> | | 3 | |
| <p>13.-Study of the eyeball and its appendages. Ophthalmoscopy.</p> | | 3 | |
| <p>14.-Study of the ear. Otoscopy.</p> | | 3 | |
| <p>Bibliography:</p> <ul style="list-style-type: none"> -Drake RL, Vogl AW, Mitchell AW, Tibbits RM, Richardson PE. Gray's Atlas of Anatomy. 3rd ed., Elsevier, 2020. -Drake RL, Vogl AW, Mitchell AW. Gray's Anatomy for Students, 5th ed, Elsevier, 2023. -Gilroy AM, MacPherson BR, Ross LM. Atlas of Anatomy. Latin Nomenclature. 4th ed., Thieme, 2022. -Netter FH. Netter Atlas of Human Anatomy. 8th ed., Elsevier, 2022. -Paulsen F, Waschke J. Sobotta Atlas of Anatomy, Volumes 1-3, 17th ed., Elsevier, 2023. -Standring S (ed). Gray's Anatomy. The Anatomical Basis of Clinical Practice, 42nd Ed, Elsevier, 2020. -Wineski LE. Snell's Clinical Anatomy by Regions. 10th Ed., Wolters Kluwer, 2019. | | | |

9.-Corroborating the contents of the discipline with the expectations of the representatives of the epistemic communities, professional associations and representatives employers in the field related to the program

-The content of the discipline is consistent with what is taught in other university centers in the country and abroad, here referring to the main medical universities in the European Union and the United States of America. The bibliography, which includes the books and textbooks on anatomy from the Gray's Anatomy series, as well as the Netter and Sobotta anatomy atlases, represents a harmonization of theoretical and practical information with those that students from other top universities acquire.



▪-Learning anatomical terminology and forming the three-dimensional image of the human body with specific relations between the component structures will be extremely useful for future doctors and health specialists. Knowledge and practical skills are established as didactic objectives and specified as such in analytical programs that are reviewed annually and analyzed at Faculty and University level, in order to harmonize with other disciplines. Throughout this process, the correspondence between contents and the expectations of the academic community and professional associations is systematically evaluated, but the requirements of civil society and employers are also taken into account.


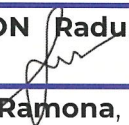
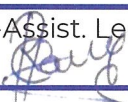
▪-As its main goal, the discipline aims for students to acquire solid knowledge of anatomy, corroborated with the clinical importance of the studied structures, in order to form a correct medical, surgical or pharmaceutical reasoning in the future. Thus, students are offered optimal learning premises for the next years of study, as well as for continuing professional training in Master, Doctoral and Residency programs, or in the perspective of successful employment immediately after graduation, in Romania or abroad.

10.-Evaluation

| Activity | 10.1-Evaluation criteria | 10.2-Evaluation methods | 10.3 % of the final grade |
|-----------------------------------|--|---|---------------------------|
| 10.4 Course | <i>Grid exam</i> | Final assessment = grid test with 50 questions+3 essay topics. It is necessary to obtain a grade of 5 both in the grid test and in the subjects (minimum 5 in each subject). Continuous assessment: grid test from the course material | 60% 10% |
| 10.5 Laboratory | The practical exam is individual and takes place during the last week of the semester. The practical exam is mandatory: - grade 5: the student must answer 100% to the 5 questions from the minimum scale - grade 10: the student must answer 100% of all questions. | - Final assessment: practical exam | 30% |
| 10.6-Minimum performance standard | | | |



- Knowledge of anatomical terminology.
- Recognition of the anatomical elements that make up the human body and their relationships.
 - Knowledge of topographic regions, regional stratigraphy, and the anatomical elements they comprise
 - Identification, description, and explanation of the fundamental concepts regarding the characteristics of the healthy human organism, including structural (anatomical, histological, cellular, and molecular) and functional (physiological, biochemical, biophysical) features, as well as the principles of methods for investigating biological functions;
 - Correct interpretation and application of the fundamental concepts regarding the structure and functions of the human organism and the methods for investigating biological functions.
 - Integration of fundamental concepts and methods for investigating biological functions, formulation and assumption of substantiated conclusions regarding health status or disease.

| | | |
|---|---|---|
| Data: 05.05.2025 | Discipline coordinator signature: | Laboratory lecturer signature: |
| |  Prof. Dr. VARLAAM Horațiu , MD, PhD | 1.-Assist. Lect. Dr. SOLOMON Radu , MD, PhD  2.-Assist. Lect.Dr. CUCU Ramona , MD, PhD  |
| Date of approval in the Department Council: | | |
| Signature of the department director: | | |

Reprezentant legal F.D.M.

Presedinte Prof. Univ. Dr. POSTĂVARU Nicolae

