



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	ANATOMY AND EMBRIOLOGY (I)				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Ioan Sorin Tudorache, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Ioan Sorin Tudorache, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Ioan Sorin Tudorache, Assoc. Professor, M.D., PhD Stoica Cristina, Assist. Prof.				
Discipline Code	MLE.1.1.1	Formative category of the discipline		FS	
Year of Study	I	Semester	1	Type of the final evaluation (E, V)	E1
Discipline Regime (M-mandatory, E-elective)			M	No. of credits	7

No. of Hours per week	5	Out of which are Course hours:	2	Seminar / Practical Activity / Clinical Stage	3
Total of hours in the curriculum	70	Out of which are Course hours:	28	Seminar / Practical Activity / Clinical Stage	42
		Total hours per semester	175	Total hours of individual study	105

Distribution of time pool per week	Hours
1. Study of the course material	5
2. Study according with the course support, manuals	39
3. Study of the minimal bibliography	5
4. Additional documentation in the library	5
5. Specific activity for the seminary or laboratory	3

Distribution of time pool per week	Hours
6. Homework, translations, etc.	1
7. Preparing for different written exams	3
8. Preparing for oral examinations	1
9. Preparing for the final examination	15
10. Consultations	5
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	20
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	ANATOMY AND EMBRIOLOGY (I)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Use of standardized anatomical terminology in the description of structures and topographical relationships.</li> <li>• Practical application of anatomical knowledge in basic clinical procedures (palpation, vascular and neural landmarking).</li> <li>• Identification and description of relevant anatomical elements in the context of orthopedic and traumatic pathologies.</li> <li>• Correlation of anatomical structures with imaging findings and integration into clinical assessment.</li> <li>• Recognition and explanation of the clinical implications of anatomical variations.</li> <li>• Accurate use of dissection techniques for the identification of relevant anatomical structures.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of oral communication skills using medical-specific language through thematic presentations and examination responses.</li> <li>• Acquisition of teamwork abilities during practical sessions, dissection activities, and extracurricular involvement (Anatomy Scientific Circle).</li> <li>• Development of scientific writing skills in the anatomical field using academic sources and adhering to ethical research standards.</li> <li>• Cultivation of critical and analytical thinking in interpreting the structure of the human body from a functional and clinical perspective.</li> <li>• Adaptation of academic and professional conduct to the standards and specificity of medical practice.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To build a comprehensive understanding of descriptive, topographical, clinical, and functional anatomy of the trunk and limbs.</li> <li>• To develop the ability to correlate anatomical structures with clinical applications and modern imaging techniques.</li> <li>• To assimilate fundamental concepts of embryology and arthrology in the context of integrated medical training.</li> <li>• To cultivate a systemic and applied anatomical mindset aligned with future professional medical practice.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Recognition and delimitation of the topographical regions of the trunk walls and limbs.</li> <li>• Identification of bone landmarks and muscular contours through palpation.</li> <li>• Localization of palpable arteries and clinical landmarks for pulse assessment, compression, or ligation techniques.</li> <li>• Description of the superficial venous system and palpable superficial lymph node groups.</li> <li>• Understanding the course of major peripheral nerves prone to injury in trauma settings.</li> <li>• Assimilation of joint biomechanics concepts and their application in functional assessment.</li> <li>• Application of anatomical knowledge in correlation with medical imaging (ultrasound, X-ray, CT, MRI).</li> <li>• Acquisition of embryology concepts and knowledge of musculoskeletal system development in a functional and clinical context.</li> <li>• Active participation in dissection and correlation of direct observations with theoretical and iconographic information.</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the anatomical organization of the trunk and limbs using standardized anatomical terminology, describe the stages of human embryonic development and the derivatives of the three germ layers, understand the structural organization of bones, muscles, vessels, and nerves, as well as the principles of joint classification and biomechanics.
<b>Skills</b>	Students interpret anatomical structures using anatomical specimens, models, and imaging techniques, analyze and correlate joint structure and biomechanics in relation to movement and functional stability, perform basic anatomical identification, palpation, and dissection techniques during practical laboratory activities.
<b>Responsibilities/ Autonomy</b>	Students apply anatomical knowledge to interpret clinical landmarks, imaging findings, and trauma-related anatomical contexts, use standardized anatomical terminology when describing structures and functional relationships, adhere to ethical and professional conduct when performing dissection activities and working with anatomical specimens.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Introduction to Anatomy</b> Overview of the history of anatomy, with emphasis on the Romanian School of Anatomy. Fundamental concepts of ontogenesis and human reproduction.	2
<b>Course #2. Gametogenesis</b> Development of primordial germ cells. Stages of gametogenesis, including spermatogenesis and oogenesis. Description of meiotic and mitotic divisions involved in gamete maturation.	2
<b>Course #3. Fertilization and Early Embryonic Development</b> Mechanisms of fertilization. Stages of embryonic segmentation and initial development.	2
<b>Course #4. Second and Third Weeks of Development</b>	2

<b>Course Syllabus</b>	<b>Hours</b>
Differentiation of the trophoblast and development of the embryonic disc during weeks II and III.	
<b>Course #5. Embryonic Germ Layers</b> Formation and differentiation of the three embryonic germ layers. Overview of their derivatives.	2
<b>Course #6. Fetal Period and Extraembryonic Structures</b> Stages of fetal development. Development and functions of extraembryonic structures: amniotic vesicle, yolk sac, allantois, placenta, and umbilical cord.	2
<b>Course #7. Multiple Pregnancy and Developmental Anomalies</b> Gemellary (twin and multiple) pregnancy. Development of the vertebral column and limbs. Introduction to teratology and congenital malformations.	2
<b>Course #8. Breast and Anterolateral Abdominal Wall</b> Anatomical structures of the mammary region and the anterolateral abdominal wall. Topographic relationships and clinical relevance.	2
<b>Course #9. Axillary Region and Upper Limb Topography</b> Axilla and its contents. Anatomical features of the bicipital groove, anterior region of the elbow, carpal tunnel, and hand topography.	2
<b>Course #10. Arthrology – General Concepts</b> General principles of arthrology. Classification of joints and basic notions of joint biomechanics.	2
<b>Course #11. Joints of the Trunk</b> Anatomical features and functional aspects of the joints of the vertebral column and thoracic cage.	2
<b>Course #12. Joints of the Upper Limb</b> Detailed study of the shoulder, elbow, wrist, and hand joints. Movements and stabilizing structures.	2
<b>Course #13. Inguinal and Femoral Regions</b> Anatomy of the inguinal canal, femoral triangle, adductor canal, popliteal fossa, and calcaneal (tarsal) canal.	2
<b>Course #14. Clinical Anatomy and Imaging</b> Introduction to radiological and cross-sectional anatomy. Correlation of anatomical structures with imaging modalities for clinical application.	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Introduction, Anatomical Orientation, and Axial Skeleton</b> Overview of anatomical planes, axes, and terminology. Osteology of the vertebral column (vertebrae, sacrum, coccyx) and thoracic skeleton (sternum, ribs). Surface and radiological anatomy of the trunk.	3
<b>Laboratory Work #2. Osteology of the Upper Limb</b> Clavicle, scapula, humerus, radius, ulna, and hand bones. Surface landmarks, clinical correlations, and radiological anatomy.	3
<b>Laboratory Work #3. Osteology of the Pelvis and Lower Limb</b> Coxal bone, pelvis, femur, patella, tibia, fibula, and foot bones. Surface anatomy and clinical-radiological features.	3
<b>Laboratory Work #4. Muscles of the Back, Neck, and Thoracic Wall</b> Superficial and deep muscles of the back and neck. Muscles, vessels, and nerves of the anterior and lateral thoracic wall.	3
<b>Laboratory Work #5. Axillary Region and Brachial Plexus</b> Boundaries and contents of the axilla, including vessels and lymph nodes. Topography and branches of the brachial plexus.	3

Laboratory Syllabus	Hours
<b>Laboratory Work #6. Muscles and Neurovascular Structures of the Arm and Forearm</b> Anterior and posterior compartments of the arm and forearm. Superficial veins and clinical-radiological correlations.	3
<b>Laboratory Work #7. Anatomy of the Hand</b> Palmar and dorsal regions – muscles, vessels, and nerves. Functional, clinical, and imaging aspects of the upper limb.	3
<b>Laboratory Work #8. Colloquium 1</b> Evaluation of theoretical and practical knowledge from sessions 1–7.	3
<b>Laboratory Work #9. Anterior Abdominal Wall and Pelvic Plexuses</b> Anatomy of the abdominal wall muscles, vessels, and nerves. Overview of the lumbar and sacral plexuses.	3
<b>Laboratory Work #10. Muscles and Neurovascular Structures of the Thigh</b> Anterior, posterior, and medial thigh compartments. Gluteal region anatomy and popliteal fossa.	3
<b>Laboratory Work #11. Muscles and Neurovascular Structures of the Leg and Foot</b> Anterior, lateral, and posterior compartments of the leg. Plantar and dorsal regions of the foot. Superficial veins and clinical-radiological aspects.	3
<b>Laboratory Work #12. Applied and Live Anatomy of the Limbs</b> Surface anatomy, palpation techniques, clinical applications (spinal puncture, thoracocentesis), and imaging correlations of both upper and lower limbs.	3
<b>Laboratory Work #13. Embryology I – Early Development, Organogenesis and Histological Correlations</b> Microscopic analysis of organ system development and clinical correlations of congenital malformations.	3
<b>Laboratory Work #14. Colloquium 2</b> Evaluation of theoretical and practical knowledge from sessions 9–13.	3

Minimum References:
1. Sadler TW. <i>Langman's Medical Embryology</i> . 15th ed. Wolters Kluwer; 2023. ISBN: 9781975179960.
2. Drake RL, Vogl AW, Mitchell AWM. <i>Gray's Anatomy for Students</i> . 5th ed. Elsevier; 2023. ISBN: 9780323934237.
3. Moore KL, Dalley AF, Agur AMR. <i>Clinically Oriented Anatomy</i> . 9th ed. Wolters Kluwer; 2023. ISBN: 9781975154066.
4. Schuenke M, Schulte E, Schumacher U. <i>General Anatomy and Musculoskeletal System</i> . 4th ed. Thieme; 2024. ISBN: 9781684205899.
5. Netter FH. <i>Atlas of Human Anatomy: Classic Regional Approach</i> . 8th ed. Elsevier; 2022. ISBN: 9780323680424.
6. Teaching support materials

Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector
<ul style="list-style-type: none"> <li>The development of analytical course and practical work plans was based on current recommendations from medical school curricula across the European Union, as well as on ECTS guidelines concerning preclinical education.</li> <li>The content was structured following consultations with experts in clinical anatomy, radiology, and surgery, in order to ensure applied relevance and alignment with current labor market demands in the healthcare system.</li> </ul>

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- To support interdisciplinary teaching (anatomy – medical imaging – semiology), periodic meetings were held with academic staff from both preclinical and clinical departments, aiming to integrate functional anatomy, clinical palpation, and surgical landmark concepts into the teaching process.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Interactive learning based on logical and progressive presentation of content.</li> <li>• Multimedia projection of lecture materials, integrating anatomo-clinical imagery and digital atlases.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>• Interactive discussions with emphasis on the clinical applicability of anatomical information.</li> <li>• Classical study through dissection and use of specific teaching materials: skeletal models, 3D anatomical casts, osteological collections, anatomical specimens, and topographic sections.</li> <li>• Practical activity conducted partially on a virtual dissection table, facilitating three-dimensional reconstruction of anatomical structures and the understanding of spatial relationships.</li> <li>• Use of preserved human cadavers for direct identification of anatomical structures.</li> <li>• Presentation of radiological, imaging, and clinical anatomy concepts, correlated with CT, MRI, ultrasound, and anatomical atlas projection.</li> <li>• Practical embryology sessions using histological specimens and interactive digital presentations.</li> <li>• Real-time answers and clarifications provided to students' questions during practical sessions.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

- Attendance of at least 70% of all practical sessions, with mandatory completion of all missed activities, including absences recorded during mid-semester evaluations.
- Completion of thematic assignments to support the understanding of fundamental concepts corresponding to each practical session.
- Identification of basic anatomical structures using a variety of educational materials: skeletal models, osteological collections, anatomical specimens, topographic sections, preserved human cadavers, 3D anatomical casts, as well as classical iconography and medical imaging (X-ray, CT, MRI).
- Active and interactive participation during practical sessions, including responses to the instructor's questions, involvement in discussions, and application of theoretical knowledge in practice.
- Use of the virtual dissection table to deepen the understanding of three-dimensional topographical relationships and to correlate findings with classical dissection and imaging techniques.
- Exploration and consolidation of taught concepts through projected digital anatomical atlases (e.g., Netter, Thieme) to enhance visual anatomical learning.

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams**

- Attainment of a minimum average grade of 5 (five) in all practical tests and evaluations conducted throughout the semester.
- Demonstrated ability to identify major anatomical structures using various educational tools: anatomical specimens, dissected cadaveric material, 3D anatomical models, and the virtual dissection table.

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

- Active participation of the student in lectures and practical sessions, including attendance at demonstrative activities using the virtual dissection table and projected anatomical atlases.
- Successful completion of colloquia and practical-applied examinations in anatomy and embryology, as mandatory stages in the validation of specific competencies.
- Continuous engagement in the learning process through individual study and teamwork, to ensure the assimilation of fundamental knowledge and the ability to establish anatomo-clinical correlations in an interdisciplinary context.

Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

- The final examination consists of an oral presentation of three topics randomly selected by the student, one from each of the following categories:
  - Topics from lecture content;
  - Topics from practical work.
- All examination topics are published and communicated to students at the beginning of the semester, ensuring effective and transparent preparation.
- The exam is conducted in groups of at least three students, in the presence of the course coordinator, the head of practical activities, and the teaching assistant who supervised the group during the semester.
- Students are granted thinking time, and the assessment is carried out in a transparent and supportive environment, allowing for coherent and logical articulation of knowledge.
- The choice of oral examination is justified by the nature of the medical profession, where verbal communication is essential, and by the need to assess the student's ability to establish anatomo-clinical correlations.

Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
<ul style="list-style-type: none"> <li>• Attendance of at least 70% of practical sessions, with mandatory completion of all missed activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Achievement of an average grade above 9 in all three colloquia during the semester.</li> </ul>

<ul style="list-style-type: none"> <li>• Completion of all three colloquia during the semester, with a minimum grade of 5 in at least two of them (colloquia may be retaken if failed).</li> <li>• Submission of practical session assignments and demonstration of knowledge of basic concepts.</li> <li>• Achievement of an average grade of 5 in the practical examinations in anatomy and embryology.</li> <li>• Provision of minimally correct answers to the three oral exam topics, demonstrating understanding of the fundamental requirements of the discipline.</li> </ul>	<ul style="list-style-type: none"> <li>• An average above 9 in the practical anatomy and embryology examinations, including accurate anatomical identification and anatomo-clinical justification.</li> <li>• Delivery of coherent, complete, and clinically correlated answers to all three oral exam topics, demonstrating advanced competencies and the ability to synthesize and integrate anatomical knowledge.</li> </ul>
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**Date of completion**

11.09.2025

**Discipline Coordinator,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Laboratory Coordinator,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD  
Stoica Cristina, Assist. Prof.**

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	BIOCHEMISTRY (I)				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Rusu Elena, Assoc. Prof., PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Rusu Elena, Assoc. Prof., PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Rusu Elena, Assoc. Prof., PhD Petruț Ștefana Maria, Lecturer				
Discipline Code	MLE.1.1.2	Formative category of the discipline		FS	
Year of Study	I	Semester	1	Type of the final evaluation (E, V)	E1
Discipline Regime (M-mandatory, E-elective)			M	No. of credits	5

No. of Hours per week	4	Out of which are Course hours:	2	Seminar / Practical Activity / Clinical Stage	2
Total of hours in the curriculum	56	Out of which are Course hours:	28	Seminar / Practical Activity / Clinical Stage	28
		Total hours per semester	125	Total hours of individual study	69

Distribution of time pool per week	Hours
1. Study of the course material	3
2. Study according with the course support, manuals	25
3. Study of the minimal bibliography	3
4. Additional documentation in the library	3
5. Specific activity for the seminary or laboratory	2

Distribution of time pool per week	Hours
6. Homework, translations, etc.	1
7. Preparing for different written exams	2
8. Preparing for oral examinations	1
9. Preparing for the final examination	9
10. Consultations	3
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	13
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	BIOCHEMISTRY (I)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>Understanding the molecular basis of physiological and pathological processes.</li> <li>Applying biochemical principles to interpret clinical and laboratory data.</li> <li>Performing and evaluating basic biochemical laboratory techniques safely and accurately.</li> <li>Correlating biochemical mechanisms with pharmacological and therapeutic actions.</li> <li>Integrating biochemical knowledge into clinical decision-making and medical research.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>Development of analytical and critical thinking for scientific problem-solving.</li> <li>Effective communication of scientific and clinical information.</li> <li>Teamwork, professional ethics, and responsibility in laboratory and clinical contexts.</li> <li>Continuous self-learning and adaptation to scientific and technological advances.</li> <li>Use of digital tools and scientific documentation for data interpretation and research.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>To provide medical students with a comprehensive understanding of the chemical and molecular processes essential to human life.</li> <li>To establish the conceptual link between biochemistry and the clinical sciences.</li> <li>To form a scientific foundation for interpreting physiological and pathological phenomena.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>Describe the structure and properties of amino acids, peptides, proteins, carbohydrates, lipids, and nucleic acids.</li> <li>Explain enzyme kinetics, regulation, and mechanisms of inhibition.</li> <li>Interpret the biochemical roles of vitamins and hormones in metabolism.</li> <li>Perform and analyze basic biochemical experiments related to enzyme activity, buffers, and macromolecules.</li> <li>Apply biochemical knowledge to understand disease mechanisms and diagnostic approaches.</li> </ul>

Learning Outcomes	
<b>Knowledge</b>	Students identify the structure, classification, and physicochemical properties of biomolecules including amino acids, proteins, carbohydrates, lipids, and nucleic acids, describe enzyme structure, catalytic mechanisms, kinetics, regulation, and inhibition processes, understand the molecular mechanisms of genetic information flow, protein synthesis, and metabolic regulation by vitamins and hormones.
<b>Skills</b>	Students interpret biochemical laboratory results using qualitative and quantitative analytical methods, analyze enzymatic kinetics and metabolic processes using biochemical calculations and experimental data, perform and evaluate basic biochemical laboratory techniques related to enzyme activity, buffers, and biomolecule identification.
<b>Responsibilities/ Autonomy</b>	Students use biochemical terminology and concepts in the interpretation of physiological and pathological processes, apply analytical reasoning and critical validation when interpreting biochemical laboratory results, respect laboratory safety principles and professional responsibility when performing biochemical experiments.

Course Syllabus	Hours
<b>Course #1. Correlation of Biochemistry with Medical Disciplines and Amino Acids</b> Overview of the relationship between biochemistry and other medical sciences. Structure, classification, and physicochemical properties of amino acids.	2
<b>Course #2. Peptides and Biologically Important Peptides</b> Definition and structural characteristics of peptides. Description of key natural peptides such as glutathione and angiotensin.	2
<b>Course #3. Proteins: Structure, Function, and Classification</b> General overview and classification of enzymes. Enzyme specificity and kinetic principles, including the Michaelis-Menten equation. Factors affecting enzymatic reaction rates and types of inhibition: competitive, non-competitive, and uncompetitive.	2
<b>Course #4. Enzymes: Classification and Kinetics</b> Differentiation of the trophoblast and development of the embryonic disc during weeks II and III.	2
<b>Course #5. Regulation of Enzyme Activity</b> Mechanisms of enzymatic regulation with a focus on allosteric enzymes and their role in metabolic control.	2
<b>Course #6. Fat-Soluble Vitamins</b> Biochemical characteristics and physiological roles of fat-soluble vitamins (A, D, E, and K).	2
<b>Course #7. Water-Soluble Vitamins</b> Classification, biochemical functions, and clinical importance of water-soluble (hydrosoluble) vitamins.	2
<b>Course #8. Carbohydrates: Structure and Function</b> Overview of monosaccharides, oligosaccharides, polysaccharides, amino sugars, and deoxysugars. Functional aspects of carbohydrates in metabolism.	2
<b>Course #9. Lipids: Structure and Significance</b> Introduction to lipids. Classification and structural diversity. Biological roles and relevance in metabolism.	2
<b>Course #10. Nucleic Acids I: DNA</b>	2

<b>Course Syllabus</b>	<b>Hours</b>
Components of nucleic acids: nitrogenous bases, nucleotides, and nucleosides. DNA structure and replication. Concepts of reverse transcription and telomerase activity.	
<b>Course #11. Nucleic Acids II: RNA</b> Classification, structure, and functions of RNA. RNA biosynthesis (transcription) from DNA templates..	2
<b>Course #12. Protein Biosynthesis and Genetic Code</b> Stages of protein biosynthesis. The genetic code, its decoding during translation, and the biochemical impact of mutations.	2
<b>Course #13. General Concepts of Hormonal Regulation</b> Definition and classification of hormones. Mechanisms of action. Overview of hypothalamic, pituitary, and neurohypophyseal hormones including vasopressin and oxytocin.	2
<b>Course #14. Endocrine Hormones and Mineral Metabolism</b> Pancreatic hormones (insulin and glucagon), thyroid hormones, sex hormones, catecholamines, and hormones regulating calcium-phosphorus metabolism (PTH, calcitonin, calcitriol): structure, synthesis, metabolism, regulation, and physiological effects.	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Laboratory Safety and Solution Chemistry</b> Introduction to occupational safety standards in the biochemical laboratory. Definitions of solutions and methods for expressing concentration (molarity, molality, percent concentration, and normality).	2
<b>Laboratory Work #2. pH of Solutions</b> Definition of pH. Determination of pH using acid-base indicators and interpretation of colorimetric results.	2
<b>Laboratory Work #3. Buffer Solutions</b> Definition and significance of buffer systems. Experimental determination of pKa and pH of buffer solutions. Evaluation of buffering capacity.	2
<b>Laboratory Work #4. Volumetric Analysis</b> Titrimetric techniques based on acid-base neutralization reactions. Calculation of analyte concentration.	2
<b>Laboratory Work #5. Amino Acids and Proteins</b> General concepts of amino acid structure and function. Buffering capacity and electrophoretic behavior. Qualitative reactions for amino acid identification. Protein precipitation (reversible and irreversible), colorimetric identification methods, and principles of dialysis.	2
<b>Laboratory Work #6. Enzymatic Activity and Kinetics</b> Experimental determination of enzymatic activity. Calculation and interpretation of the Michaelis-Menten constant (Km).	2
<b>Laboratory Work #7. Urease Activity</b> Measurement of urease enzymatic activity under standard conditions.	2
<b>Laboratory Work #8. Factors Influencing Enzyme Activity</b> Study of the effects of temperature, pH, and ionic strength on enzyme function.	2
<b>Laboratory Work #9. Amylase Activity</b> Determination of amylase activity using appropriate substrates and reaction conditions.	2
<b>Laboratory Work #10. Seminar: Amino Acids, Proteins, and Enzymes</b> Review and discussion of theoretical concepts and experimental techniques related to amino acids, proteins, and enzymes.	2
<b>Laboratory Work #11. Nucleic Acid Identification</b> Experimental methods for identifying DNA and RNA in biological samples.	2

Laboratory Syllabus	Hours
<b>Laboratory Work #12. Structural Components of Nucleic Acids</b> Identification of nucleotides, nucleosides, and nitrogenous bases through chemical analysis.	2
<b>Laboratory Work #13. Project Review and Lab Report Evaluation</b> Correction and assessment of lab reports or student projects. Feedback and improvement strategies.	2
<b>Laboratory Work #14. Final Colloquium</b> Summative evaluation based on laboratory activities and theoretical understanding throughout the course.	2

Minimum References:
1. Baynes, J. W. & Dominiczak, M. H. (2022). Medical Biochemistry, 6th Edition.
2. Lieberman, M. A. & Peet, A. (2022). Marks' Basic Medical Biochemistry: A Clinical Approach, 6th Edition.
3. Lippincott Illustrated Reviews: Biochemistry, 9th Edition (2025).
4. Chatterjea, M. N., Shinde, R., & Rana, S. (2023). Textbook of Medical Biochemistry, 9th Edition.
5. Teaching support materials

Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector
<ul style="list-style-type: none"> <li>The content of the Biochemistry discipline aligns with the expectations of the medical academic community, professional associations, and healthcare employers by providing essential molecular and biochemical foundations for understanding human physiology, pathology, and pharmacology. It develops analytical and interpretative skills required for clinical reasoning and laboratory practice, in accordance with international standards (WFME, AMEE) and the professional competencies demanded in modern medical education and healthcare systems.</li> </ul>

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>Systematic and structured presentation of the fundamental principles of biochemistry, focusing on the molecular structure and function of biomolecules, enzymatic processes, and basic metabolic pathways, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Practical activities involving biochemical laboratory techniques and experimental analysis of biomolecules, with emphasis on the interpretation of biochemical data and their relevance to physiological processes.</li> </ul>

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:
<ul style="list-style-type: none"> <li></li> </ul>

Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams
<ul style="list-style-type: none"> <li></li> </ul>

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

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<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %
<b>Description of the actual methods of examination – E</b>	
<ul style="list-style-type: none"><li>•</li></ul>	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
<ul style="list-style-type: none"><li>•</li></ul>	<ul style="list-style-type: none"><li>•</li></ul>

**Date of completion**

12.09.2025

**Discipline Coordinator,  
Rusu Elena, Assoc. Prof., PhD**

**Head of Department,  
Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,  
Rusu Elena, Assoc. Prof., PhD**

**Laboratory Coordinator,  
Rusu Elena, Assoc. Prof., PhD  
Petruț Ștefana Maria, Lecturer**

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	MOLECULAR AND CELLULAR BIOLOGY				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Tănase Cristiana, Professor				
Didactic position, name and surname for the <b>Course Coordinator</b>	Tănase Cristiana, Professor				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Necula Laura, Assoc.Professor				
Discipline Code	MLE.1.1.3	Formative category of the discipline		FS	
Year of Study	I	Semester	1	Type of the final evaluation (E, V)	E1
Discipline Regime (M-mandatory, E-elective)			M	No. of credits	5

No. of Hours per week	3	Out of which are Course hours:	1	Seminar / Practical Activity / Clinical Stage	2
Total of hours in the curriculum	42	Out of which are Course hours:	14	Seminar / Practical Activity / Clinical Stage	28
		Total hours per semester	125	Total hours of individual study	83

Distribution of time pool per week	Hours
1. Study of the course material	4
2. Study according with the course support, manuals	31
3. Study of the minimal bibliography	4
4. Additional documentation in the library	4
5. Specific activity for the seminary or laboratory	2

Distribution of time pool per week	Hours
6. Homework, translations, etc.	1
7. Preparing for different written exams	2
8. Preparing for oral examinations	1
9. Preparing for the final examination	12
10. Consultations	4
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	15
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	MOLECULAR AND CELLULAR BIOLOGY
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>Understanding the structural and functional organization of prokaryotic and eukaryotic cells.</li> <li>Identifying cellular organelles and correlating structure with function using microscopy and molecular methods.</li> <li>Explaining mechanisms of membrane transport, cell signaling, and gene expression.</li> <li>Applying cell biology concepts to interpret normal and pathological cellular processes.</li> <li>Performing and evaluating basic laboratory techniques in microscopy and cell analysis.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>Development of analytical, critical, and integrative thinking in scientific contexts.</li> <li>Ability to communicate scientific information clearly and professionally.</li> <li>Teamwork, ethical behavior, and responsibility in laboratory and research settings.</li> <li>Use of digital and bioinformatics tools for data acquisition and interpretation.</li> <li>Commitment to continuous learning and adaptation to scientific and technological advances.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>To provide fundamental knowledge of cell structure, function, and molecular organization.</li> <li>To understand the cell as the structural and functional unit of life.</li> <li>To establish the basis for advanced biomedical and clinical disciplines.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>Describe the organization and composition of cellular membranes, organelles, and the cytoskeleton.</li> <li>Explain mechanisms of transport, signaling, and gene expression in eukaryotic cells.</li> <li>Identify and interpret cellular structures using light and electron microscopy.</li> <li>Understand the cell cycle, division, and mechanisms of cellular regulation.</li> <li>Apply theoretical and practical knowledge to biomedical and diagnostic contexts.</li> </ul>

Learning Outcomes	
<b>Knowledge</b>	Students identify the structural organization and molecular components of prokaryotic and eukaryotic cells, describe the functions of cellular organelles, membrane systems, and the cytoskeleton in maintaining cellular activity, understand the molecular mechanisms of membrane transport, signal transduction, gene expression, and protein synthesis.
<b>Skills</b>	Students interpret cellular structures using light and electron microscopy techniques, analyze molecular and cellular processes such as membrane transport, cell signaling, and cell division, evaluate experimental and bioinformatic data obtained from cellular and molecular biology investigations.
<b>Responsibilities/ Autonomy</b>	Students apply cellular and molecular biology principles in the interpretation of normal and pathological cellular processes, respect laboratory techniques and methodological standards during microscopy and cellular analysis activities, use scientific reasoning and critical thinking when analyzing experimental data and biomedical information.

Course Syllabus	Hours
<b>Course #1. Course Introduction and History: The Cell – Organizational Models and Chemical Composition</b> Overview of the historical development of cell biology and its relevance in modern science. Introduction to cell theory, models of cellular organization (prokaryotic vs. eukaryotic), and the basic chemical constituents of the cell.	1
<b>Course #2. Cell Membrane and Endomembrane System: Molecular Organization</b> Structural and functional organization of the cell membrane and internal membrane systems. Emphasis on lipid bilayer, membrane proteins, and compartmentalization within eukaryotic cells.	1
<b>Course #3. Membrane Transport – Part I</b> Passive transport mechanisms, including simple diffusion, facilitated diffusion, and osmosis. Role of membrane permeability and selective transport.	1
<b>Course #4. Membrane Transport – Part II</b> Active transport systems and vesicular transport. Ion pumps, endocytosis, exocytosis, and the role of ATP in transmembrane transport.	1
<b>Course #5. Cellular Projections: Receptors and Signal Transduction</b> Structure and function of cellular extensions such as cilia and flagella. Mechanisms of cellular signaling, including receptor-ligand interactions and intracellular signaling cascades.	1
<b>Course #6. Cytoplasm: The Cell's Structural Framework and Cellular Motility</b> Components of the cytoskeleton, including microtubules, microfilaments, and intermediate filaments. Mechanisms of cell shape maintenance and movement.	1
<b>Course #7. Specialized Membrane Structures: Intercellular Junctions</b> Study of tight junctions, desmosomes, and gap junctions. Their roles in cellular adhesion, communication, and tissue integrity.	1
<b>Course #8. Nucleus: Nuclear Envelope, Nucleoplasm, and Chromatin Organization</b> Nuclear architecture and its functional components. Structure and dynamics of the nuclear envelope, nucleoplasm, and chromatin.	1
<b>Course #9. Genes: Regulation of Gene Expression and Protein Synthesis</b> Structure and organization of the eukaryotic gene. Mechanisms of transcription and translation. Regulatory sequences and factors involved in gene expression.	1

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #10. Ribosomes and Proteasomes: Cytoplasmic Inclusions</b> Structure and function of ribosomes in protein synthesis. Role of proteasomes in protein degradation. Overview of cytoplasmic inclusions and their cellular significance.	1
<b>Course #11. Endoplasmic Reticulum and Golgi Apparatus</b> Functional morphology of rough and smooth ER. Role of the ER and Golgi in protein modification, packaging, and transport.	1
<b>Course #12. Post-translational Protein Processing</b> Processes involved in the maturation of synthesized proteins, including folding, cleavage, and chemical modifications.	1
<b>Course #13. Mitochondria</b> Ultrastructure and bioenergetic functions of mitochondria. Role in ATP production, apoptosis, and metabolic integration.	1
<b>Course #14. Lysosomes, Peroxisomes, and Vesicular Transport</b> Enzymatic roles of lysosomes and peroxisomes in cellular digestion and detoxification. Mechanisms and pathways of vesicular trafficking within cells.	1

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. General Aspects of Cell Study</b> Introduction to the principles and significance of studying cells in the context of biological and medical sciences. Overview of basic cell features and methods used in cellular investigation.	2
<b>Laboratory Work #2. Microscopy Techniques: Light (Optical) Microscopy</b> Principles and operation of light microscopy. Understanding magnification, resolution, and contrast. Applications in the observation of stained cellular structures.	2
<b>Laboratory Work #3. Microscopy Techniques: Electron Microscopy</b> Introduction to transmission and scanning electron microscopy. Comparative analysis with light microscopy. Applications in ultrastructural studies.	2
<b>Laboratory Work #4. Microscopic Sample Preparation: Stages of Processing</b> Step-by-step processing of biological samples for microscopic analysis. Fixation, embedding, sectioning, and mounting techniques.	2
<b>Laboratory Work #5. Staining Techniques</b> Types of staining used in microscopy. Importance of contrast enhancement. Overview of common histological and cytological stains	2
<b>Laboratory Work #6. Cell Structure Under the Light Microscope: Nucleus, Cytoplasm, and Organelles</b> Identification and description of visible cellular components using light microscopy. Correlation of structure with function.	2
<b>Laboratory Work #7. Cell Ultrastructure: Cell Membranes</b> Examination of membrane architecture and function using high-resolution microscopy. Discussion on membrane dynamics and molecular composition.	2
<b>Laboratory Work #8. Cell Ultrastructure: Organelles and Nucleus</b> Observation and interpretation of organelles such as mitochondria, ER, Golgi apparatus, and nuclear structures at the ultrastructural level.	2
<b>Laboratory Work #9. Cell Cultures</b> Introduction to in vitro cultivation of cells. Techniques for maintaining and studying cell lines. Applications in research and diagnostics.	2
<b>Laboratory Work #10. Cell Cycle and Cell Division</b> Phases of the cell cycle. Mechanisms and microscopic identification of mitosis and meiosis. Regulation and significance in growth and development.	2

Laboratory Syllabus	Hours
<b>Laboratory Work #11. In Silico Analysis of Biological Data</b> Utilization of computational tools for the analysis of biological sequences and structures. Introduction to bioinformatics approaches.	2
<b>Laboratory Work #12. Biomedical Databases, Molecular Diagnostics, and Proteomic Approaches</b> Accessing and interpreting information from biomedical databases. Overview of molecular diagnostic techniques and proteomics in modern biology.	2
<b>Laboratory Work #13. Review of Practical Material and Exam Preparation</b> Consolidation of laboratory knowledge and technical skills. Focused review to prepare students for practical evaluation.	2
<b>Laboratory Work #14. Practical Exam</b> Assessment of practical competencies and understanding of microscopy, cell structure, and related analytical techniques.	2

Minimum References:
1. Alberts B, Johnson A, Lewis J, Morgan D, Raff M, Roberts K, Walter P. Molecular Biology of the Cell. 7th ed. New York: W.W. Norton & Company; 2023.
2. Pollard TD, Earnshaw WC, Lippincott-Schwartz J. Cell Biology. 4th ed. Amsterdam: Elsevier; 2023.
3. Verma PS, Agarwal VK. Cell Biology: Cytology, Biomolecules and Molecular Biology. New Delhi: S. Chand Publishing; 2022.
4. LeClair RJ. Cell Biology, Genetics, and Biochemistry for Pre-Clinical Students. Minneapolis: University of Minnesota Libraries Publishing; 2021.
5. Mescher AL. Junqueira's Basic Histology: Text and Atlas. 17th ed. New York: McGraw-Hill Education; 2023.
6. Teaching support materials

Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector
<ul style="list-style-type: none"> <li>The content of the Molecular and Cellular Biology discipline meets the expectations of the medical academic community and healthcare employers by providing essential knowledge of cellular structure, function, and molecular mechanisms. It aligns with international standards (WFME, AMEE) and develops competencies in microscopy, molecular analysis, and data interpretation, fundamental for biomedical research and clinical practice.</li> </ul>

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>Systematic and structured presentation of the fundamental principles of molecular and cellular biology, focusing on the structure and function of cells, molecular mechanisms of gene expression, and cellular regulation, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Practical activities involving the study and analysis of cellular and molecular processes using laboratory techniques specific to molecular and cellular biology, with emphasis on data interpretation and functional correlations.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

•

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

•

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

•

<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %
<b>Description of the actual methods of examination – E</b>	
•	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
•	•

**Date of completion**

15.09.2025

**Discipline Coordinator,**

**Tănase Cristiana, Professor**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,**

**Tănase Cristiana, Professor**

**Laboratory Coordinator,**

**Necula Laura, Assoc. Professor**

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	GENETICS				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Budişteanu Magdalena, Assoc. Professor				
Didactic position, name and surname for the <b>Course Coordinator</b>	Budişteanu Magdalena, Assoc. Professor				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Budişteanu Magdalena, Assoc. Professor				
Discipline Code	MLE.1.1.4	Formative category of the discipline		FS	
Year of Study	I	Semester	1	Type of the final evaluation (E, V)	E1
Discipline Regime (M-mandatory, E-elective)			M	No. of credits	5

No. of Hours per week	3	Out of which are Course hours:	1	Seminar / Practical Activity / Clinical Stage	2
Total of hours in the curriculum	42	Out of which are Course hours:	14	Seminar / Practical Activity / Clinical Stage	28
		Total hours per semester	125	Total hours of individual study	83

Distribution of time pool per week	Hours
1. Study of the course material	4
2. Study according with the course support, manuals	31
3. Study of the minimal bibliography	4
4. Additional documentation in the library	4
5. Specific activity for the seminary or laboratory	2

Distribution of time pool per week	Hours
6. Homework, translations, etc.	1
7. Preparing for different written exams	2
8. Preparing for oral examinations	1
9. Preparing for the final examination	12
10. Consultations	4
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	15
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	GENETICS
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the molecular, chromosomal, and population bases of heredity and genetic variation.</li> <li>• Identifying and interpreting chromosomal and gene abnormalities using classical and molecular genetics techniques.</li> <li>• Applying genetic principles in medical contexts for diagnosis, prognosis, and genetic counseling.</li> <li>• Recognizing the mechanisms and inheritance patterns of genetic diseases and syndromes.</li> <li>• Using laboratory and computational tools for genetic data analysis and interpretation.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of analytical and critical thinking for solving medical and genetic problems.</li> <li>• Integration of scientific, ethical, and clinical perspectives in decision-making.</li> <li>• Effective communication of genetic information to patients, families, and professional teams.</li> <li>• Teamwork, professional responsibility, and respect for bioethical principles in clinical genetics.</li> <li>• Continuous learning and adaptability to advances in molecular genetics and genomic medicine.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide students with the fundamental principles of human genetics and their clinical applications.</li> <li>• To understand the genetic basis of inheritance, variability, and disease.</li> <li>• To establish the connection between classical genetics, molecular biology, and modern genomic medicine.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Describe the structure, organization, and behavior of human chromosomes and genes.</li> <li>• Explain mechanisms of inheritance, gene expression, and mutation.</li> <li>• Identify and interpret chromosomal, molecular, and population-level genetic abnormalities.</li> <li>• Understand the principles of genetic diagnosis, prenatal testing, and genetic counseling.</li> <li>• Apply genetic knowledge to clinical cases, research, and ethical decision-making in medicine.</li> </ul>

Learning Outcomes	
<b>Knowledge</b>	Students identify the molecular and chromosomal mechanisms underlying heredity and genetic variation, describe the structure and function of genes and chromosomes, as well as the mechanisms of mutation and gene expression, understand patterns of inheritance, genetic diseases, chromosomal syndromes, and the principles of population genetics.
<b>Skills</b>	Students interpret pedigree charts and inheritance patterns in normal and pathological traits, analyze genetic data obtained through cytogenetic and molecular techniques such as karyotyping, FISH, PCR, and sequencing, evaluate genetic laboratory results and genotype–phenotype correlations in clinical contexts.
<b>Responsibilities/ Autonomy</b>	Students apply genetic principles in the interpretation of hereditary diseases and chromosomal abnormalities, adhere to ethical and professional standards when discussing genetic testing, diagnosis, and counseling, use scientific reasoning and critical analysis when evaluating genetic information in clinical and research contexts.

Course Syllabus	Hours
<b>Course #1. The Pedigree:</b> How to interpret a pedigree chart. Modes of inheritance. Penetrance and expressivity. Mosaicism. Challenges in pedigree interpretation	2
<b>Course #2. Structure of Human Chromosomes:</b> Common structural features and chromosome-specific elements. Chromosome behavior during cell division	2
<b>Course #3. Studying Human Chromosomes:</b> Classical and molecular cytogenetics – karyotyping, fluorescence in situ hybridization (FISH), comparative genomic hybridization using microarrays (arrayCGH). Indications, advantages, and limitations of each technique	2
<b>Course #4. Numerical and Structural Chromosomal Abnormalities:</b> Variations in chromosome number, balanced and unbalanced anomalies, constitutional vs. mosaic abnormalities	2
<b>Course #5. Chromosomal Syndromes:</b> Down syndrome, Edwards syndrome, Patau syndrome, Cri-du-chat syndrome, Wolf-Hirschhorn syndrome, Turner syndrome, Klinefelter syndrome	2
<b>Course #6. Microdeletion Syndromes:</b> Angelman syndrome, Prader-Willi syndrome, Williams-Beuren syndrome, DiGeorge syndrome	2
<b>Course #7. Mendelian Inheritance in Humans:</b> Analysis of normal and pathological traits, Mendel’s laws, autosomal dominant and recessive inheritance, X-linked inheritance, Y-linked inheritance	2
<b>Course #8. Structure of Nucleic Acids and Genes:</b> Exons, introns, transcription, translation, and the epigenome	2
<b>Course #9. DNA Analysis in Patients:</b> Hybrid nucleic acids, Polymerase Chain Reaction (PCR), types of PCR – indications, advantages, and limitations	2
<b>Course #10. Gene Mutations:</b> Deletions, duplications, transcriptional and splicing mutations, translation errors, loss-of-function and gain-of-function mutations, genotype-phenotype correlations	2
<b>Course #11. Studying Gene Mutations:</b>	2

<b>Course Syllabus</b>	<b>Hours</b>
Sequencing methods – types, indications, and interpretation	
<b>Course #12. Teratogenesis:</b> Teratogenic factors and their effects, mechanisms of teratogenicity, teratogenic agents and their phenotypic impact	2
<b>Course #13. Population Genetics:</b> Genetic structure of populations, Hardy-Weinberg equilibrium, genetic markers, factors influencing genetic variation, heterozygosity, and the "founder effect"	2
<b>Course #14. Genetic Services for Families with Hereditary Conditions:</b> Importance of genetic diagnosis, risk assessment, genetic counseling, dysmorphology evaluation, prenatal and postnatal genetic testing, and genetic disease management	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Family Investigation:</b> Methods and techniques; preparation for genetic screening	2
<b>Laboratory Work #2. Pedigree Methodology:</b> Construction techniques, conventional symbols, and interpretation	2
<b>Laboratory Work #3. Normal Human Karyotype:</b> How to create and analyze a human karyotype	2
<b>Laboratory Work #4. Chromosome Banding Analysis:</b> Types of chromosome bands, staining techniques, and their importance in identifying genetic pathologies	2
<b>Laboratory Work #5. Numerical and Structural Chromosomal Aberrations:</b> Mechanisms, standard nomenclature, and demonstration methods	2
<b>Laboratory Work #6. Sex Chromatin:</b> Detection techniques, identification of genetic sex, and medical applications	2
<b>Laboratory Work #7. Chromosomal Syndromes:</b> Recognition of common syndromes based on characteristic phenotypic features	2
<b>Laboratory Work #8. Molecular Cytogenetic Techniques:</b> FISH and arrayCGH; recognition of common microdeletion syndromes based on specific phenotypic traits	2
<b>Laboratory Work #9. Study of Meiosis in Humans:</b> Phases of meiotic division, importance of meiosis, and examples of both normal and pathological cases	2
<b>Laboratory Work #10. Mendelian Inheritance:</b> Mendel's laws, monohybrid and dihybrid crosses, polygenic traits, and their relevance to normal and pathological characteristics	2
<b>Laboratory Work #11. Erythrocyte Genetic Systems in Humans:</b> ABO, hemoglobin (Hb), and Rh blood group systems; case studies and issues related to genetic relationships	2
<b>Laboratory Work #12. Biometric Assessment Across Developmental Stages:</b> Constitutional body types and their medical implications	2
<b>Laboratory Work #13. Dermatoglyphics Analysis:</b> The role of dermatoglyphs (skin patterns) and hair distribution (pilosis) in genetic diseases	2
<b>Laboratory Work #14. Genetic Diseases:</b> Mechanisms of occurrence, investigative techniques, and case study examples	2

**Minimum References:**

1. Turnpenny P, Ellard S, Cleaver R, editors. *Emery's Elements of Medical Genetics and Genomics*. 16th ed. Edinburgh: Elsevier; 2022.
2. Jorde LB, Carey JC, Bamshad MJ. *Medical Genetics and Genomics*. 7th ed. Philadelphia: Elsevier; 2026.
3. Nussbaum RL, McInnes RR, Willard HF. *Thompson & Thompson Genetics in Medicine*. 9th ed. Philadelphia: Elsevier; 2023.
4. Strachan T, Goodship J, Chinnery PF. *Human Molecular Genetics*. 6th ed. New York: CRC Press, Taylor & Francis Group; 2024.
5. Pierce BA. *Genetics: A Conceptual Approach*. 8th ed. New York: W.H. Freeman and Company; 2024.
6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- The content of the Genetics discipline aligns with the expectations of the scientific and professional medical community by providing essential knowledge on the molecular and chromosomal basis of heredity, genetic variation, and disease mechanisms. It reflects international standards (WFME, AMEE) and addresses competencies expected by healthcare employers, including genetic analysis, interpretation of laboratory data, and understanding of hereditary syndromes. The course prepares students for modern clinical practice, research, and genetic counseling, integrating theoretical knowledge with diagnostic and ethical aspects of human genetics.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of the fundamental principles of medical genetics, focusing on gene structure and function, mechanisms of inheritance, genetic variability, and the molecular basis of hereditary diseases, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>• Practical activities involving the analysis and interpretation of genetic information and the application of laboratory methods used in genetic investigations, with emphasis on clinical correlations.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

- 

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

- 

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

-

<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %
<b>Description of the actual methods of examination – E</b>	
•	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
•	•

**Date of completion**

12.09.2025

**Discipline Coordinator,  
Budişteanu Magdalena, Assoc.Professor**

**Head of Department,  
Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,  
Budişteanu Magdalena, Assoc.Professor**

**Laboratory Coordinator,  
Budişteanu Magdalena, Assoc.Professor**

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	MEDICAL INFORMATICS AND BIOSTATISTICS				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Apostolescu Cătălin, Assoc. Professor				
Didactic position, name and surname for the <b>Course Coordinator</b>	Apostolescu Cătălin, Assoc. Professor				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Apostolescu Cătălin, Assoc. Professor				
Discipline Code	MLE.1.1.5	Formative category of the discipline		CS	
Year of Study	I	Semester	1	Type of the final evaluation (E, V)	E1
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	<b>3</b>

No. of Hours per week	<b>3</b>	Out of which are Course hours:	<b>1</b>	Seminar / Practical Activity / Clinical Stage	<b>2</b>
Total of hours in the curriculum	<b>42</b>	Out of which are Course hours:	<b>14</b>	Seminar / Practical Activity / Clinical Stage	<b>28</b>
		Total hours per semester	<b>75</b>	Total hours of individual study	<b>33</b>

Distribution of time pool per week	Hours
1. Study of the course material	1
2. Study according with the course support, manuals	11
3. Study of the minimal bibliography	1
4. Additional documentation in the library	1
5. Specific activity for the seminary or laboratory	2

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	4
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	5
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	MEDICAL INFORMATICS AND BIOSTATISTICS
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the role of medical informatics and biostatistics in healthcare, clinical research, and decision-making.</li> <li>• Applying statistical methods to analyze biomedical and epidemiological data.</li> <li>• Using computer-based tools and databases (e.g., MEDLINE, Access, Excel) for information management and research.</li> <li>• Implementing data protection, cybersecurity, and ethical principles in digital medical environments.</li> <li>• Interpreting biostatistical results and integrating them into clinical and public health contexts.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of analytical and critical thinking in processing and interpreting medical data.</li> <li>• Effective use of digital technologies and online communication tools in medical practice.</li> <li>• Teamwork, professional ethics, and responsibility in managing health information.</li> <li>• Capacity for continuous learning and adaptation to technological innovations in healthcare.</li> <li>• Integration of quantitative reasoning and problem-solving in multidisciplinary contexts.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide students with foundational knowledge of computer science and statistics applied to medicine.</li> <li>• To develop digital literacy and competence in data management, analysis, and interpretation.</li> <li>• To prepare students for evidence-based clinical practice supported by informatics and biostatistics.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Understand the evolution and ethical implications of algorithmic and digital technologies in healthcare.</li> <li>• Acquire practical skills in using databases, statistical software, and online medical resources.</li> <li>• Apply basic statistical methods (mean, variance, correlation, regression, probability distributions) to medical data.</li> <li>• Utilize informatics systems for data storage, retrieval, and clinical decision support.</li> <li>• Recognize cybersecurity risks and apply strategies for data protection and confidentiality in healthcare settings.</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the fundamental concepts of medical informatics, digital technologies, and biostatistics used in healthcare and biomedical research, describe statistical measures and probability concepts used in the analysis of biomedical and epidemiological data, understand the principles of medical databases, information systems, and cybersecurity in healthcare environments.
<b>Skills</b>	Students interpret biomedical data using statistical indicators such as mean, variance, percentiles, and correlation, analyze medical information retrieved from digital databases and online biomedical resources, evaluate datasets and graphical representations using computer-based tools and statistical software.
<b>Responsibilities/ Autonomy</b>	Students apply statistical reasoning and digital tools in the analysis and interpretation of medical data, respect principles of data protection, cybersecurity, and ethical management of medical information, use informatics resources and evidence-based approaches to support clinical decision-making and research activities.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Development of Algorithmic Machines:</b> Evolution of computer science, the role of abstraction, and ethical, social, and legal implications	4
<b>Course #2. The Internet:</b> Web browsing, email, Usenet newsgroups, online auctions, e-commerce, file sharing, and online chat	4
<b>Course #3. Database Management Systems:</b> Introduction to Microsoft Access – principles of database design, using Design View, working with tables, reports, queries, and forms	2
<b>Course #4. Databases in Medicine:</b> Introduction to MEDLINE	2
<b>Course #5. Biostatistics:</b> Charts and histograms, distribution terminology, median, arithmetic mean, deciles, percentiles, quartiles, variance, and normal distribution	6
<b>Course #6. E-Commerce:</b> Principles and applications	2
<b>Course #7. Social Networks:</b> Uses, benefits, and potential risks	2
<b>Course #8. Microsoft PowerPoint:</b> Creating and presenting visual content	2

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #9. Spam:</b> Identification and prevention	1
<b>Course #10. Computer Viruses:</b> Types, effects, and examples	1
<b>Course #11. Cybersecurity Measures:</b> Digital signatures, encryption, authentication, and speech-based security systems	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Windows Operating System:</b> Options and settings, Word multitasking and taskbar, organizing the workspace, and establishing connections	4
<b>Laboratory Work #2. Database Management Systems:</b> Introduction to Microsoft Access – starting the program, navigating the database window, working with tables, forms, queries, and reports; principles of database design; using the wizard and Design View approaches	6
<b>Laboratory Work #3. Digital Communication and Information Services:</b> Communication tools, software, and services; internet service providers, online platforms, creating and managing accounts; collecting, using, tracking, and sending digital content; methods of response and interaction	4
<b>Laboratory Work #4. MedlinePlus:</b> Accessing drug information, medical encyclopedias, dictionaries, news, and domain-specific nomenclatures	4
<b>Laboratory Work #5. Biostatistics:</b> Visual data representation and graphic synthesis	4
<b>Laboratory Work #6. E-Commerce:</b> Online shops, auctions, and payment methods	2
<b>Laboratory Work #7. Social media:</b> Uses, functions, and potential impacts	2
<b>Laboratory Work #8. Computer Security Measures:</b> Strategies for protecting digital data and systems	2

<b>Minimum References:</b>
1. Hersh W, editor. Health Informatics: Practical Guide. 8th ed. Burlington, MA: Informatics Education; 2022.
2. Dinov ID. Data Science and Predictive Analytics: Biomedical and Health Applications Using R. 2nd ed. Cham, Switzerland: Springer International Publishing; 2023.
3. Rosner B. Fundamentals of Biostatistics. 10th ed. Boston, MA: Cengage Learning; 2020.
4. Lubliner DJ. Biomedical Informatics: An Introduction to Information Systems and Software in Medicine and Health. 1st ed. Boca Raton, FL: Auerbach Publications, CRC Press (Taylor & Francis Group); 2016.
5. Kulikowski CA, Shortliffe EH, editors. Health Informatics Series. Ongoing series, Cham, Switzerland: Springer Nature; 2020–2025.
6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- The content of the Medical Informatics and Biostatistics discipline aligns with the expectations of the academic and professional medical community by integrating fundamental knowledge of information technology, data management, and statistical analysis in healthcare. It meets international standards (WFME, AMEE) and responds to the needs of healthcare institutions for professionals skilled in digital literacy, data interpretation, and evidence-based decision-making. The discipline supports the development of competencies required by employers in modern medicine—such as the use of medical databases, biostatistical tools, cybersecurity principles, and health information systems—essential for clinical, research, and public health practice.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of the fundamental principles of medical informatics and biostatistics, focusing on data management, statistical methods applied in medical research, and the use of information technologies in healthcare, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>• Practical activities involving the application of statistical methods and informatics tools for the analysis and interpretation of medical data, with emphasis on data processing, statistical evaluation, and their relevance in medical research and clinical practice.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

- 

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

- 

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

- 

Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

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Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**

16.09.2025

**Discipline Coordinator,  
Apostolescu Cătălin, Assoc. Professor**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,  
Apostolescu Cătălin, Assoc. Professor**

**Laboratory Coordinator,  
Apostolescu Cătălin, Assoc. Professor**

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	MEDICAL SPECIALIZED COMMUNICATION IN MODERN (ROMANIAN) FOREIGN LANGUAGES (I)				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Buză Iulia, Lecturer				
Didactic position, name and surname for the <b>Course Coordinator</b>	Buză Iulia, Lecturer				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Buză Iulia, Lecturer				
Discipline Code	MLE.1.1.6	Formative category of the discipline		CS	
Year of Study	I	Semester	1	Type of the final evaluation (E, V)	E1
Discipline Regime (M-mandatory, E-elective)			M	No. of credits	3

No. of Hours per week	2	Out of which are Course hours:	1	Seminar / Practical Activity / Clinical Stage	1
Total of hours in the curriculum	28	Out of which are Course hours:	14	Seminar / Practical Activity / Clinical Stage	14
		Total hours per semester	75	Total hours of individual study	47

Distribution of time pool per week	Hours
1. Study of the course material	2
2. Study according with the course support, manuals	17
3. Study of the minimal bibliography	2
4. Additional documentation in the library	2
5. Specific activity for the seminary or laboratory	1

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	6
10. Consultations	2
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	8
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	MEDICAL SPECIALIZED COMMUNICATION IN MODERN (ROMANIAN) FOREIGN LANGUAGES (I)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Acquiring the linguistic and communicative skills necessary to interact with patients and medical staff in Romanian.</li> <li>• Using appropriate medical terminology in clinical and academic contexts.</li> <li>• Developing oral and written fluency for effective participation in medical consultations, case discussions, and documentation.</li> <li>• Applying grammatical and lexical structures relevant to patient interviews, case histories, and healthcare communication.</li> <li>• Understanding and correctly using Romanian terminology derived from Latin and Greek medical roots.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Developing intercultural and interpersonal communication skills within the medical environment.</li> <li>• Enhancing empathy, professionalism, and ethical communication with patients.</li> <li>• Integrating teamwork and collaboration through role-play and simulated doctor–patient interactions.</li> <li>• Strengthening self-learning strategies for continuous linguistic and professional improvement.</li> <li>• Promoting adaptability and confidence in real-life clinical communication situations.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To enable foreign medical students to communicate effectively in Romanian in professional and healthcare settings.</li> <li>• To build a functional vocabulary and grammatical foundation for medical communication.</li> <li>• To foster confidence and accuracy in oral and written interactions with patients and healthcare professionals.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Identify and use core medical vocabulary related to anatomy, diseases, symptoms, and treatments.</li> <li>• Conduct basic patient interviews and obtain medical histories in Romanian.</li> <li>• Understand and produce clinical dialogues, instructions, and short reports.</li> <li>• Apply correct grammatical structures and medical terms in professional communication.</li> <li>• Recognize and use prefixes, suffixes, and terms of Greek and Latin origin specific to Romanian medical language.</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify Romanian medical vocabulary related to hospital environments, healthcare professions, diseases, symptoms, and treatments, describe the structure and formation of medical terms derived from Greek and Latin roots used in Romanian medical language, understand the linguistic and grammatical structures used in basic clinical communication and patient interviews.
<b>Skills</b>	Students interpret patient descriptions of symptoms and health complaints expressed in Romanian, analyze medical communication scenarios involving patient interviews, diagnosis explanations, and treatment instructions, perform structured doctor–patient dialogues using appropriate Romanian medical terminology.
<b>Responsibilities/ Autonomy</b>	Students use Romanian medical vocabulary in oral and written communication during simulated clinical interactions, empathetic and professional communication strategies when interacting with patients and healthcare personnel, ensure linguistic accuracy and professional terminology in medical discussions and academic contexts.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. People in the Hospital: Vocabulary and Roles</b> Introduction to hospital-related vocabulary, patient-staff interaction, and common versus medical terminology. Focus on infectious disease terms, ward-specific language, and prepositional usage.	1
<b>Course #2. Medical Nouns of Foreign Origin</b> Study of plural forms of Greek and Latin-origin nouns used in medical contexts. Emphasis on accurate usage in anatomy and clinical communication.	1
<b>Course #3. Health Issues and Healthcare Role</b> Overview of healthcare professions, medical services, and the classification of health-related fields. Vocabulary building for career descriptions and functional healthcare language.	1
<b>Course #4. Physicians and Medical Specialties</b> Introduction to common medical specialties and roles of physicians. Practice in identifying and using specialty-related terminology in professional and patient-focused communication.	1
<b>Course #5. Common Diseases and Ailments</b> Practical vocabulary and phrase-building for discussing frequent illnesses, minor injuries, and common patient complaints in clinical settings.	1
<b>Course #6. Disease: Symptoms and Treatment</b>	1

<b>Course Syllabus</b>	<b>Hours</b>
Focused language practice for describing disease symptoms and available treatment options. Emphasis on fluency in taking patient histories and explaining therapeutic measures.	
<b>Course #7. Medical Terminology: Prefixes and Suffixes</b> Introduction to the structure of medical terms. Study of common prefixes and suffixes related to specialists, colors, size, and condition—enhancing term recognition and usage.	1
<b>Course #8. Human Body Systems: Clinical and Functional Language</b> Overview of major human body systems from both anatomical and physiological perspectives. Development of system-related terminology for clinical application.	1
<b>Course #9. Diagnosis and Diagnostic Procedures</b> Vocabulary and structure for discussing diagnostic processes, tests, and procedures. Emphasis on how to interpret, explain, and communicate findings in a medical context.	1
<b>Course #10. Human Anatomy Overview (Part I)</b> Thematic exploration of selected body systems with focus on structure and function. Practice using anatomical terms in clinical descriptions.	1
<b>Course #11. Human Anatomy Overview (Part II)</b> Continuation of system-based anatomy vocabulary. Reinforcement of correct term usage in oral and written medical communication.	1
<b>Course #12. The Skeletal System: Bones and Joints</b> Detailed vocabulary related to bones, types of joints, and musculoskeletal terms. Practice in identifying and describing injuries and anatomical structure.	1
<b>Course #13. Review of Core Terminology and Grammar</b> Consolidation of key vocabulary and grammar: hospital roles, ward language, infectious diseases, medical prepositions, and confusing word pairs.	1
<b>Course #14. Final Revision and Communication Practice</b> Comprehensive review through practical exercises, patient-staff simulations, and oral/written tasks to reinforce and assess language skills acquired during the semester.	1

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Practical Language Use: People in the Hospital</b> Applied vocabulary practice related to hospital settings, including ward terminology, infectious disease names, and prepositional phrases. Exercises to match common terms with their medical equivalents.	1
<b>Laboratory Work #2. Applied Anatomy Terminology: Plural Nouns</b> Exercises on identifying and using plural forms of Greek and Latin-origin medical terms. Focus on integrating accurate terminology into basic clinical conversations.	1
<b>Laboratory Work #3. Health Issues and Medical Careers in Context</b> Interactive classification of health-related fields and functions. Role-play and discussions focused on career paths in healthcare and job-related terminology.	1
<b>Laboratory Work #4. Communicating About Medical Specialties</b> Role-play and vocabulary drills to practice identifying and describing physicians' roles and specialties in clinical settings.	1
<b>Laboratory Work #5. Describing Common Illnesses and Complaints</b> Oral and written practice in expressing common symptoms, patient concerns, and ailments using appropriate medical vocabulary.	1
<b>Laboratory Work #6. Symptoms and Treatment Communication</b> Simulations and dialogues centered on presenting disease symptoms and explaining basic treatment options clearly to patients or peers.	1
<b>Laboratory Work #7. Word Structure Practice: Prefixes and Suffixes</b>	1

<b>Laboratory Syllabus</b>	<b>Hours</b>
Hands-on language exercises focused on building and interpreting medical terms using common prefixes and suffixes related to professions, colors, and sizes.	
<b>Laboratory Work #8. Human Body Systems in Practice</b> Functional language practice through labeling, describing, and discussing the roles of major organ systems, with a focus on clinical communication.	1
<b>Laboratory Work #9. Diagnostic Language and Clinical Tools</b> Vocabulary and dialogue activities centered on discussing diagnostic procedures, test names, and how to communicate results and steps clearly.	1
<b>Laboratory Work #10. Anatomy in Use: Body Systems (Part I)</b> Applied terminology review through diagrams, oral descriptions, and paired speaking tasks focused on select organ systems.	1
<b>Laboratory Work #11. Anatomy in Use: Body Systems (Part II)</b> Continuation of body system descriptions with emphasis on consolidation through speaking and vocabulary games.	1
<b>Laboratory Work #12. The Skeletal System in Context</b> Interactive activities for naming bones and joints, describing injuries or conditions, and using musculoskeletal terms in clinical conversation.	1
<b>Laboratory Work #13. Thematic Review and Language Reinforcement</b> Revision of vocabulary related to hospital environments, personnel, common errors, infectious diseases, and prepositional use in context.	1
<b>Laboratory Work #14. Final Revision and Practical Communication Tasks</b> Comprehensive review through structured role-plays, vocabulary challenges, and real-life communication scenarios to reinforce the semester's practical language skills.	1

<b>Minimum References:</b>
1. Murar I, Nagy E. Romanian for Foreign Medical Students: Language and Communication Skills in Clinical Contexts. 2nd ed. Cluj-Napoca: Casa Cărții de Știință; 2021.
2. Păcurar A, Toma I. Romanian for Medical Purposes: A Practical Course for Foreign Students. 1st ed. Iași: Editura Universității „Grigore T. Popa” din Iași; 2020.
3. Tănase D, Dănilă C. Romanian Language for Medical Students: Vocabulary and Communication. 1st ed. Bucharest: Editura Universitară Carol Davila; 2022.
4. Chabner DE. The Language of Medicine. 12th ed. St. Louis, MO: Elsevier; 2021.
5. Glendinning E, Holmström B. English in Medicine: A Course in Communication Skills. 3rd ed. Cambridge: Cambridge University Press; 2020.
6. Teaching support materials

<b>Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector</b>
<ul style="list-style-type: none"> <li>The content of the Medical Specialized Communication in Modern (Romanian) Foreign Languages (I) discipline aligns with the expectations of the medical academic community and healthcare employers by developing essential communication competencies for clinical and academic contexts in Romanian. It provides foreign medical students with the linguistic and professional tools necessary to interact effectively with patients, colleagues, and healthcare institutions. The course supports the integration of medical terminology, patient-centered communication, and professional ethics in accordance with the standards promoted by international bodies (WFME, AMEE), addressing the practical communication needs required in medical education, clinical training, and healthcare delivery in Romania.</li> </ul>

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>Systematic and structured presentation of the fundamental principles of medical communication in Romanian, focusing on the correct use of specialized medical terminology and communication in clinical contexts, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Practical activities aimed at developing communication skills in Romanian for medical contexts through structured exercises, analysis of medical texts, and simulated doctor–patient interactions.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

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**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

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**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

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Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

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Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
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**Date of completion**

12.09.2025

**Discipline Coordinator,  
Buză Iulia, Lecturer**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,  
Buză Iulia, Lecturer**

**Laboratory Coordinator,  
Buză Iulia, Lecturer**

**Department Approval Date  
18.09.2025**



TITU MAIORESCU UNIVERSITY OF BUCHAREST  
FACULTY OF MEDICINE  
MEDICINE IN ENGLISH PROGRAM  
ACADEMIC YEAR: I



2025-2026

## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	ANATOMY AND EMBRIOLOGY (II)				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Ioan Sorin Tudorache, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Ioan Sorin Tudorache, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Ioan Sorin Tudorache, Assoc. Professor, M.D., PhD Stoica Cristina, Assist. Professor				
Discipline Code	MLE.1.2.7	Formative category of the discipline		FS	
Year of Study	I	Semester	2	Type of the final evaluation (E, V)	E2
Discipline Regime (M-mandatory, E-elective)			M	No. of credits	6

No. of Hours per week	6	Out of which are Course hours:	2	Seminar / Practical Activity / Clinical Stage	4
Total of hours in the curriculum	84	Out of which are Course hours:	28	Seminar / Practical Activity / Clinical Stage	56
		Total hours per semester	150	Total hours of individual study	66

Distribution of time pool per week					Hours
1. Study of the course material					3
2. Study according with the course support, manuals					23
3. Study of the minimal bibliography					3
4. Additional documentation in the library					3
5. Specific activity for the seminary or laboratory					4

Distribution of time pool per week	Hours
6. Homework, translations, etc.	1
7. Preparing for different written exams	2
8. Preparing for oral examinations	1
9. Preparing for the final examination	9
10. Consultations	3
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	12
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	ANATOMY AND EMBRIOLOGY (II)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Use of standardized anatomical terminology to describe the structural organization and spatial relationships within the head, neck, and thoracic regions.</li> <li>• Identification and dissection of key anatomical formations such as the cranial nerves, pharyngeal apparatus, mediastinum, and heart.</li> <li>• Correlation of dissected and imaged anatomical structures (CT, MRI, ultrasound) with clinical procedures (e.g., tracheostomy, thoracocentesis, auscultation).</li> <li>• Recognition and explanation of developmental anomalies derived from improper formation of the pharyngeal arches, stomodeum, or cardiogenic field.</li> <li>• Application of topographical knowledge to the interpretation of regional anatomy and its relevance in surgical and diagnostic contexts.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of oral communication skills using precise anatomical and clinical vocabulary during dissections, presentations, and oral exams.</li> <li>• Strengthening of collaborative skills through teamwork during laboratory activities, dissection sessions, and peer-assisted learning in small groups.</li> <li>• Integration of academic resources (textbooks, atlases, virtual dissection platforms) in independent and guided learning for practical understanding.</li> <li>• Cultivation of critical thinking in recognizing and explaining anatomical variation, functional impairment, or congenital malformations based on embryological foundations.</li> </ul>

<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide comprehensive anatomical knowledge of the head, neck, and thoracic regions, including surface, internal, and sectional anatomy.</li> <li>• To integrate embryological development with the postnatal structure and clinical relevance of cranial, cervical, and thoracic organs and systems.</li> <li>• To train students in the identification, dissection, and description of anatomical structures using cadavers, 3D models, and radiological imaging.</li> <li>• To develop the capacity to make anatomico-clinical correlations relevant to surgery, internal medicine, ENT, and cardiopulmonary specialties.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To recognize and delimitate anatomical regions such as the infratemporal fossa, carotid triangle, mediastinum, and thoracic cavity.</li> <li>• To identify and describe cranial nerves, major vessels (carotid, subclavian, coronary), and visceral structures (lungs, heart, larynx, trachea) through dissection.</li> <li>• To explain the embryological development of the pharyngeal apparatus, facial structures, and cardiothoracic organs and relate them to congenital anomalies.</li> <li>• To correlate anatomical structures with surface landmarks and clinical imaging, supporting procedures like nerve blocks, catheterization, or thoracic auscultation.</li> <li>• To demonstrate anatomical knowledge during oral/practical examinations and collaborative tasks by integrating visual, tactile, and theoretical understanding.</li> </ul>

<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the anatomical structures of the head, neck, and thoracic regions using standardized anatomical terminology, describe the structural organization and spatial relationships of cranial nerves, major vessels, respiratory organs, and the heart, understand the embryological development of the pharyngeal apparatus, craniofacial structures, and cardiothoracic organs, including the origin of major congenital anomalies.
<b>Skills</b>	Students interpret anatomical structures using cadaveric dissection, anatomical models, digital atlases, and medical imaging techniques, analyze topographical relationships between organs, vessels, and nerves in the head, neck, and thoracic regions, evaluate anatomico-clinical correlations relevant to clinical examination, diagnostic imaging, and surgical procedures.
<b>Responsibilities/ Autonomy</b>	Students apply anatomical and embryological knowledge in the interpretation of clinical findings and medical imaging, use standardized anatomical terminology during academic discussions and practical examinations, adhere to ethical and professional standards during dissection activities and collaborative laboratory work.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. The Cranium:</b> Detailed examination of the neurocranium and viscerocranium, focusing on their structural organization, architectural relationships, and key craniometric landmarks essential for clinical orientation.	2
<b>Course #2. Skull Development:</b> Overview of the ossification processes (intramembranous and endochondral) that form the skull. Discussion of developmental timing, growth centers, and postnatal cranial growth patterns.	2
<b>Course #3. Oral Cavity:</b> Anatomy of the tongue, including its musculature, innervation, and functions. Detailed study of dentition with emphasis on the development and arrangement of primary and permanent teeth.	2
<b>Course #4. Temporomandibular Joint (TMJ):</b> Structural anatomy and biomechanics of the TMJ. Consideration of joint function, clinical dysfunctions, and diagnostic imaging techniques.	2
<b>Course #5. Pharyngeal Arches and Pouches:</b> Embryological development of the pharyngeal (branchial) apparatus. Derivatives of each arch and pouch, and their clinical correlations.	2
<b>Course # 6. Stomodeum and the Mesiobranchial Field:</b> Development of the primitive mouth (stomodeum) and its surrounding structures. Derivatives of the mesiobranchial field and associated congenital anomalies.	2
<b>Course #7. Cranial Nerves:</b> Origin, anatomical course, and functional components (motor, sensory, parasympathetic) of the twelve cranial nerves, with clinical relevance.	2
<b>Course #8. Nasal Cavity and Pharynx:</b> Anatomical structure, subdivisions, and spatial relationships of the nasal cavity and pharynx. Integration of developmental and functional perspectives.	2
<b>Course #9. Larynx and Trachea:</b> Anatomy and embryology of the larynx and trachea. Functional aspects related to voice production and airway maintenance. Overview of clinical conditions.	2
<b>Course #10. Topographic Regions of the Head and Neck:</b> Definition and boundaries of the major anatomical regions. Identification of surface landmarks and their relevance to physical examination and procedures.	2
<b>Course #11. The Mediastinum:</b> Anatomical compartments and contents of the mediastinum. Developmental origins of the respiratory tract structures contained within it.	2
<b>Course #12. Development of the Heart and Great Vessels:</b> Stages of heart development, including looping and septation. Formation of the major arteries and veins. Overview of congenital heart defects.	2
<b>Course #13. Vascularization and Innervation of the Heart:</b> Functional anatomy of coronary circulation and cardiac innervation. Role of autonomic inputs in regulating cardiac activity.	2
<b>Course #14. Clinical Anatomy and Imaging:</b> Correlation of anatomical structures with imaging modalities including CT, MRI, and ultrasound. Emphasis on diagnostic relevance and anatomical variation.	2
<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Overview of the Cranium:</b>	2

Laboratory Syllabus	Hours
Detailed examination of the bones forming the skull, including the neurocranium (protects the brain) and viscerocranium (facial skeleton). Study of the calvaria (skullcap) to understand cranial vault structure.	
<b>Laboratory Work #2. Exocranial and Endocranial Base</b> Comparative study of the external (exocranial) and internal (endocranial) surfaces of the skull base, focusing on foramina, grooves, and bony landmarks relevant to neurovascular structures.	2
<b>Laboratory Work #3. Norma Lateralis:</b> Lateral aspect of the skull: detailed study of the temporal, infratemporal, and pterygopalatine fossae, including boundaries, contents, and clinical relevance.	2
<b>Laboratory Work #4. Norma Frontalis:</b> Anterior view of the skull: dissection and analysis of the orbital and nasal cavities, including their skeletal boundaries, foramina, and associated structures.	2
<b>Laboratory Work #5. Colloquium I:</b> First formative assessment covering foundational knowledge of the skull and cranial anatomy, including practical identification and conceptual integration.	2
<b>Laboratory Work #6. Neck Dissection:</b> Introduction to the topographic regions of the neck; dissection of superficial veins, infrahyoid muscles, cervical fascia layers, cervical plexus, and the phrenic nerve within the cervical region.	2
<b>Laboratory Work #7. Dissection of the Vascular-Nervous Sheath of the Neck:</b> Focus on the carotid triangle, with exposure of the common carotid artery, internal jugular vein, vagus nerve, and the thyroid and parathyroid glands.	2
<b>Laboratory Work #8. Suprahyoid Muscles:</b> Dissection of the submandibular triangle, including identification of the suprahyoid muscles, lingual artery, and hypoglossal nerve, highlighting their functional anatomy.	2
<b>Laboratory Work #9. Cervical Sympathetic Chain:</b> Exploration of the cervical sympathetic trunk, prevertebral muscles, and the lymphatic drainage pathways of the head and neck, including regional nodes.	2
<b>Laboratory Work #10. Sternocleidomastoid and Scalene Muscles:</b> Study of these major neck muscles in relation to the accessory nerve and the supraclavicular portion of the brachial plexus, emphasizing surgical and clinical landmarks.	2
<b>Laboratory Work #11. Dissection of the Subclavian Artery and Vein:</b> Dissection to identify the subclavian vessels, their branches, and surrounding structures within the root of the neck.	2
<b>Laboratory Work #12. Glossopharyngeal and Vagus Nerves:</b> Dissection of the cervical segments of cranial nerves IX and X, focusing on their roles in innervating the larynx, trachea, and esophagus.	2
<b>Laboratory Work #13. Head Dissection:</b> Detailed dissection of the facial muscles (mimetic muscles), facial nerve, parotid gland, facial and superficial temporal vessels, and auriculotemporal nerve.	2
<b>Laboratory Work #14. Dissection of the Muscles of Mastication:</b> Includes mandibular sectioning for better visualization of deep structures, study of the maxillary artery and its branches, and the mandibular division of the trigeminal nerve.	2
<b>Laboratory Work #15. Branches of the Trigeminal Nerve:</b> Identification and tracing of the ophthalmic (V1), maxillary (V2), and mandibular (V3) branches; study of associated ganglia: ciliary, pterygopalatine, otic, and submandibular.	2
<b>Laboratory Work #16. Oral Cavity, Tongue, and Pharynx:</b> Practical session on the live anatomy of the oral cavity, tongue, and pharynx, with clinical correlations and surface anatomy demonstrations.	2

Laboratory Syllabus	Hours
<b>Laboratory Work #17. Colloquium II:</b> Second formative assessment to evaluate the knowledge and dissection skills related to the neck and head regions.	2
<b>Laboratory Work #18. Thorax:</b> Introduction to thoracic boundaries, live anatomy, and radiological imaging. Includes thoracic cavity opening, and inspection of the pleura, pleural recesses, and surface projections.	2
<b>Laboratory Work #19. The Mediastinum:</b> Systematic dissection of the mediastinum, identifying its anatomical divisions (superior, anterior, middle, and posterior) and contents.	2
<b>Laboratory Work #20. Thoracic Organs:</b> Study of the thoracic trachea, esophagus, and thymus, along with the course of the vagus and phrenic nerves, thoracic sympathetic trunk, and the great vessels.	2
<b>Laboratory Work #21. Respiratory System:</b> Detailed analysis and dissection of the lungs, including lobes, fissures, and surface anatomy, with clinical correlations such as auscultation and percussion points.	2
<b>Laboratory Work #22. Bronchial Tree and Pulmonary Hilum:</b> Dissection and identification of the bronchial tree, focusing on primary, secondary, and tertiary bronchi, and examination of the pulmonary hilum and pedicles.	2
<b>Laboratory Work #23. Heart Anatomy:</b> Study of the external anatomy of the heart: its position, relations, gross morphology, and connection to the great vessels.	2
<b>Laboratory Work #24. Heart Dissection:</b> Dissection of the heart to reveal internal chambers, valves, and interior structures, with focus on spatial relationships and flow of blood.	2
<b>Laboratory Work #25. Vascularization and Innervation of the Heart:</b> Exploration of the coronary circulation, cardiac conduction system, pericardial sinuses, and identification of surface projections and auscultation points of heart valves.	2
<b>Laboratory Work #26. Colloquium III:</b> Third formative assessment covering thoracic anatomy, including the mediastinum, heart, lungs, and associated structures.	2
<b>Laboratory Work #27. Embryology I:</b> Introduction to early embryological development with emphasis on the formation of the head, neck, and thorax. Focus on gastrulation, neurulation, and the pharyngeal apparatus, including arches, pouches, and clefts.	2
<b>Laboratory Work #28. Embryology II:</b> Continuation of head, neck, and thorax development with focus on organogenesis. Topics include facial and skull development, formation of the thyroid, larynx, and respiratory tract, as well as cardiac morphogenesis.	2

Minimum References:
1. Sadler TW. <i>Langman's Medical Embryology</i> . 15th ed. Wolters Kluwer; 2023. ISBN: 9781975179960.
2. Drake RL, Vogl AW, Mitchell AWM. <i>Gray's Anatomy for Students</i> . 5th ed. Elsevier; 2023. ISBN: 9780323934237.
3. Moore KL, Dalley AF, Agur AMR. <i>Clinically Oriented Anatomy</i> . 9th ed. Wolters Kluwer; 2023. ISBN: 9781975154066.

**Minimum References:**

4. Schünke M, Schulte E, Schumacher U. *Thieme Atlas of Anatomy: General Anatomy and Musculoskeletal System. Latin Nomenclature*. 3rd ed. New York: Thieme Medical Publishers; 2021. ISBN: 9781684205899.
5. Netter FH. *Atlas of Human Anatomy: Classic Regional Approach*. 8th ed. Elsevier; 2022. ISBN: 9780323680424.
6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- The development of analytical course and practical work plans was based on current recommendations from medical school curricula across the European Union, as well as on ECTS guidelines concerning preclinical education.
- The content was structured following consultations with experts in clinical anatomy, radiology, and surgery, in order to ensure applied relevance and alignment with current labor market demands in the healthcare system.
- To support interdisciplinary teaching (anatomy – medical imaging – semiology), periodic meetings were held with academic staff from both preclinical and clinical departments, aiming to integrate functional anatomy, clinical palpation, and surgical landmark concepts into the teaching process.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Interactive learning based on logical and progressive presentation of content.</li> <li>• Multimedia projection of lecture materials, integrating anatomo-clinical imagery and digital atlases.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>• Interactive discussions with emphasis on the clinical applicability of anatomical information.</li> <li>• Classical study through dissection and use of specific teaching materials: skeletal models, 3D anatomical casts, osteological collections, anatomical specimens, and topographic sections.</li> <li>• Practical activity conducted partially on a virtual dissection table, facilitating three-dimensional reconstruction of anatomical structures and the understanding of spatial relationships.</li> <li>• Use of preserved human cadavers for direct identification of anatomical structures.</li> <li>• Presentation of radiological, imaging, and clinical anatomy concepts, correlated with CT, MRI, ultrasound, and anatomical atlas projection.</li> <li>• Practical embryology sessions using histological specimens and interactive digital presentations.</li> <li>• Real-time answers and clarifications provided to students' questions during practical sessions.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

- Attendance of at least 70% of all practical sessions, with mandatory completion of all missed activities, including absences recorded during mid-semester evaluations.
- Completion of thematic assignments to support the understanding of fundamental concepts corresponding to each practical session.
- Identification of basic anatomical structures using a variety of educational materials: skeletal models, osteological collections, anatomical specimens, topographic sections, preserved human cadavers, 3D anatomical casts, as well as classical iconography and medical imaging (X-ray, CT, MRI).
- Active and interactive participation during practical sessions, including responses to the instructor's questions, involvement in discussions, and application of theoretical knowledge in practice.
- Use of the virtual dissection table to deepen the understanding of three-dimensional topographical relationships and to correlate findings with classical dissection and imaging techniques.
- Exploration and consolidation of taught concepts through projected digital anatomical atlases (e.g., Netter, Thieme) to enhance visual anatomical learning.

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams**

- Attainment of a minimum average grade of 5 (five) in all practical tests and evaluations conducted throughout the semester.
- Demonstrated ability to identify major anatomical structures using various educational tools: anatomical specimens, dissected cadaveric material, 3D anatomical models, and the virtual dissection table.

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

- Active participation of the student in lectures and practical sessions, including attendance at demonstrative activities using the virtual dissection table and projected anatomical atlases.
- Successful completion of colloquia and practical-applied examinations in anatomy and embryology, as mandatory stages in the validation of specific competencies.
- Continuous engagement in the learning process through individual study and teamwork, to ensure the assimilation of fundamental knowledge and the ability to establish anatomo-clinical correlations in an interdisciplinary context.

<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

<ul style="list-style-type: none"> <li>The final examination consists of an oral presentation of three topics randomly selected by the student, one from each of the following categories: <ul style="list-style-type: none"> <li>Topics from lecture content;</li> <li>Topics from practical work.</li> </ul> </li> <li>All examination topics are published and communicated to students at the beginning of the semester, ensuring effective and transparent preparation.</li> <li>The exam is conducted in groups of at least three students, in the presence of the course coordinator, the head of practical activities, and the teaching assistant who supervised the group during the semester.</li> <li>Students are granted thinking time, and the assessment is carried out in a transparent and supportive environment, allowing for coherent and logical articulation of knowledge.</li> <li>The choice of oral examination is justified by the nature of the medical profession, where verbal communication is essential, and by the need to assess the student's ability to establish anatomo-clinical correlations.</li> </ul>	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
<ul style="list-style-type: none"> <li>Attendance of at least 70% of practical sessions, with mandatory completion of all missed activities.</li> <li>Completion of all three colloquia during the semester, with a minimum grade of 5 in at least two of them (colloquia may be retaken if failed).</li> <li>Submission of practical session assignments and demonstration of knowledge of basic concepts.</li> <li>Achievement of an average grade of 5 in the practical examinations in anatomy and embryology.</li> <li>Provision of minimally correct answers to the three oral exam topics, demonstrating understanding of the fundamental requirements of the discipline.</li> </ul>	<ul style="list-style-type: none"> <li>Achievement of an average grade above 9 in all three colloquia during the semester.</li> <li>An average above 9 in the practical anatomy and embryology examinations, including accurate anatomical identification and anatomo-clinical justification.</li> <li>Delivery of coherent, complete, and clinically correlated answers to all three oral exam topics, demonstrating advanced competencies and the ability to synthesize and integrate anatomical knowledge.</li> </ul>

**Date of completion**

10.09.2025

**Discipline Coordinator,**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**Head of Department,**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**Course Coordinator,**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**Laboratory Coordinator,**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD

**Stoica Cristina, Assist.Professor**

**Department Approval Date**

18.09.2025



TITU MAIORESCU UNIVERSITY OF BUCHAREST  
FACULTY OF MEDICINE  
MEDICINE IN ENGLISH PROGRAM  
ACADEMIC YEAR: I



2025-2026

## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	BIOCHEMISTRY (II)				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Rusu Elena, Assoc. Prof., PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Rusu Elena, Assoc. Prof., PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Rusu Elena, Assoc. Prof., PhD Petruț Ștefana Maria, Lecturer, PhD				
Discipline Code	MLE.1.2.8	Formative category of the discipline		FS	
Year of Study	I	Semester	2	Type of the final evaluation (E, V)	E2
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	<b>4</b>

No. of Hours per week	4	Out of which are Course hours:	2	Seminar / Practical Activity / Clinical Stage	2
Total of hours in the curriculum	56	Out of which are Course hours:	28	Seminar / Practical Activity / Clinical Stage	28
		Total hours per semester	100	Total hours of individual study	44

Distribution of time pool per week	Hours
1. Study of the course material	2
2. Study according with the course support, manuals	15
3. Study of the minimal bibliography	2
4. Additional documentation in the library	2
5. Specific activity for the seminary or laboratory	2

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	6
10. Consultations	2
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	8
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	BIOCHEMISTRY (II)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the biochemical mechanisms of energy production and metabolic regulation in the human body.</li> <li>• Describing and interpreting the main metabolic pathways of carbohydrates, lipids, proteins, and nucleotides, and their interconnections.</li> <li>• Applying biochemical knowledge to explain physiological and pathological processes related to metabolism.</li> <li>• Performing laboratory techniques for the quantitative and qualitative analysis of biological fluids and enzymatic activities.</li> <li>• Interpreting biochemical test results for clinical diagnosis and patient monitoring.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Developing analytical and critical thinking in the interpretation of biochemical and clinical data.</li> <li>• Applying ethical and professional conduct in laboratory and clinical environments.</li> <li>• Using digital tools and scientific databases for biomedical information retrieval and analysis.</li> <li>• Enhancing teamwork, communication, and problem-solving skills in interdisciplinary medical contexts.</li> <li>• Promoting continuous self-learning and adaptation to scientific and technological progress in medical biochemistry.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide students with an integrated understanding of human metabolism and its regulation.</li> <li>• To establish the biochemical foundation for interpreting metabolic and clinical disorders.</li> <li>• To connect theoretical biochemical knowledge with practical applications in laboratory medicine.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Describe the principles of bioenergetics and the mechanisms of ATP generation.</li> <li>• Explain the pathways and regulation of carbohydrate, lipid, protein, and nucleotide metabolism.</li> <li>• Understand the biochemical basis of metabolic integration and homeostasis.</li> <li>• Perform biochemical determinations of serum enzymes, metabolites, and diagnostic markers.</li> <li>• Correlate biochemical findings with clinical manifestations of metabolic and nutritional disorders.</li> </ul>
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Learning Outcomes	
<b>Knowledge</b>	Students identify the biochemical principles of bioenergetics and ATP production in biological systems, describe the metabolic pathways of carbohydrates, lipids, proteins, and nucleotides and their regulatory mechanisms, understand the biochemical basis of metabolic integration and the clinical significance of metabolic disorders.
<b>Skills</b>	Students interpret biochemical laboratory results related to enzyme activity, metabolic markers, and biological fluids, analyze metabolic pathways and their regulation in physiological and pathological conditions, evaluate biochemical data obtained through laboratory techniques such as spectrophotometry, electrophoresis, and enzymatic assays.
<b>Responsibilities/ Autonomy</b>	Students apply biochemical principles in the interpretation of metabolic processes and laboratory diagnostic results, follow laboratory safety rules and methodological standards during biochemical investigations, use scientific reasoning and analytical thinking when correlating biochemical findings with clinical conditions.

Course Syllabus	Hours
<b>Course #1. Energy Metabolism and Chemical Thermodynamics</b> Overview of energy transformation in biological systems, including redox reactions and the coupling of endergonic and exergonic processes essential for metabolic integration.	2
<b>Course #2. ATP Synthesis and Mitochondrial Bioenergetics</b> Examination of the electron transport chain and oxidative phosphorylation, with emphasis on ATP generation, reactive oxygen species (ROS), and their role in processes like phagocytosis.	2
<b>Course #3. Carbohydrate Digestion and Glycolysis</b> Study of carbohydrate digestion and absorption, followed by a detailed analysis of glycolysis—its enzymatic steps, regulation, and energy yield.	2
<b>Course #4. Pyruvate Metabolism and the Citric Acid Cycle</b> Exploration of pyruvate decarboxylation and the Krebs cycle, including their integration with the pentose phosphate pathway and roles in energy and biosynthetic metabolism.	2
<b>Course #5. Gluconeogenesis and Carbohydrate Interconversion</b> Focus on gluconeogenesis and the glucuronic acid pathway, highlighting their physiological importance in glucose homeostasis and detoxification.	2
<b>Course #6. Glycogen, Fructose, and Galactose Metabolism</b> Discussion of glycogen synthesis and degradation, along with specialized pathways for fructose and galactose metabolism.	2

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #7. Lipid Digestion and <math>\beta</math>-Oxidation</b> Analysis of lipid digestion and absorption, and the mitochondrial degradation of fatty acids through $\beta$ -oxidation for energy production.	2
<b>Course #8. Fatty Acid and Triglyceride Biosynthesis</b> Overview of de novo fatty acid synthesis and triglyceride metabolism, including hormonal regulation and physiological significance.	2
<b>Course #9. Cholesterol and Ketone Body Metabolism</b> Examination of cholesterol biosynthesis, transport, and regulation, as well as ketogenesis and the metabolic role of ketone bodies during fasting.	2
<b>Course #10. Plasma Lipoproteins and Eicosanoid Pathways</b> Study of lipoprotein transport systems and eicosanoid metabolism, including the biosynthesis and function of prostaglandins, leukotrienes, and thromboxanes.	2
<b>Course #11. Protein Digestion and Intracellular Turnover</b> Exploration of dietary protein digestion and mechanisms of intracellular protein degradation, including the ubiquitin-proteasome system.	2
<b>Course #12. Amino Acid Catabolism and the Urea Cycle</b> Detailed look at amino acid degradation pathways and nitrogen disposal through the urea cycle, with additional focus on heme biosynthesis and degradation.	2
<b>Course #13. Nucleotide Metabolism</b> Examination of purine and pyrimidine nucleotide biosynthesis, salvage pathways, and catabolism, with attention to regulatory mechanisms and clinical relevance.	2
<b>Course #14. Integrated Metabolism and Clinical Correlations</b> Synthesis of major metabolic pathways with emphasis on regulation, interconnectivity, and clinical disorders related to inborn errors of metabolism.	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Minerals and Trace Elements:</b> Quantitative analysis of calcium, magnesium, phosphorus, chloride, copper, and iron in serum	2
<b>Laboratory Work #2. Carbohydrates:</b> Identification reactions for monosaccharides, disaccharides, and polysaccharides; glucose determination in serum	2
<b>Laboratory Work #3. Total Serum Protein Quantification:</b> Serum protein electrophoresis; dysproteinemia testing; fibrinogen measurement in plasma	2
<b>Laboratory Work #4. Plasma Enzymes:</b> Determination of serum transaminases (AST and ALT)	2
<b>Laboratory Work #5. Phosphatases:</b> Measurement of serum alkaline and acid phosphatases	2
<b>Laboratory Work #6. Enzyme Assays:</b> $\gamma$ -glutamyl transferase (GGT), creatine phosphokinase (CPK), and lactate dehydrogenase (LDH)	2
<b>Laboratory Work #7. Lipids:</b> Determination of total serum lipids	2
<b>Laboratory Work #8. Cholesterol and Triglycerides:</b> Quantitative determination of cholesterol and triacylglycerols	2
<b>Laboratory Work #9. Seminar:</b> Integration of carbohydrate and lipid metabolism	2
<b>Laboratory Work #10. Bilirubin Determination:</b> Total and direct bilirubin measurement in serum	2
<b>Laboratory Work #11. Uric Acid and Creatinine:</b>	2

Laboratory Syllabus	Hours
Serum analysis	
<b>Laboratory Work #12. Urinalysis:</b> Physicochemical examination and identification of pathological urinary components	2
<b>Laboratory Work #13. Make-up Session:</b> Recovery of missed practical classes	2
<b>Laboratory Work #14. Colloquium:</b> Final practical evaluation	2

Minimum References:
1. Baynes, J. W. & Dominiczak, M. H. (2022). Medical Biochemistry, 6th Edition.
2. Lieberman, M. A. & Peet, A. (2022). Marks' Basic Medical Biochemistry: A Clinical Approach, 6th Edition.
3. Lippincott Illustrated Reviews: Biochemistry, 9th Edition (2025).
4. Chatterjea, M. N., Shinde, R., & Rana, S. (2023). Textbook of Medical Biochemistry, 9th Edition.
5. Teaching support materials

Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector
<ul style="list-style-type: none"> <li>The content of the Biochemistry discipline aligns with the expectations of the scientific and professional medical community by providing comprehensive knowledge of human metabolism, its regulation, and clinical correlations. It integrates theoretical and practical competencies essential for understanding energy transformation, metabolic pathways, and biochemical markers used in diagnosis and treatment. The course meets international educational standards (WFME, AMEE) and the requirements of healthcare employers by fostering analytical, laboratory, and interpretative skills necessary for clinical biochemistry, medical research, and evidence-based practice.</li> </ul>

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>Presentation of the course topic, structured oral presentation and interactive discussions facilitated through questions and answers.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Individual experimental work performed by students using laboratory equipment, chemical solutions and reagents, with emphasis on the correct use of laboratory techniques.</li> </ul>

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:
<ul style="list-style-type: none"> <li></li> </ul>

Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams
<ul style="list-style-type: none"> <li></li> </ul>

Specific conditions for carrying out the theoretical and practical activities of the discipline:
<ul style="list-style-type: none"> <li></li> </ul>

<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %
<b>Description of the actual methods of examination – E</b>	
•	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
•	•

**Date of completion**

**10.09.2025**

**Discipline Coordinator,**

**Rusu Elena, Assoc. Prof., PhD**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,**

**Rusu Elena, Assoc. Prof., PhD**

**Laboratory Coordinator,**

**Rusu Elena, Assoc. Prof., PhD**

**Petruț Ștefana Maria, Lecturer, PhD**

**Department Approval Date**

**18.09.2025**



TITU MAIORESCU UNIVERSITY OF BUCHAREST  
FACULTY OF MEDICINE  
MEDICINE IN ENGLISH PROGRAM  
ACADEMIC YEAR: I



2025-2026

## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	PHYSIOLOGY				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Cristescu Cristina, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Cristescu Cristina, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Munteanu Ioana, Lecturer, M.D., PhD				
Discipline Code	MLE.1.2.9	Formative category of the discipline		FS	
Year of Study	I	Semester	2	Type of the final evaluation (E, V)	E2
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	5

No. of Hours per week	4	Out of which are Course hours:	2	Seminar / Practical Activity / Clinical Stage	2
Total of hours in the curriculum	56	Out of which are Course hours:	28	Seminar / Practical Activity / Clinical Stage	28
		Total hours per semester	125	Total hours of individual study	69

Distribution of time pool per week	Hours
1. Study of the course material	3
2. Study according with the course support, manuals	25
3. Study of the minimal bibliography	3
4. Additional documentation in the library	3
5. Specific activity for the seminary or laboratory	2

Distribution of time pool per week	Hours
6. Homework, translations, etc.	1
7. Preparing for different written exams	2
8. Preparing for oral examinations	1
9. Preparing for the final examination	9
10. Consultations	3
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	13
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	PHYSIOLOGY
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the mechanisms of function, regulation, and integration of the human body's organ systems.</li> <li>• Applying physiological principles to explain clinical signs and interpret basic laboratory data.</li> <li>• Recognizing normal functional parameters and distinguishing them from pathological deviations.</li> <li>• Using appropriate physiological terminology and methods for analysis, presentation, and communication.</li> <li>• Correlating physiological mechanisms with the molecular and biochemical processes that support them.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of analytical, logical, and integrative thinking in solving biomedical problems.</li> <li>• Effective communication and collaboration in academic and clinical environments.</li> <li>• Application of ethical and professional behavior in laboratory and patient-related contexts.</li> <li>• Use of digital tools and scientific databases to acquire, analyze, and interpret physiological information.</li> <li>• Continuous self-directed learning and adaptability to scientific and technological advances in medicine.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide fundamental knowledge of the normal functions and regulatory mechanisms of the human body.</li> <li>• To establish the scientific basis for understanding disease mechanisms and clinical applications.</li> <li>• To train students to interpret physiological phenomena critically and correlate them with clinical findings.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Describe the principles of cellular, membrane, and systemic physiology.</li> <li>• Explain mechanisms of homeostasis and their regulation in health and disease.</li> <li>• Understand the physiology of blood, the nervous system, and endocrine regulation.</li> <li>• Identify functional parameters and interpret deviations using physiological reasoning.</li> <li>• Integrate theoretical and experimental knowledge to support medical diagnosis and clinical decision-making.</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the physiological mechanisms regulating cellular function, blood composition, nervous system activity, and endocrine control, describe the principles of homeostasis and the functional integration of organ systems in maintaining internal balance, understand physiological processes involved in membrane transport, neuronal signaling, hematopoiesis, and hormonal regulation.
<b>Skills</b>	Students interpret physiological data obtained from laboratory investigations such as hematological tests, electrolyte balance, and metabolic parameters, analyze mechanisms underlying cellular excitability, blood physiology, and neuroendocrine regulation, evaluate physiological parameters and laboratory results in relation to normal functional values and regulatory mechanisms.
<b>Responsibilities/ Autonomy</b>	Students apply physiological principles in the interpretation of functional tests and clinical laboratory data, use laboratory methods and experimental procedures used in physiological investigations, apply scientific reasoning and critical thinking when analyzing physiological mechanisms and clinical correlations.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Introduction to Physiology</b> Basic principles, the body as a functional unit, physiology's interdisciplinary role, research methods, modern exploration techniques, scientific documentation, and Romanian contributions.	2
<b>Course #2. Homeostasis of Body Fluid Compartments</b> Water compartments and their pressures. Mechanisms of water/electrolyte balance and dehydration/overhydration states.	2
<b>Course #3. Cell Membrane Physiology</b> Structure of cell membranes; membrane transport mechanisms: passive diffusion, facilitated diffusion, primary and secondary active transport; generation of transmembrane electrical potential.	2
<b>Course #4. Receptor Physiology</b> Structural and functional aspects of membrane and intracellular receptors; classification of receptors; ligand-receptor binding; secondary messenger systems; adhesion receptors; signal transduction; cytokines and chemokines – general principles.	2
<b>Course #5. Blood I – Composition and Acid-Base Balance</b> Blood components: plasma and formed elements; hematocrit; physicochemical properties: color, viscosity, osmotic and colloid-osmotic pressure; blood functions; acid-base balance –	2

<b>Course Syllabus</b>	<b>Hours</b>
parameters, regulation mechanisms, simple and complex disturbances, definitions of acidosis and alkalosis.	
<b>Course #6. Blood II – Hematopoiesis and Erythrocytes</b> Hematopoiesis – stages and sites (embryonic and adult); erythropoiesis; erythrocyte morphology and function; hemoglobin – structure, types, ontogeny; gas transport (O <sub>2</sub> and CO <sub>2</sub> ); abnormal hemoglobins and transport forms.	2
<b>Course #7. Blood III – Leukocytes and Immunity</b> Myelopoiesis – granulocyte, monocyte, lymphocyte, and plasma cell formation; types and functions of leukocytes; phagocytosis and necrophagocytosis; concepts of self/non-self; antigens, antibodies; histocompatibility; immunity – definitions and types; blood group antigens.	2
<b>Course #8. Blood IV – Platelets and Hemostasis</b> Thrombocytopoiesis; platelet function; coagulation balance; components of the pro-coagulant system.	2
<b>Course #9. Blood V – Fibrinolysis and Additional Functions</b> Fibrinolytic system; regulation of fibrinolysis; secondary functions of blood.	2
<b>Course #10. Nervous System – Neurons and Synapses</b> General organization of the nervous system; neuron physiology; synapse – structure, types, basic functions; chemical neurotransmitters.	2
<b>Course #11. Integrative Neurophysiology</b> Reflex arc and reflex act – somatic and autonomic; spinal cord – motor and autonomic centers; functional anatomy of the brainstem, diencephalon, cerebellum, and cerebral cortex.	2
<b>Course #12. Endocrine Physiology I – General Principles</b> Hormone classification; synthesis, secretion, activation, inactivation, elimination; receptor interaction – membrane and intracellular; neuroendocrine transducers; feedback mechanisms; biorhythms; endocrine structures – hypothalamic-pituitary axis, APUD system, adipose tissue hormones; Romanian school of endocrinology.	2
<b>Course #13. Endocrine Physiology II – Hypothalamus, Pituitary, Thyroid</b> Anterior pituitary – hormones, regulation, interaction with receptors; hypothalamic neurohormones – releasing and inhibiting factors; posterior pituitary – ADH and oxytocin; thyroid – hormone synthesis, secretion, transport, physiological effects, feedback regulation; principles of thyroid function assessment; hypo- and hyperthyroidism.	2
<b>Course #14. Endocrine Physiology III – Adrenal Gland</b> Adrenal medulla – catecholamines: synthesis, secretion, receptor interaction, function; integration in the sympatho-adrenal system; adrenal cortex – structure and hormone biosynthesis; glucocorticoids and mineralocorticoids – mechanisms of action, physiological roles, regulation, clinical implications; stress response; renin-angiotensin-aldosterone system; adrenal sex steroids.	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Membrane Physiology &amp; Hematology I</b> Study of membrane potentials and action potentials. Introduction to diagnostic tests across specialties. Basic hematology: blood components, common tests (ESR, hemoglobin), hemoglobin types, and Teichmann crystal ID.	2
<b>Laboratory Work #2. Membrane Transport &amp; Hematology II</b> Overview of membrane transport mechanisms. Blood count interpretation: anemia types, erythrocyte indices, morphological changes. Practice reading hemoleukograms.	2
<b>Laboratory Work #3. Cellular Energy &amp; Hematology III</b>	2

Laboratory Syllabus	Hours
ATP and cellular energy pathways. Blood typing and transfusion compatibility. Reticulocyte count and erythrocyte fragility. Coombs test applications.	
<b>Laboratory Work #4. Plasma Composition &amp; Leukocytes</b> Plasma characteristics and white cell function. Manual and automated leukocyte counts, leukogram analysis, and morphological staining. Case-based lab result interpretation.	2
<b>Laboratory Work #5. Plasma &amp; Platelet Function</b> Plasma properties (pH, density). Platelet physiology and roles in hemostasis. Platelet disorders and diagnostic implications.	2
<b>Laboratory Work #6. Electrolyte Balance &amp; Homeostasis</b> Hydro-electrolytic assessment: ionograms, volemia, and dehydration types. Discussion-based review of internal fluid and electrolyte balance.	2
<b>Laboratory Work #7. Neuromuscular Physiology &amp; Bone Marrow</b> Mechanism of muscle contraction and fatigue. Bone marrow evaluation: sampling, myelogram interpretation, normal cellular elements.	2
<b>Laboratory Work #8. Receptors &amp; Hemostasis I</b> Types of receptors and signal pathways. Tests for primary and secondary hemostasis, including bleeding time and clotting assays. Lab report interpretation.	2
<b>Laboratory Work #9. Cytokines &amp; Hemostasis II</b> Roles of cytokines and chemokines. Fibrinogen, clot retraction, and fibrinolysis tests. Interpretation of coagulation disorders.	2
<b>Laboratory Work #10. Thermoregulation &amp; Carbohydrate Metabolism</b> Temperature regulation and acid-base balance. Carbohydrate metabolism: glucose tests, diabetes staging, and hypoglycemia diagnosis.	2
<b>Laboratory Work #11. Lipid &amp; Protein Metabolism</b> Lipid profile and hyperlipidemia classification. Protein metabolism and serum protein electrophoresis. Interpretation of protein abnormalities.	2
<b>Laboratory Work #12. Electrolyte &amp; Iron Metabolism</b> Electrolyte balance and ionogram interpretation. Iron metabolism: serum iron, ferritin, and TIBC; diagnostic relevance.	2
<b>Laboratory Work #13. Remedial Session</b> Recovery of missed or incomplete labs.	2
<b>Laboratory Work #14. Final Colloquium</b> Summative evaluation of theoretical and practical competencies.	2

Minimum References:
1. Hall JE, Hall ME. <i>Guyton and Hall Textbook of Medical Physiology</i> . 15th ed. Philadelphia: Elsevier; 2021.
2. Costanzo LS. <i>Physiology</i> . 7th ed. Philadelphia: Elsevier; 2023.
3. Boron WF, Boulpaep EL. <i>Medical Physiology</i> . 4th ed. Philadelphia: Elsevier; 2022.
4. Vander AJ, Sherman JH, Luciano DS. <i>Human Physiology: The Mechanisms of Body Function</i> . 15th ed. New York: McGraw-Hill Education; 2020.
5. Widmaier EP, Raff H, Strang KT. <i>Vander's Human Physiology: The Mechanisms of Body Function</i> . 16th ed. New York: McGraw-Hill Education; 2023.
6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- The content of the Physiology discipline aligns with the expectations of the medical academic community and healthcare employers by providing essential knowledge on the mechanisms of body function, regulation, and integration. It develops an understanding of normal physiological processes, forming the scientific foundation for pathology, pharmacology, and clinical practice. The course meets international medical education standards (WFME, AMEE) by promoting analytical reasoning, clinical correlation, and applied problem-solving skills required in healthcare and biomedical research.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of fundamental physiological concepts through oral exposition, followed by interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>• Practical activities performed by students involving the observation and interpretation of physiological functions, with emphasis on the correct use of laboratory methods.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

- 

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

- 

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

- 

Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

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Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**

10. 09. 2025

**Discipline Coordinator,**

**Cristescu Cristina, Assoc. Professor, M.D., PhD**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,**

**Cristescu Cristina, Assoc. Professor, M.D., PhD**

**Laboratory Coordinator,**

**Munteanu Ioana, Lecturer, M.D., PhD**

**Department Approval Date**

18 .09. 2025



TITU MAIORESCU UNIVERSITY OF BUCHAREST  
FACULTY OF MEDICINE  
MEDICINE IN ENGLISH PROGRAM  
ACADEMIC YEAR: I



2025-2026

## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	BIOPHYSICS				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Burducea Gabriela, Lecturer, PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Burducea Gabriela, Lecturer, PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Burducea Gabriela, Lecturer, PhD				
Discipline Code	MLE.1.2.10	Formative category of the discipline		FS	
Year of Study	I	Semester	2	Type of the final evaluation (E, V)	E2
Discipline Regime (M-mandatory, E-elective)			M	No. of credits	3

No. of Hours per week	3	Out of which are Course hours:	1	Seminar / Practical Activity / Clinical Stage	2
Total of hours in the curriculum	42	Out of which are Course hours:	14	Seminar / Practical Activity / Clinical Stage	28
		Total hours per semester	75	Total hours of individual study	33

Distribution of time pool per week	Hours
1. Study of the course material	1
2. Study according with the course support, manuals	11
3. Study of the minimal bibliography	1
4. Additional documentation in the library	1
5. Specific activity for the seminary or laboratory	2

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	4
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	5
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	BIOPHYSICS
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the physical principles underlying biological systems, molecular interactions, and energy transformations.</li> <li>• Applying biophysical laws to explain phenomena such as diffusion, osmosis, membrane transport, bioelectrogenesis, and muscle contraction.</li> <li>• Using physical and optical methods (microscopy, spectroscopy, electrophysiology) in biomedical investigation.</li> <li>• Evaluating the biological effects of ionizing and non-ionizing radiation and implementing safety measures. <ul style="list-style-type: none"> <li>• Interpreting quantitative data, modeling biological processes, and correlating results with clinical applications.</li> </ul> </li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of analytical and critical thinking for problem-solving in biomedical contexts.</li> <li>• Integration of interdisciplinary knowledge across physics, biology, and medicine.</li> <li>• Responsible conduct and adherence to safety and ethical standards in laboratory and clinical settings.</li> <li>• Effective communication of scientific data and collaboration within interdisciplinary teams.</li> <li>• Continuous learning and adaptability to technological advances in biomedicine and diagnostic methods.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide students with a solid understanding of the physical principles governing life processes and medical phenomena.</li> <li>• To connect theoretical biophysical concepts with their physiological and clinical applications.</li> <li>• To form the scientific foundation for future study in physiology, medical imaging, and clinical instrumentation.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Explain the mechanical, electrical, optical, and radiological principles of living systems.</li> <li>• Describe biophysical mechanisms involved in membrane transport, excitability, and muscle contraction.</li> <li>• Apply thermodynamic and bioenergetic concepts to biological equilibrium and energy metabolism.</li> <li>• Use biophysical instruments to measure, analyze, and interpret biomedical data.</li> <li>• Recognize the effects and applications of radiation in diagnosis and therapy, emphasizing radiation protection principles.</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the physical principles governing biological systems, including biomechanics, thermodynamics, and molecular interactions, describe mechanisms of membrane transport, bioelectrogenesis, muscle contraction, and sensory system biophysics, understand the biological effects and medical applications of ionizing and non-ionizing radiation.
<b>Skills</b>	Students interpret experimental data obtained from biophysical laboratory techniques and biomedical instrumentation, analyze physical processes involved in membrane transport, electrical excitability, and signal propagation in biological systems, perform biomedical measurements using optical, electrical, and spectrophotometric methods.
<b>Responsibilities/ Autonomy</b>	Students apply biophysical principles in the interpretation of physiological processes and biomedical technologies, use laboratory safety standards and radiation protection principles during experimental activities, apply quantitative reasoning and scientific analysis when interpreting biomedical data and experimental results.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Introduction to Biophysics and Biomechanics</b> Introduction to the scope and significance of biophysics in medicine. Overview of its interdisciplinary nature and key thematic areas. Basic concepts in biomechanics, including kinematics, dynamics, and statics, with application to human motion, joint mechanics, and muscle function.	1
<b>Course #2. Biorheology</b> Study of the rheological behavior of solids and fluids in biological systems. Characterization of elastic, plastic, and viscous bodies, with emphasis on viscoelastic properties of real tissues and their physiological implications.	1
<b>Course #3. Biological Thermodynamics</b> Fundamentals of thermodynamic systems and processes in biology. Focus on the first and second laws of thermodynamics, energy transformations in living organisms, and the concept of open systems in biological equilibrium and non-equilibrium states.	1
<b>Course #4. Molecular Biophysics of Water</b> Examination of water's structural and physical properties in biological systems. Discussion includes hydrogen bonding, hydrophobic interactions, structured versus free water, and non-invasive techniques for studying water in biosystems.	1
<b>Course #5. Molecular Phenomena at Interfaces</b>	1

<b>Course Syllabus</b>	<b>Hours</b>
Analysis of transport processes in the liquid phase, including diffusion laws and osmosis. Topics include artificial membrane systems (e.g., dialysis), the Starling phenomenon, and the role of osmotic pressure in physiology and pathology.	
<b>Course #6. Biophysics of Cell Membranes</b> Study of the structure and function of biological membranes. Includes membrane composition, charge distribution, structural models, and comparisons with artificial membranes.	1
<b>Course #7. Membrane Transport Mechanisms</b> Overview of passive and facilitated transport across membranes, including diffusion of non-electrolytes, water transport via aquaporins, and intra- and intercellular membrane dynamics.	1
<b>Course #8. Bioelectrogenesis and Cellular Excitability</b> Examination of resting and action potentials, ion channel dynamics, and propagation of electrical signals. Introduction to the excitability cycle, electrical currents, and laws governing neural activation.	1
<b>Course #9. Biophysics of Muscle Contraction</b> Molecular basis of muscle contraction in striated and smooth muscle fibers. Topics include the neuromuscular junction, excitation-contraction coupling, and biophysical properties of contractile proteins.	1
<b>Course #10. Neurobiophysics and Biocybernetics</b> Analysis of synaptic structure and function, neurotransmission mechanisms, and electrical versus chemical synapses. Introduction to biocybernetic principles including feedback, information flow, and neural signaling.	1
<b>Course #11. Visual System Biophysics</b> Study of the optical system of the eye and the biophysical principles of visual reception. Includes photoreceptor cell function, visual pathways, and mechanisms underlying different types of vision.	1
<b>Course #12. Bioacoustics and the Auditory System</b> Biophysical mechanisms of hearing, including cochlear biomechanics and neural signal processing. Introduction to ultrasound physics, biological effects, and clinical applications in diagnostics and therapy.	1
<b>Course #13. Biophysics of Non-Ionizing Radiation</b> Overview of non-ionizing electromagnetic radiation, including UV, visible, infrared, and microwave radiation. Discussion of interaction mechanisms, photochemical laws, and biological effects.	1
<b>Course #14. Biophysics of Ionizing Radiation</b> Study of ionizing radiation types, properties, and interactions with biological matter. Topics include dosimetry, biological effects, radiation protection, and medical applications of radioisotopes.	1

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Statistical and Graphical Analysis of Laboratory Data</b> Introduction to error analysis and data processing in experimental biophysics. Includes basic statistical methods and graphical representation techniques for interpreting laboratory results.	2
<b>Laboratory Work #2. Physical Methods for the Study of Molecular Phenomena - Surface Tension and Viscosity Measurements</b> Application of stalagmometry for determining surface tension, and use of the Ostwald viscometer for measuring the dynamic viscosity of liquids.	2
<b>Laboratory Work #3. Physical Methods for the Study of Molecular Phenomena - Chromatographic Separation Techniques</b>	2

Laboratory Syllabus	Hours
Demonstration of molecular separation using chromatography, with emphasis on the identification and isolation of components from a complex mixture.	
<b>Laboratory Work #4. Electrical and Electronic Methods in Biology and Medicine - Cathode Ray Oscilloscope and Signal Processing</b> Introduction to the use of the cathode oscilloscope in biomedical signal analysis. Practical training in recording and interpreting electrical signals.	2
<b>Laboratory Work #5. Electrical and Electronic Methods in Biology and Medicine - Membrane Transport and Electrical Circuit Simulation</b> Experimental modeling of passive membrane transport using electrical circuit analogs. Focus on constructing and analyzing simple electric circuits to simulate biological transport.	2
<b>Laboratory Work #6. Electrical and Electronic Methods in Biology and Medicine - Electrical Modeling of Biological Membranes</b> Study of voltage-current relationships in biological membrane models. Includes tracing and interpreting membrane characteristics using electrical analogs.	2
<b>Laboratory Work #7. Optical Methods in Biology and Medicine - Optical Microscopy and Image Formation</b> Hands-on use of the optical microscope, including adjustment and calibration. Measurement of cellular structures such as red blood cell diameters.	2
<b>Laboratory Work #8. Optical Methods in Biology and Medicine - Refractometric Concentration Determination</b> Use of refractometry to determine the concentration of solutions. Emphasis on calibration, measurement accuracy, and biological applications.	2
<b>Laboratory Work #9. Optical Methods in Biology and Medicine - Polarimetry of Optically Active Compounds</b> Measurement of the concentration of optically active solutions using polarimetry. Includes interpretation of optical rotation data in biological samples.	2
<b>Laboratory Work #10. Optical Methods in Biology and Medicine - Spectrophotometric Analysis of Absorption</b> Application of spectrophotometry to trace absorption spectra of biologically relevant compounds. Introduction to Beer-Lambert law and curve interpretation.	2
<b>Laboratory Work #11. Optical Methods in Biology and Medicine - Colorimetric Methods for Biological Solutions</b> Quantification of biologically important substances using colorimetric techniques. Includes preparation, measurement, and data analysis.	2
<b>Laboratory Work #12. Optical Methods in Biology and Medicine - Optical Modeling of the Eye and Visual Defects</b> Exploration of the optical properties of the human eye using the focal method. Includes simulation of normal vision and common refractive errors.	2
<b>Laboratory Work #13. Physical Methods in the Study of Ionizing Radiation - Measurement of Radiation and Shielding Efficiency</b> Study of radioactive decay and radiation absorption using a scintillation counter. Evaluation of shielding effectiveness and radiation safety principles.	2
<b>Laboratory Work #14. Practical Examination</b> Final assessment of practical skills acquired throughout the course. Evaluation includes accuracy, technique, data interpretation, and scientific reporting.	2

**Minimum References:**

1. Bialek W. *Biophysics: Searching for Principles*. 2nd ed. Princeton, NJ: Princeton University Press; 2022.
2. Miyamoto S, editor. *Biophysics for Medical Students*. 1st ed. Singapore: Springer Nature; 2023.
3. Cohen FS, editor. *Introduction to Biological Physics for the Health and Life Sciences*. 2nd ed. Chichester, UK: Wiley-Blackwell; 2020.
4. Miyamoto S, Tamura M, editors. *Advanced Biophysics for Medicine and Biology*. 1st ed. Tokyo: Springer; 2021.
5. Hore PJ, Kalverda AP, Hore PJ. *Biological Physics: Energy, Information, Life*. 3rd ed. Oxford: Oxford University Press; 2023.
6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- The content of the Biophysics discipline corresponds to the expectations of the medical and scientific community by providing students with the physical foundations necessary to understand biological processes at molecular, cellular, and systemic levels. It integrates physics with physiology, biochemistry, and clinical sciences, supporting analytical and quantitative reasoning essential for evidence-based medicine and medical technology. The discipline aligns with international educational standards (WFME, AMEE) and meets healthcare employers' expectations for competencies in biomedical instrumentation, diagnostic imaging, radiation safety, and data analysis applied to modern clinical practice and research.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of fundamental biophysical principles underlying biological processes, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>• Practical activities performed by students involving the measurement and analysis of biophysical phenomena in biological systems, with emphasis on the correct use of laboratory instruments and experimental methods.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

- 

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

- 

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

-

<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %
<b>Description of the actual methods of examination – E</b>	
•	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
•	•

**Date of completion**

11.09.2025

**Discipline Coordinator,**

Burducea Gabriela, Lecturer, PhD

**Head of Department,**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**Course Coordinator,**

Burducea Gabriela, Lecturer, PhD

**Laboratory Coordinator,**

Burducea Gabriela, Lecturer, PhD

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	FIRST-AID MEASURES				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Adam Răzvan, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Adam Răzvan, Assoc. Professor, M.D., PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Adam Răzvan, Assoc. Professor, M.D., PhD				
Discipline Code	MLE.1.2.11	Formative category of the discipline		SS	
Year of Study	I	Semester	2	Type of the final evaluation (E, V)	E2
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	<b>3</b>

No. of Hours per week	3	Out of which are Course hours:	1	Seminar / Practical Activity / Clinical Stage	2
Total of hours in the curriculum	42	Out of which are Course hours:	14	Seminar / Practical Activity / Clinical Stage	28
		Total hours per semester	75	Total hours of individual study	33

Distribution of time pool per week					Hours
1. Study of the course material					1
2. Study according with the course support, manuals					11
3. Study of the minimal bibliography					1
4. Additional documentation in the library					1
5. Specific activity for the seminary or laboratory					2
6. Homework, translations, etc.					0

Distribution of time pool per week	Hours
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	4
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	5
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	FIRST-AID MEASURES
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Performing initial assessment and stabilization of patients in emergency and life-threatening conditions.</li> <li>• Applying core first aid procedures, including airway clearance, bleeding control, and positioning techniques.</li> <li>• Conducting effective cardiopulmonary resuscitation (CPR) according to current international guidelines.</li> <li>• Recognizing signs and symptoms of sudden collapse, respiratory distress, and cardiac arrest.</li> <li>• Cooperating efficiently within emergency response teams and applying national and institutional emergency protocols.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of rapid decision-making and critical thinking under stress.</li> <li>• Cultivation of professional responsibility, empathy, and ethical conduct in emergency situations.</li> <li>• Effective teamwork and communication during crisis intervention.</li> <li>• Application of safety standards and preventive measures in emergency care.</li> <li>• Continuous self-improvement and readiness for evolving medical emergency protocols.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To develop the ability to recognize and respond to life-threatening emergencies promptly and effectively.</li> <li>• To integrate anatomical and physiological knowledge with first aid interventions.</li> <li>• To form the foundation for advanced emergency medicine and clinical response skills.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Identify and assess emergency situations and prioritize first aid actions.</li> <li>• Perform essential first aid maneuvers, including the recovery position, Sellick and Heimlich maneuvers.</li> <li>• Execute effective external chest compressions and artificial ventilation.</li> <li>• Apply complete CPR protocols in single- and multi-rescuer scenarios.</li> <li>• Understand and implement the organization and function of national emergency response systems (e.g., SMURD, Red Cross, IGSU).</li> </ul>

Learning Outcomes	
<b>Knowledge</b>	Students identify the principles of emergency assessment and the recognition of life-threatening conditions, describe the physiological and anatomical basis of airway management, circulation support, and cardiopulmonary resuscitation, understand the algorithms and protocols used in basic life support and emergency response systems.
<b>Skills</b>	Students interpret clinical signs associated with sudden collapse, respiratory distress, and cardiac arrest, analyze emergency scenarios and prioritize appropriate first-aid interventions, perform basic life-saving procedures including recovery positioning, airway clearance maneuvers, external chest compressions, and artificial ventilation.
<b>Responsibilities/ Autonomy</b>	Students apply basic life support protocols and first-aid procedures in simulated emergency situations, safety standards and professional responsibility when providing emergency care, use teamwork and effective communication during coordinated emergency response activities.

Course Syllabus	Hours
<b>Course #1. Introduction and Course Orientation</b> Introduction to the course objectives, content, and structure. Initial assessment of anatomical and physiological knowledge. Formation of working groups to support collaborative skill development throughout the course.	2
<b>Course #2. Clinical Anatomy and Physiology in Emergencies</b> Review of essential clinical anatomy and physiology, with focus on the cardiovascular and respiratory systems as a foundation for understanding emergency interventions.	2
<b>Course #3. Emergency Response Techniques</b> Introduction to the principles of emergency management, including both one-time and repeated response strategies. Emphasis on situational assessment and initial stabilization.	2
<b>Course #4. Sudden Collapse and Differential Diagnosis</b> Discussion of clinical features and differential diagnosis of sudden death, syncope, and lipothymia. Focus on early recognition and decision-making under time-sensitive conditions.	2
<b>Course #5. Emergency Maneuvers: Sellick and Heimlich</b> Training in the application of critical life-saving techniques, including the Sellick (cricoid pressure) and Heimlich maneuvers for airway obstruction management.	2
<b>Course #6. Resuscitation Protocols and Techniques</b> Overview of the emergency treatment algorithm. Instruction in assessing cardiac activity, performing external chest compressions, and providing artificial ventilation.	2
<b>Course #7. Cardiopulmonary Resuscitation and Emergency Systems</b> Practical training in one- and multi-rescuer cardiopulmonary resuscitation (CPR). Overview of national emergency response systems, including state and private ambulance services, SMURD, Red Cross, and IGSU.	2

Laboratory Syllabus	Hours
<b>Laboratory Work #1. Clinical Anatomy for First Aid: Cardiovascular and Respiratory Systems</b> Practical identification of anatomical regions relevant to first aid interventions. Focus on surface landmarks and access points for emergency procedures involving the cardiovascular and respiratory systems.	4
<b>Laboratory Work #2. Basic Life-Saving Maneuvers</b>	4

<b>Laboratory Syllabus</b>	<b>Hours</b>
Hands-on training in essential emergency techniques, including the recovery position (PLS), Sellick maneuver (cricoid pressure), and Heimlich maneuver for foreign body airway obstruction.	
<b>Laboratory Work #3. Emergency Assessment and Diagnosis</b> Practice in performing rapid clinical assessments, with focus on recognizing signs of sudden collapse, syncope, and lipothymia. Emphasis on differentiating between life-threatening and transient conditions.	4
<b>Laboratory Work #4. Artificial Ventilation Techniques</b> Training in manual ventilation methods using barrier devices or resuscitation masks. Emphasis on technique, timing, and safety in providing effective breaths.	4
<b>Laboratory Work #5. External Chest Compressions</b> Skill development in performing high-quality external chest compressions, including correct hand placement, compression depth and rate, and minimizing interruptions.	4
<b>Laboratory Work #6. Cardiopulmonary Resuscitation (CPR)</b> Integrated practice of CPR protocols with one and multiple rescuers, including coordination of compressions and ventilations. Focus on team roles and rhythm in emergency scenarios.	4
<b>Laboratory Work #7. Advanced First Aid Scenarios and Clinical Anatomy Review</b> Reinforcement of anatomical knowledge through applied practice. Simulation of first aid procedures in cases of short-term loss of consciousness, emphasizing airway maintenance, positioning, and initial response steps.	4

<b>Minimum References:</b>
1. European Resuscitation Council. European Resuscitation Council Guidelines for Resuscitation 2021: Adult Basic and Advanced Life Support. 1st ed. Brussels: ERC; 2021.
2. American Heart Association. Highlights of the 2020 American Heart Association Guidelines for CPR and ECC. Dallas, TX: American Heart Association; 2020.
3. Berger S, Nolan JP, Perkins GD, editors. Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. 1st ed. Philadelphia: Elsevier; 2022.
4. Pellatt GC, editor. Introduction to Emergency Care for Paramedics and Medical Students. 3rd ed. London: Routledge; 2021.
5. Holleran RS, Werman HA, editors. Prehospital Emergency Care. 12th ed. Boston, MA: Pearson Education; 2024.
6. Teaching support materials

<b>Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector</b>
<ul style="list-style-type: none"> <li>The content of the First Aid Measures discipline meets the expectations of the medical academic community, professional associations, and healthcare employers by providing essential knowledge and practical skills for managing medical emergencies. The course ensures that future healthcare professionals acquire immediate life-saving abilities, understand emergency physiology and anatomy, and act effectively under pressure. It aligns with international standards (WFME, AMEE, ERC, and AHA) and responds to the healthcare sector's demand for competent, safety-oriented professionals capable of performing basic life support and first response interventions in both pre-hospital and clinical settings.</li> </ul>

<b>How the information is transmitted</b>	
<b>Type of Activity</b>	<b>Teaching methods used</b>

How the information is transmitted	
Lecture	<ul style="list-style-type: none"> <li>Systematic and structured presentation of the fundamental principles of first aid and emergency response, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Practical training sessions in which students practice and apply basic first aid techniques in simulated emergency situations, with emphasis on the correct execution of procedures and the appropriate use of first aid equipment.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

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**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

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**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

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Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

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Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**

11.09.2025

**Discipline Coordinator,**

Adam Răzvan, Assoc. Professor, M.D., PhD

**Head of Department,**

Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD

**Course Coordinator,**

**Laboratory Coordinator,**

**Adam Răzvan, Assoc. Professor, M.D., PhD**

**Adam Răzvan, Assoc. Professor, M.D., PhD**

**Department Approval Date**

18.09.2025



TITU MAIORESCU UNIVERSITY OF BUCHAREST  
 FACULTY OF MEDICINE  
 MEDICINE IN ENGLISH PROGRAM  
 ACADEMIC YEAR: I



2025-2026

## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	BACHELOR
Study programme	MEDICINE IN ENGLISH

Discipline`s Name	MEDICAL COMMUNICATION				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	Focșeneanu Brîndușa, Lecturer, M.D., PhD				
Didactic position, name and surname for the <b>Course Coordinator</b>	Focșeneanu Brîndușa, Lecturer, M.D., PhD				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	Bondar Andrei, M.D., PhD				
Discipline Code	MLE.1.2.12	Formative category of the discipline		CS	
Year of Study	I	Semester	2	Type of the final evaluation (E, V)	V2
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	<b>2</b>

No. of Hours per week	2	Out of which are Course hours:	1	Seminar / Practical Activity / Clinical Stage	1
Total of hours in the curriculum	28	Out of which are Course hours:	14	Seminar / Practical Activity / Clinical Stage	14
		Total hours per semester	50	Total hours of individual study	22

Distribution of time pool per week				Hours
1. Study of the course material				1
2. Study according with the course support, manuals				7
3. Study of the minimal bibliography				1
4. Additional documentation in the library				1
5. Specific activity for the seminary or laboratory				1

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	3
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	3
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	MEDICAL COMMUNICATION
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Conducting structured and effective medical interviews and consultations.</li> <li>• Applying verbal and nonverbal communication skills adapted to diverse clinical situations.</li> <li>• Building therapeutic alliances and promoting patient adherence to treatment.</li> <li>• Communicating empathetically with patients in psychiatric, palliative, or crisis contexts.</li> <li>• Understanding and applying ethical and legal principles in patient communication and confidentiality.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Developing emotional intelligence, empathy, and self-awareness in clinical relationships.</li> <li>• Strengthening teamwork, collaboration, and conflict-resolution skills within interprofessional settings.</li> <li>• Demonstrating ethical responsibility and respect for cultural and psychological diversity.</li> <li>• Enhancing reflective practice and resilience in emotionally demanding clinical contexts.</li> <li>• Promoting continuous learning and adaptation to communication challenges in healthcare.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide students with theoretical and practical tools for effective medical communication.</li> <li>• To promote ethical, empathetic, and patient-centered interaction in clinical and interdisciplinary contexts.</li> <li>• To establish a foundation for professionalism and relational competence in medical practice.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Understand the theoretical models of communication and their application in the doctor–patient relationship.</li> <li>• Conduct effective medical interviews and facilitate therapeutic adherence.</li> <li>• Recognize the influence of personality and emotional factors on communication.</li> <li>• Apply communication strategies in psychiatric care, crisis management, and palliative settings.</li> <li>• Demonstrate empathy, professionalism, and ethical responsibility in all forms of medical interaction.</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the theoretical models and principles of medical communication in the doctor–patient relationship, describe the structure and objectives of the medical interview and factors influencing therapeutic adherence, explain ethical and legal aspects of communication, including confidentiality, informed consent, and patient rights.
<b>Skills</b>	Students interpret verbal and nonverbal communication signals in clinical interactions with patients, analyze communication scenarios involving medical interviews, psychiatric contexts, crisis management, and palliative care, evaluate communication strategies used in patient counseling, delivery of difficult information, and interprofessional teamwork.
<b>Responsibilities/ Autonomy</b>	Students use patient-centered communication strategies during medical interviews and consultations, empathy, professionalism, and ethical standards in interactions with patients and healthcare teams, adhere to effective communication techniques when addressing complex emotional or clinical situations.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Elements of Communication and the Doctor–Patient Relationship</b> Overview of fundamental communication concepts, evolution of the doctor–patient relationship, and factors disrupting therapeutic interaction, including transference, countertransference, and physician vulnerability.	2
<b>Course #2. The Medical Interview and Therapeutic Adherence</b> Structure and functions of the medical interview. Active listening, barriers to communication, and determinants of adherence to treatment.	2
<b>Course #3. Personality and the Therapeutic Alliance</b> Personality traits and disorders relevant to medical contexts. The influence of personality on diagnosis, treatment, and the establishment of the therapeutic alliance.	2
<b>Course #4. Communication with Psychiatric Patients and Crisis Management</b> Principles and challenges of communication with patients with psychiatric disorders. Strategies for managing communication during acute crises or end-of-life stages.	2
<b>Course #5. Psychological Support and Communication in Palliative Care</b> Methods of communicating unfavorable prognoses. Psychological support techniques in palliative care and emotional management for healthcare providers.	2
<b>Course #6. Empathy and Psychotherapeutic Techniques</b>	2

<b>Course Syllabus</b>	<b>Hours</b>
Theoretical foundations of empathy, its role in patient care, and introduction to psychotherapeutic and relaxation techniques as tools for therapeutic communication.	
<b>Course #7. Interprofessional Communication and Legal Considerations</b> Principles of teamwork and conflict management in healthcare. Legal aspects of communication: patient rights, informed consent, and medical confidentiality.	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Communication Models and Doctor–Patient Scenarios</b> Role-playing exercises to illustrate various communication models. Identification of barriers and facilitators in doctor–patient interaction.	2
<b>Laboratory Work #2. Conducting the Medical Interview</b> Simulated patient encounters focusing on structured interviews, open vs. closed questions, nonverbal communication, and active listening techniques.	2
<b>Laboratory Work #3. Personality Types and Communication Styles</b> Case-based discussion on how different personality traits affect interaction. Practice adapting communication strategies to patient profiles.	2
<b>Laboratory Work #4. Communicating in Psychiatric and Crisis Situations</b> Simulation of interactions with agitated, anxious, or withdrawn patients. Practical strategies for de-escalation and maintaining professional composure.	2
<b>Laboratory Work #5. Delivering Bad News and Providing Psychological Support</b> Use of the SPIKES protocol and other structured approaches for breaking bad news. Exercises on emotional support and compassionate communication.	2
<b>Laboratory Work #6. Developing Empathy and Therapeutic Presence</b> Interactive techniques for fostering empathy, self-awareness, and emotional regulation. Practice with reflective listening and validation methods.	2
<b>Laboratory Work #7. Team Communication and Ethical Decision-Making</b> Team-based simulations focusing on interprofessional collaboration, conflict resolution, and case analysis related to confidentiality and informed consent.	2

<b>Minimum References:</b>
1. Silverman J, Kurtz S, Draper J. Skills for Communicating with Patients. 4th ed. Boca Raton, FL: CRC Press, Taylor & Francis Group; 2023.
2. Bachmann C, Barbro H, Silverman J, et al. Clinical Communication in Medicine. 2nd ed. Chichester, UK: Wiley-Blackwell; 2021.
3. Stewart M, Brown JB, Weston WW, McWhinney IR, McWilliam CL, Freeman TR. Patient-Centered Medicine: Transforming the Clinical Method. 4th ed. Boca Raton, FL: CRC Press, Taylor & Francis Group; 2022.
4. Kurtz SM, Silverman JD, Benson J, Draper J. Teaching and Learning Communication Skills in Medicine. 3rd ed. London: Routledge; 2021.
5. Nicol J, Owens J, Thomas M. Communication Skills for Medicine. 3rd ed. London: Elsevier; 2020.
6. Teaching support materials

<b>Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector</b>
<ul style="list-style-type: none"> <li>The content of the Medical Communication discipline aligns with the expectations of the medical academic community and healthcare employers by developing essential communication and</li> </ul>

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

interpersonal competencies required in modern medical practice. The course focuses on doctor–patient and interprofessional communication, empathy, conflict management, and psychological support, fostering the ethical and humanistic dimensions of care. It responds to international medical education standards (WFME, AMEE) and to employers’ expectations for professionals capable of effective, compassionate, and legally responsible interaction with patients, families, and medical teams.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>Systematic and structured presentation of the fundamental principles of medical communication, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Practical activities focused on the development of communication skills in medical contexts through simulated interactions, role-playing and analysis of clinical communication scenarios, with emphasis on effective doctor–patient interaction.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

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**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

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**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

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Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

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Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**

12.09.2025

**Discipline Coordinator,**

**Focșeneanu Brîndușa, Lecturer, M.D., PhD**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,**

**Focșeneanu Brîndușa, Lecturer, M.D., PhD**

**Laboratory Coordinator,**

**Bondar Andrei, M.D., PhD**

**Department Approval Date**

18.09.2025



**TITU MAIORESCU UNIVERSITY OF BUCHAREST**  
**FACULTY OF MEDICINE**  
**MEDICINE IN ENGLISH PROGRAM**  
**ACADEMIC YEAR: I**



2025-2026

## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>BACHELOR</b>
Study programme	<b>MEDICINE IN ENGLISH</b>

Discipline`s Name	<b>MEDICAL SPECIALIZED COMMUNICATION IN MODERN (ROMANIAN) FOREIGN LANGUAGES (II)</b>				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	<b>Buză Iulia, Lecturer, PhD</b>				
Didactic position, name and surname for the <b>Course Coordinator</b>	<b>Buză Iulia, Lecturer, PhD</b>				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	<b>Buză Iulia, Lecturer, PhD</b>				
Discipline Code	<b>MLE.1.2.13</b>	Formative category of the discipline		<b>CS</b>	
Year of Study	<b>I</b>	Semester	<b>2</b>	Type of the final evaluation (E, V)	<b>E2</b>
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	<b>2</b>

No. of Hours per week	<b>2</b>	Out of which are Course hours:	<b>1</b>	Seminar / Practical Activity / Clinical Stage	<b>1</b>
Total of hours in the curriculum	<b>28</b>	Out of which are Course hours:	<b>14</b>	Seminar / Practical Activity / Clinical Stage	<b>14</b>
		Total hours per semester	<b>50</b>	Total hours of individual study	<b>22</b>

Distribution of time pool per week					Hours
1. Study of the course material					1
2. Study according with the course support, manuals					7
3. Study of the minimal bibliography					1
4. Additional documentation in the library					1
5. Specific activity for the seminary or laboratory					1

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	3
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	3
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	MEDICAL SPECIALIZED COMMUNICATION IN MODERN (ROMANIAN) FOREIGN LANGUAGES (II)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Acquiring the linguistic and communicative skills necessary to interact with patients and medical staff in Romanian.</li> <li>• Using appropriate medical terminology in clinical and academic contexts.</li> <li>• Developing oral and written fluency for effective participation in medical consultations, case discussions, and documentation.</li> <li>• Applying grammatical and lexical structures relevant to patient interviews, case histories, and healthcare communication.</li> <li>• Understanding and correctly using Romanian terminology derived from Latin and Greek medical roots.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Developing intercultural and interpersonal communication skills within the medical environment.</li> <li>• Enhancing empathy, professionalism, and ethical communication with patients.</li> <li>• Integrating teamwork and collaboration through role-play and simulated doctor–patient interactions.</li> <li>• Strengthening self-learning strategies for continuous linguistic and professional improvement.</li> <li>• Promoting adaptability and confidence in real-life clinical communication situations.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To enable foreign medical students to communicate effectively in Romanian in professional and healthcare settings.</li> <li>• To build a functional vocabulary and grammatical foundation for medical communication.</li> <li>• To foster confidence and accuracy in oral and written interactions with patients and healthcare professionals.</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Identify and use core medical vocabulary related to anatomy, diseases, symptoms, and treatments.</li> <li>• Conduct basic patient interviews and obtain medical histories in Romanian.</li> <li>• Understand and produce clinical dialogues, instructions, and short reports.</li> <li>• Apply correct grammatical structures and medical terms in professional communication.</li> <li>• Recognize and use prefixes, suffixes, and terms of Greek and Latin origin specific to Romanian medical language.</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify Romanian medical terminology related to anatomy, diseases, symptoms, and treatment procedures, describe the linguistic structures used in patient interviews, medical consultations, and clinical documentation, understand the principles of effective communication and professional interaction in healthcare contexts.
<b>Skills</b>	Students interpret patient descriptions of symptoms and clinical information communicated in Romanian, analyze medical dialogue scenarios related to diagnosis, treatment explanation, and medication instructions, perform structured patient interviews and clinical discussions using appropriate Romanian medical vocabulary.
<b>Responsibilities/ Autonomy</b>	Students use Romanian medical terminology in oral and written communication during simulated clinical interactions, apply empathetic and ethical communication strategies when interacting with patients, use effective communication techniques when explaining diagnoses, investigations, and treatment recommendations.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Main Types and Subtypes of Tissues</b> Introduction to the classification, structure, and functions of epithelial, connective, muscular, and nervous tissues, with focus on terminology and communication in medical contexts.	1
<b>Course #2. The Skeletal System</b> Overview of the human skeletal system, including bone types, anatomical terminology, and key functions. Emphasis on vocabulary related to bones, joints, and body support.	1
<b>Course #3. Disorders of the Musculoskeletal System</b> Study of common musculoskeletal pathologies such as fractures, arthritis, and muscular dystrophy. Practice in describing symptoms, diagnoses, and treatments in medical Romanian.	1
<b>Course #4. The Integumentary System</b> Examination of the structure and function of the skin and its appendages. Discussion of dermatological terminology and common skin conditions.	1
<b>Course #5. The Circulatory System</b> Anatomical and functional overview of the heart, blood vessels, and blood components. Introduction to specialized vocabulary used in cardiology and hematology.	1
<b>Course #6. Cardiovascular and Hematological Disorders</b>	1

<b>Course Syllabus</b>	<b>Hours</b>
Presentation of common diseases affecting the heart and blood, including hypertension, anemia, and thrombosis. Focus on medical expressions used in patient communication and case descriptions.	
<b>Course #7. The Respiratory System and Related Diseases</b> Study of respiratory anatomy and physiology with clinical vocabulary related to conditions such as asthma, pneumonia, and chronic obstructive pulmonary disease (COPD).	1
<b>Course #8. The Digestive System and Clinical Considerations</b> Exploration of the digestive tract and associated organs. Discussion of gastrointestinal diseases and communication strategies in clinical settings.	1
<b>Course #9. The Urinary System and Related Disorders</b> Overview of urinary anatomy and physiology. Terminology related to infections, renal insufficiency, and other urological conditions.	1
<b>Course #10. The Endocrine System</b> Description of major endocrine glands and their hormonal functions. Introduction to language used in discussing hormonal imbalances and metabolic regulation.	1
<b>Course #11. Endocrine Diseases and Clinical Communication</b> Presentation of common endocrine disorders such as diabetes and thyroid diseases. Focus on symptom description, treatment options, and patient interaction.	1
<b>Course #12. Sensory Organs and Related Disorders</b> Study of the structure and function of the eye, ear, and other sensory organs. Clinical expressions related to visual and auditory impairments.	1
<b>Course #13. Drugs: Types and Routes of Administration</b> Introduction to pharmacological terminology, including drug classifications, dosage forms, and administration routes. Emphasis on clear communication with patients regarding medications.	1
<b>Course #14. Final Revision and Integration</b> Comprehensive review of medical vocabulary and structures covered throughout the course. Preparation for oral and written communication tasks in medical Romanian.	1

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Practical Vocabulary: Types and Subtypes of Tissues</b> Applied exercises for recognizing, naming, and describing epithelial, connective, muscular, and nervous tissues in Romanian, using patient-oriented and clinical contexts.	1
<b>Laboratory Work #2. Practical Language Use: The Skeletal System</b> Interactive activities for describing bones, joints, movements, and injuries. Emphasis on clinical dialogue, anatomical terminology, and examination communication.	1
<b>Laboratory Work #3. Case-Based Practice: Musculoskeletal Disorders</b> Simulated clinical scenarios focusing on describing musculoskeletal symptoms, diagnosing conditions, and discussing treatment options in patient communication.	1
<b>Laboratory Work #4. Describing the Integumentary System in Practice</b> Vocabulary drills and role-play to describe skin structure, common dermatological conditions, and patient instructions using appropriate Romanian medical language.	1
<b>Laboratory Work #5. Communicating About the Circulatory System</b> Focused practice on discussing cardiac anatomy, circulation, and basic cardiovascular functions. Use of diagrams and patient dialogue to reinforce vocabulary.	1
<b>Laboratory Work #6. Cardiovascular and Hematologic Pathologies in Dialogue</b> Practical exercises in explaining symptoms, test results, and treatment plans related to heart and blood disorders in clear, patient-friendly Romanian.	1
<b>Laboratory Work #7. Practical Language Use: The Respiratory System</b>	1

<b>Laboratory Syllabus</b>	<b>Hours</b>
Engagement with clinical dialogues and case reports involving respiratory anatomy and diseases. Practice in describing breathing difficulties and treatments.	
<b>Laboratory Work #8. Digestive System: Patient Interaction Scenarios</b> Hands-on language tasks covering digestive functions, symptoms (e.g., pain, nausea), and dietary instructions. Includes terminology for GI diagnostics and conditions.	1
<b>Laboratory Work #9. Urinary System Disorders: Applied Communication</b> Role-play and dialogue-based tasks for describing urinary symptoms, asking relevant questions, and explaining diagnostic and treatment procedures.	1
<b>Laboratory Work #10. Endocrine System: Structure and Function Vocabulary</b> Terminology building exercises focused on glands and hormones. Practice in explaining endocrine functions and changes in metabolic balance.	1
<b>Laboratory Work #11. Communicating Endocrine Disorders</b> Patient-centered language tasks involving the description of conditions like diabetes or thyroid disorders, symptom inquiries, and explaining medication routines.	1
<b>Laboratory Work #12. Sensory Organs: Clinical Communication Practice</b> Activities focused on describing visual and auditory impairments, eye and ear anatomy, and conducting patient interviews related to sensory issues	1
<b>Laboratory Work #13. Medication and Administration Routes</b> Applied vocabulary and simulations covering drug types, forms, dosages, and instructions for oral, injectable, and topical administration in Romanian.	1
<b>Laboratory Work #14. Final Revision and Language Consolidation</b> Integrated review of all systems through interactive quizzes, role-plays, and simulated clinical encounters to reinforce fluency and confidence in medical communication.	1

#### **Minimum References:**

1. Murar I, Nagy E. Romanian for Foreign Medical Students: Language and Communication Skills in Clinical Contexts. 2nd ed. Cluj-Napoca: Casa Cărții de Știință; 2021.
2. Păcurar A, Toma I. Romanian for Medical Purposes: A Practical Course for Foreign Students. 1st ed. Iași: Editura Universității „Grigore T. Popa” din Iași; 2020.
3. Tănase D, Dănilă C. Romanian Language for Medical Students: Vocabulary and Communication. 1st ed. Bucharest: Editura Universitară Carol Davila; 2022.
4. Chabner DE. The Language of Medicine. 12th ed. St. Louis, MO: Elsevier; 2021.
5. Glendinning E, Holmström B. English in Medicine: A Course in Communication Skills. 3rd ed. Cambridge: Cambridge University Press; 2020.
6. Teaching support materials

#### **Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- The content of the Medical Specialized Communication in Modern (Romanian) Foreign Languages (II) discipline aligns with the expectations of the medical academic community and healthcare employers by developing essential communication competencies for clinical and academic contexts in Romanian. It provides foreign medical students with the linguistic and professional tools necessary to interact effectively with patients, colleagues, and healthcare institutions. The course supports the integration of medical terminology, patient-centered communication, and professional ethics in accordance with the standards promoted by international bodies (WFME, AMEE), addressing the practical communication needs required in medical education, clinical training, and healthcare delivery in Romania.

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>Systematic and structured presentation of the principles and terminology of specialized medical communication in Romanian, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Practical activities focused on the development and correct use of specialized medical terminology in Romanian through analysis of medical texts, clinical case discussions and structured communication exercises.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

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**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

- 

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

- 

Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

- 

Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**

12.09.2025

**Discipline Coordinator,**  
Buză Iulia, Lecturer, PhD

**Head of Department,**  
Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD

**Course Coordinator,**

**Buză Iulia, Lecturer, PhD**

**Laboratory Coordinator,**

**Buză Iulia, Lecturer, PhD**

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>BACHELOR</b>
Study programme	<b>MEDICINE IN ENGLISH</b>

Discipline`s Name	<b>YEARLY MEDICAL PRACTICE FOR ACQUIRING MEDICAL SKILLS AND COMPETENCES</b>				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	-				
Didactic position, name and surname for the <b>Course Coordinator</b>	-				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	<b>Kraft Alin Alexandru, Lecturer, PhD Stoica-Mustafa Elena, Assist. Prof.</b>				
Discipline Code	<b>MLE.1.2.14</b>	Formative category of the discipline		<b>SS</b>	
Year of Study	<b>I</b>	Semester	<b>2</b>	Type of the final evaluation (E, V)	<b>V2</b>
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	<b>2</b>

No. of Hours per week	<b>40</b>	Out of which are Course hours:	-	Seminar / Practical Activity / Clinical Stage	<b>40</b>
Total of hours in the curriculum	<b>160</b>	Out of which are Course hours:	-	Seminar / Practical Activity / Clinical Stage	<b>160</b>
		Total hours per semester	<b>160</b>	Total hours of individual study	-

<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					0
2. Study according with the course support, manuals					0
3. Study of the minimal bibliography					0
4. Additional documentation in the library					0
5. Specific activity for the seminary or laboratory					0
6. Homework, translations, etc.					0

Distribution of time pool per week	Hours
7. Preparing for different written exams	0
8. Preparing for oral examinations	0
9. Preparing for the final examination	0
10. Consultations	0
11. In the field documentation	160
12. Documentation from web sources, portals, wiki websites	0
13. Tutoring	0
14. Examinations	0
15. Other activities:	0

Course name	YEARLY MEDICAL PRACTICE FOR ACQUIRING MEDICAL SKILLS AND COMPETENCES
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the organization and workflow of healthcare institutions and patient management systems.</li> <li>• Applying aseptic and antiseptic techniques in clinical environments to ensure infection control and patient safety.</li> <li>• Performing accurate bedside assessments, including measurement of vital parameters and clinical documentation.</li> <li>• Conducting basic therapeutic and diagnostic procedures under supervision.</li> <li>• Demonstrating professional responsibility, empathy, and effective communication with patients and healthcare staff.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Developing teamwork and interprofessional collaboration skills within the healthcare environment.</li> <li>• Demonstrating ethical and professional conduct in all patient interactions.</li> <li>• Adopting a patient-centered and safety-oriented attitude.</li> <li>• Applying self-reflection and continuous learning for skill improvement.</li> <li>• Integrating clinical knowledge with procedural practice and communication competence.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To familiarize students with the hospital environment, patient circuit, and medical team dynamics.</li> <li>• To cultivate basic practical and communication skills required for clinical training.</li> <li>• To promote professionalism, empathy, and responsibility in the context of patient care.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Understand the organization and administrative structure of a hospital.</li> <li>• Apply principles of asepsis and antisepsis in all clinical activities.</li> <li>• Perform routine bedside monitoring of vital signs and record findings accurately.</li> <li>• Execute basic medical maneuvers (e.g., blood pressure, blood glucose, oxygen administration).</li> <li>• Demonstrate appropriate professional behavior, patient communication, and adherence to ethical and legal norms.</li> </ul>
<b>Learning Outcomes</b>	

<b>Knowledge</b>	Students identify the organizational structure of healthcare institutions and the basic workflow of hospital departments, describe the principles of asepsis, antisepsis, and infection control used in clinical environments, understand the procedures used for patient monitoring, vital sign assessment, and basic clinical documentation.
<b>Skills</b>	Students interpret clinical information obtained through patient observation, anamnesis, and bedside monitoring, analyze patient data such as temperature, pulse, respiration, blood pressure, and blood glucose measurements, perform basic clinical procedures under supervision, including vital sign monitoring, oxygen administration, and simple therapeutic maneuvers.
<b>Responsibilities/ Autonomy</b>	Students apply principles of patient safety, asepsis, and infection control during clinical practice activities, use professional communication and ethical behavior when interacting with patients and healthcare staff, promote teamwork and responsibility within the multidisciplinary healthcare team during clinical training.

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Hospital Organization and Professional Conduct</b> Introduction to the structure and functioning of a medical-health unit. Includes the patient circuit, patient rights and responsibilities, informed consent procedures, and professional conduct guidelines for medical students in clinical settings.	30
<b>Laboratory Work #2. Asepsis, Antisepsis, and Patient Management</b> Training in basic hygiene and infection control practices, including medical handwashing and disinfection techniques. Introduction to patient approach and management strategies, with a focus on the care of bedridden patients.	40
<b>Laboratory Work #3. Patient Monitoring and Bedside Assessment</b> Development of skills for monitoring vital functions such as temperature, pulse, respiration, and output. Includes documentation in clinical observation sheets and training in patient anamnesis and basic clinical examination at the bedside.	40
<b>Laboratory Work #4. Basic Medical Maneuvers and Therapeutic Techniques</b> Practice of fundamental clinical skills including non-invasive blood pressure measurement, pulse and blood glucose assessment, oxygen therapy via nasal cannula, and administration of oral and inhaled medications.	40
<b>Laboratory Work #5. Optional Clinical Procedures</b> Optional hands-on experience with selected procedures such as electrocardiographic (ECG) recording, and administration of <b>intramuscular, intradermal, and subcutaneous</b> injections under supervision.	10

<b>Minimum References:</b>
1. Bickley LS, Szilagy PG, Hoffman RM. Bates' Guide to Physical Examination and History Taking. 13th ed. Philadelphia: Wolters Kluwer; 2021.
2. Dutton RP, Jones DG, Laupland KB, editors. Clinical Skills for Medical Students: A Step-by-Step Guide. 3rd ed. London: Elsevier; 2023.
3. Gaba DM. Patient Safety and Simulation in Clinical Practice. 2nd ed. New York: Springer Nature; 2022.
4. O'Neill PA, Dornan T, Dennick R. Clinical Skills in Medicine: Learning, Teaching and Assessment. 2nd ed. Oxford: Oxford University Press; 2021.
5. World Health Organization. WHO Guidelines on Hand Hygiene in Health Care: First Global Patient Safety Challenge – Clean Care Is Safer Care. Geneva: World Health Organization; 2023.

**Minimum References:**

- 6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

- The content of the Yearly Medical Practice for Acquiring Medical Skills and Competences discipline corresponds to the expectations of the academic medical community and healthcare employers by developing fundamental clinical and professional skills essential for future medical practice. It provides first-year medical students with direct exposure to hospital organization, patient care, asepsis, vital sign monitoring, and basic medical maneuvers, forming the basis for clinical reasoning and patient safety. The course is aligned with the requirements of the WFME, AMEE, and national health authorities, fostering professional conduct, empathy, and procedural competence consistent with international medical training standards.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li></li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>Practical training activities carried out in clinical settings, involving observation and participation in medical practice under supervision, with emphasis on the development of basic clinical skills and professional conduct.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

- 

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

- 

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

- 

Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

-

Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**  
12.09.2025

**Discipline Coordinator,**

**Head of Department,**  
**Ioan Sorin Tudorache, Assoc. Professor, M.D.,**  
**PhD**

**Course Coordinator,**

**Laboratory Coordinator,**

**Kraft Alin Alexandru, Lecturer, PhD**

**Stoica-Mustafa Elena, Assist. Prof.**

**Department Approval Date**  
18.09.2025



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>BACHELOR</b>
Study programme	<b>MEDICINE IN ENGLISH</b>

Discipline`s Name	<b>PHYSICAL EDUCATION</b>				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	<b>Urichianu Bogdan, Assist.Prof.</b>				
Didactic position, name and surname for the <b>Course Coordinator</b>	<b>Urichianu Bogdan, Assist.Prof.</b>				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	<b>Urichianu Bogdan, Assist.Prof.</b>				
Discipline Code	<b>MLE.1.2.16</b>	Formative category of the discipline		<b>CS</b>	
Year of Study	<b>I</b>	Semester	<b>2</b>	Type of the final evaluation (E, V)	<b>V2</b>
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>M</b>	No. of credits	<b>1</b>

No. of Hours per week	<b>1</b>	Out of which are Course hours:	-	Seminar / Practical Activity / Clinical Stage	<b>1</b>
Total of hours in the curriculum	<b>14</b>	Out of which are Course hours:	-	Seminar / Practical Activity / Clinical Stage	<b>14</b>
		Total hours per semester	<b>25</b>	Total hours of individual study	<b>11</b>

Distribution of time pool per week				Hours
1. Study of the course material				0
2. Study according with the course support, manuals				2
3. Study of the minimal bibliography				0
4. Additional documentation in the library				0

Distribution of time pool per week	Hours
5. Specific activity for the seminary or laboratory	1
6. Homework, translations, etc.	0
7. Preparing for different written exams	0
8. Preparing for oral examinations	0
9. Preparing for the final examination	1
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	1
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	PHYSICAL EDUCATION
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Development of general physical fitness (endurance, strength, speed, flexibility), supporting individual health and academic performance</li> <li>• Correct and safe execution of fundamental motor skills and basic sport techniques, with attention to injury prevention</li> <li>• Acquisition of proper posture and movement patterns, relevant for preventing musculoskeletal strain common in medical practice</li> <li>• Application of training principles adapted to individual fitness levels, within the framework of a healthy lifestyle</li> <li>• Understanding the role of physical activity in health promotion and disease prevention, as future healthcare professionals</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Teamwork and collaboration through group-based physical activities</li> <li>• Respect for rules, safety norms, and fair play</li> <li>• Responsible time management and consistent participation in health-enhancing extracurricular activities</li> <li>• Adoption of a proactive attitude toward personal well-being and self-care</li> <li>• Development of self-awareness regarding physical limits and progress, with the ability to regulate effort accordingly</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To support the development of physical, mental, and emotional well-being in medical students</li> <li>• To introduce students to a variety of physical activities and movement patterns that contribute to lifelong health</li> <li>• To lay the foundation for a physically active lifestyle, integrated into the demanding schedule of medical training</li> <li>• To encourage awareness of the importance of physical activity as a core component of public health</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To improve students' aerobic and muscular endurance through progressive physical challenges</li> <li>• To develop basic motor skills and functional movement relevant for posture and physical resilience</li> <li>• To familiarize students with structured physical training methods and individual performance assessment</li> <li>• To promote communication, cooperation, and stress reduction through physical group activities</li> <li>• To prepare students to advocate for physical activity in their future roles as medical practitioners</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the principles of physical training and their role in maintaining health and physical fitness, describe fundamental motor skills and basic training methods used to develop endurance, strength, speed, and flexibility, explain the role of regular physical activity in health promotion, disease prevention, and overall wellbeing.
<b>Skills</b>	Students interpret and perform basic physical exercises aimed at improving endurance, strength, coordination, and flexibility, analyze their physical performance through basic fitness tests and motor skill evaluations, evaluate training techniques and movement patterns used in structured physical activity programs.
<b>Responsibilities/ Autonomy</b>	Students apply principles of safe and effective physical training during individual and group exercise activities, use teamwork and cooperation skills in organized physical training sessions, adhere to healthy lifestyle practices and regular physical activity habits in daily life.

<b>Laboratory Syllabus</b>	<b>Hours</b>
<b>Laboratory Work #1. Communication of Guidelines and Rules</b> Organizing students into groups; light running alternated with mobility exercises	2
<b>Laboratory Work #2. General Physical Training Circuit</b> Use of equipment (fixed ladders, medicine balls, gymnastics benches, basic acrobatics); endurance run – Boys: 5 minutes   Girls: 4 minutes	2
<b>Laboratory Work #3. General Physical Training Circuit (Partner Exercises)</b> Free and medicine ball exercises in pairs, acrobatics; endurance run – Boys: 6 minutes   Girls: 5 minutes	2
<b>Laboratory Work #4. Outdoor General Physical Training Circuit</b> Stadium stairs, rope exercises, motor skill games; endurance run – Boys: 7 minutes   Girls: 6 minutes	2
<b>Laboratory Work #5. Development of Motor Skills – Speed and Endurance</b> Running drills, jumping and throwing exercises; long-distance running (8–10 minutes), sprinting (up to 50 meters), standing long jump	2
<b>Laboratory Work #6. Sports-Specific Skills Development</b> Technical and tactical exercises in sports games; table tennis – bilateral play; targeted musculoskeletal and general physical development exercises (flexibility, joint and muscle mobility)	2
<b>Laboratory Work #7. Assessment and Evaluation</b> Control tests and standards	2

**Minimum References:**

1. Beach PS, Perreault M, Brian A, Collier DH. Motor Learning and Development, 3rd ed. Champaign (IL): Human Kinetics; 2024.
2. Colvin AV, Egner NJ, Walker PJ. Teaching Fundamental Motor Skills, 4th ed. Champaign (IL): Human Kinetics; 2023.
3. Spittle M. Motor Learning and Skill Acquisition: Applications for Physical Education and Sport. London: Bloomsbury Academic; 2021.
4. Zaccagni L (ed). Physical Activity, Wellness and Health: Challenges, Benefits and Strategies. Basel: MDPI Books; 2021.
5. Colvin A Vonnie, Egner N J, Walker P J. Teaching Fundamental Motor Skills, 4th ed. (eBook with HKPropel). Champaign (IL): Human Kinetics; 2023. (Same as #2, acknowledging digital edition)
6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

The content of the Physical Education discipline aligns closely with the expectations of academic and professional stakeholders in the medical field by addressing the following key areas:

- Health promotion and disease prevention – In line with the priorities set by the World Health Organization (WHO), national health strategies, and public health bodies, the course fosters a culture of preventive care through physical activity, which is essential for future physicians acting as role models and health advocates.
- Resilience and well-being of healthcare professionals – Professional associations, such as the Romanian College of Physicians and international medical education bodies, emphasize the importance of physical and mental resilience in coping with the high demands of medical practice. This discipline contributes to building those foundations early in training.
- Patient-centered education and lifestyle counseling – As future healthcare providers, medical students are expected to possess not only clinical knowledge but also the ability to guide patients toward healthier lifestyles. Through personal engagement in physical activity, students develop the credibility and experiential understanding required to offer such counseling.
- Interdisciplinary competencies – Employers in hospitals and public health systems increasingly value transversal skills such as teamwork, time management, and stress coping mechanisms—skills which are cultivated through group-based physical training and structured routines embedded in this discipline.
- Compliance with curricular standards – The discipline supports the integration of general competencies stipulated in the national medical education framework, as well as recommendations by international bodies such as the WFME (World Federation for Medical Education), which advocate for student well-being and balanced development during medical studies.

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>•</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>• Practical physical activities performed by students aimed at improving physical fitness, coordination and endurance, with emphasis on the correct execution of exercises and the promotion of a healthy lifestyle.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

•

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

•

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

•

<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %
<b>Description of the actual methods of examination – E</b>	
•	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
•	•

**Date of completion**

16.09.2025

**Discipline Coordinator,**

**Course Coordinator,**

**Department Approval Date**

18.09.2025

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Laboratory Coordinator,**

**Urichianu Bogdan, Assist.Prof.**



**TITU MAIORESCU UNIVERSITY OF BUCHAREST**  
**FACULTY OF MEDICINE**  
**MEDICINE IN ENGLISH PROGRAM**  
**ACADEMIC YEAR: I**



2025-2026

## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>BACHELOR</b>
Study programme	<b>MEDICINE IN ENGLISH</b>

Discipline`s Name	<b>ETYMOLOGY AND MEDICAL TERMINOLOGY</b>					
Didactic position, name and surname of the <b>Discipline Coordinator</b>	<b>Seiman Corina, Assoc. Prof.</b>					
Didactic position, name and surname for the <b>Course Coordinator</b>	<b>Seiman Corina, Assoc. Prof.</b>					
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>	<b>Seiman Corina, Assoc. Prof.</b>					
Discipline Code	<b>M.O.1</b>	Formative category of the discipline		<b>SS</b>		
Year of Study	<b>I</b>	Semester	<b>1</b>	Type of the final evaluation (E, V)	<b>V1</b>	
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)				<b>E</b>	No. of credits	<b>2</b>

No. of Hours per week	<b>2</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	-
Total of hours in the curriculum	<b>28</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	-
		Total hours per semester	<b>50</b>	Total hours of individual study	<b>22</b>

<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					<b>1</b>
2. Study according with the course support, manuals					<b>7</b>
3. Study of the minimal bibliography					<b>1</b>
4. Additional documentation in the library					<b>1</b>
5. Specific activity for the seminary or laboratory					<b>0</b>

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	3
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	4
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	ETYMOLOGY AND MEDICAL TERMINOLOGY
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding and applying the morphological structure of medical terms (prefixes, roots, suffixes)</li> <li>• Accurately interpreting and constructing medical vocabulary used across clinical disciplines</li> <li>• Recognizing the etymological origin of terms to improve comprehension and retention</li> <li>• Enhancing precision in medical documentation, communication, and interdisciplinary dialogue</li> <li>• Facilitating learning of complex subjects through mastery of standardized terminology</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of clear and accurate professional communication skills</li> <li>• Strengthening of logical thinking and linguistic awareness in both native and foreign medical language contexts</li> <li>• Cultivation of lifelong learning strategies by reinforcing language-based comprehension</li> <li>• Application of terminological accuracy in multidisciplinary and multicultural health environments</li> <li>• Promotion of critical thinking through the analysis of word construction and meaning</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To introduce students to the structure, function, and importance of medical language</li> <li>• To cultivate a working knowledge of the most common prefixes, suffixes, and root words in medicine</li> <li>• To develop the ability to understand and use medical terms appropriately in various health science contexts</li> <li>• To provide foundational linguistic tools that facilitate learning in anatomy, physiology, pathology, and clinical subjects</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To identify the components of medical terms and explain their meanings</li> <li>• To apply principles of etymology in deciphering unfamiliar medical vocabulary</li> <li>• To analyze and construct medical terms related to the major systems of the human body</li> <li>• To use medical terminology correctly in oral and written communication</li> <li>• To support future learning by creating a strong lexical foundation for clinical disciplines</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the morphological components of medical terms, including prefixes, roots, and suffixes, describe the etymological origins and meanings of common medical terms used in different medical specialties, explain the structure and formation of medical terminology related to major organ systems.
<b>Skills</b>	Students interpret unfamiliar medical terms by analyzing their morphological and etymological components, analyze the structure of medical vocabulary used in anatomical, physiological, and clinical contexts, evaluate the correct use of medical terminology in professional communication and documentation.
<b>Responsibilities/ Autonomy</b>	Students apply principles of medical terminology in oral and written medical communication, use standardized medical vocabulary in academic and interdisciplinary contexts, use linguistic reasoning and terminological accuracy when interpreting and constructing medical terms.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Introduction to Medical Language and Etymology</b> Overview of the structure and specificity of medical language. Importance of accurate vocabulary usage in professional communication. The role of etymology in shaping specialized terminology.	4
<b>Course #2. Medical Prefixes and Suffixes</b> Study of common medical prefixes and suffixes. Exploration of their meanings and linguistic origins, with examples of their application in clinical vocabulary.	4
<b>Course #3. General Medical Roots – Descriptive Terms</b> Explanation of frequently used root words relating to form, size, location, color, and developmental states. Emphasis on how these elements define and modify medical terms.	4
<b>Course #4. System-Specific Roots – Musculoskeletal and Nervous Systems</b> Etymological analysis of roots associated with the locomotor system, nervous system, and sensory analyzers. Examples of term construction in neurological and orthopedic contexts.	4
<b>Course #5. System-Specific Roots – Respiratory and Cardiovascular Systems</b> Study of root words related to the lungs, airways, heart, and blood vessels. Insight into the terminology used in respiratory and cardiac pathologies.	4
<b>Course #6. System-Specific Roots – Digestive and Urogenital Systems</b> Examination of terminology foundations linked to the digestive tract and urinary-reproductive systems. Focus on accurate word formation and understanding.	4
<b>Course #7. System-Specific Roots – Endocrine and Metabolic Systems</b>	4

Course Syllabus	Hours
Clarification of the roots used in describing endocrine glands, hormones, and metabolic functions. Terminology used in endocrinology and metabolic disorders.	

Minimum References:
1. Walker-Esbaugh C, McCarthy L, Sparks R. Dunmore and Fleischer's Medical Terminology: Exercises in Etymology. 4th ed. Philadelphia (PA): F. A. Davis; 2023. Dunmore and Fleischer's Medical Terminology: Exercises in Etymology
2. Basco R, Krouse-Adams R, Allan D. Medical Language for Modern Health Care. 5th ed. New York (NY): McGraw-Hill Education; 2022.
3. Chabner D-E. Medical Terminology: A Short Course. 9th ed. Philadelphia (PA): Saunders/Elsevier; 2022. Medical Terminology: A Short Course
4. Schroeder K A, Ehrlich A. Comprehensive Medical Terminology for Health Professions. 1st ed. Boston (MA): Cengage Learning; 2023.
5. Andersson D. Medical Terminology: The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms. 2nd ed. Minnesota: Amazon Digital Services LLC; 2023. Medical Terminology: The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms
6. Teaching support materials

Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector
The content of Etymology and Medical Terminology aligns with the priorities of medical education bodies, professional associations, and healthcare employers by: <ul style="list-style-type: none"> <li>• Ensuring accurate medical communication, essential for patient safety and interprofessional collaboration</li> <li>• Supporting standardized terminology use, in line with clinical documentation systems and international classifications (ICD, SNOMED CT)</li> <li>• Facilitating clinical learning across disciplines by strengthening vocabulary comprehension</li> <li>• Preparing students for multilingual and intercultural contexts in global health environments</li> <li>• Contributing to digital health readiness, where precise language is key in EHRs and medical informatics</li> </ul>

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of the etymological origins and formation of medical terminology, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>•</li> </ul>

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:
•

Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:

•
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<b>Specific conditions for carrying out the theoretical and practical activities of the discipline:</b>
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•
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Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

<b>Description of the actual methods of examination – E</b>
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Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**

12.09.2025

**Discipline Coordinator,**

Seiman Corina, Assoc. Prof.

**Head of Department,**

Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD

**Course Coordinator,**

Seiman Corina, Assoc. Prof.

**Laboratory Coordinator,**

**Department Approval Date**

18.09.2025



**TITU MAIORESCU UNIVERSITY OF BUCHAREST**  
**FACULTY OF MEDICINE**  
**MEDICINE IN ENGLISH PROGRAM**  
**ACADEMIC YEAR: I**



2025-2026

## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>BACHELOR</b>
Study programme	<b>MEDICINE IN ENGLISH</b>

Discipline`s Name	<b>PRINCIPLES OF HEALTHY LIFE</b>					
Didactic position, name and surname of the <b>Discipline Coordinator</b>	<b>Oncioiu Ionica, Prof.</b>					
Didactic position, name and surname for the <b>Course Coordinator</b>	<b>Oncioiu Ionica, Prof.</b>					
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>						
Discipline Code	<b>M.O.2</b>	Formative category of the discipline		<b>SS</b>		
Year of Study	<b>I</b>	Semester	<b>1</b>	Type of the final evaluation (E, V)	<b>V1</b>	
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)				<b>E</b>	No. of credits	<b>2</b>

No. of Hours per week	<b>2</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	-
Total of hours in the curriculum	<b>28</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	-
		Total hours per semester	<b>50</b>	Total hours of individual study	<b>22</b>

<b>Distribution of time pool per week</b>				<b>Hours</b>
1. Study of the course material				<b>1</b>
2. Study according with the course support, manuals				<b>7</b>
3. Study of the minimal bibliography				<b>1</b>
4. Additional documentation in the library				<b>1</b>
5. Specific activity for the seminary or laboratory				<b>0</b>

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	3
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	4
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	PRINCIPLES OF HEALTHY LIFE
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the theoretical and practical foundations of Traditional Chinese Medicine as a complementary approach to health</li> <li>• Identifying and interpreting basic concepts of energy balance, Qi, meridians, and organ systems in TCM</li> <li>• Applying knowledge of nutrition, emotional regulation, and lifestyle practices to promote holistic well-being</li> <li>• Evaluating the role of phytotherapy, acupuncture, and movement therapies (Qigong, Tai Chi) in disease prevention and health maintenance</li> <li>• Integrating selected TCM concepts into modern medical practice with cultural sensitivity and clinical relevance</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Developing intercultural awareness and openness toward integrative and traditional health systems</li> <li>• Enhancing personal well-being and emotional resilience through exposure to stress-reducing practices</li> <li>• Strengthening communication skills by learning to explain preventive lifestyle strategies to patients</li> <li>• Encouraging ethical reflection and personal responsibility regarding physician well-being and patient modeling</li> <li>• Promoting interdisciplinary collaboration between conventional and complementary medicine</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To introduce students to the philosophy and clinical principles of Traditional Chinese Medicine as part of an integrative approach to health</li> <li>• To promote awareness of non-Western health systems and their contribution to holistic medicine</li> <li>• To encourage self-care practices that improve quality of life and professional longevity for healthcare providers</li> <li>• To foster a preventive mindset in medical students, emphasizing balance, moderation, and lifestyle medicine</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To define key concepts of TCM such as Yin-Yang, Qi, the Five Elements, and meridians</li> <li>• To describe the impact of nutrition, emotions, and movement practices on physical and mental health according to TCM</li> <li>• To explore the therapeutic potential of acupuncture, phytotherapy, Qigong, and Tai Chi</li> <li>• To assess the relevance of TCM principles in guiding patient lifestyle recommendations and preventive care</li> <li>• To cultivate reflective thinking and ethical responsibility in relation to healthy living and the physician's role as a health model</li> </ul>
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Learning Outcomes	
<b>Knowledge</b>	Students identify the fundamental concepts of Traditional Chinese Medicine, including Yin–Yang balance, Qi, the Five Elements, and energy meridians, describe the influence of nutrition, emotions, and lifestyle factors on health and disease prevention, explain the role of complementary practices such as acupuncture, phytotherapy, Qigong, and Tai Chi in promoting wellbeing.
<b>Skills</b>	Students interpret lifestyle and behavioral factors influencing health from an integrative and preventive medicine perspective, analyze the relationship between emotional balance, nutrition, and physical activity in maintaining health, evaluate complementary health practices and their relevance for preventive medicine and patient counseling.
<b>Responsibilities/ Autonomy</b>	Students apply principles of healthy lifestyle and preventive medicine in personal and professional contexts, use culturally sensitive approaches when discussing integrative health practices with patients, adhere to ethical responsibility and reflective thinking when promoting balanced lifestyle practices and wellbeing.

Course Syllabus	Hours
<b>Course #1. Introduction to Traditional Chinese Medicine</b> History and philosophy of Traditional Chinese Medicine (TCM), highlighting its foundational concepts such as the view of health and disease, and how it differs from Western medicine in its approach to diagnosis and treatment.	2
<b>Course #2. Yin-Yang and Qi Principles – Vital Energy</b> Examining the concept of Yin and Yang and their complementary nature. Overview of Qi (vital energy), its different types, functions, circulation in the body, and the impact of Yin-Yang imbalances on health.	2
<b>Course #3. The Five Elements – The Foundations of Energy Balance</b> Introduction to the Five Element theory and its role in energy balance. Discussing the cycle of generation and control between the elements and their corresponding internal organs, and how these principles govern physiological processes.	2
<b>Course #4. Nutrition in Traditional Chinese Medicine</b> Exploring the role of nutrition as a form of treatment in TCM. Classification of foods (hot, cold, neutral) and how a balanced diet is tailored according to seasons and individual constitution. The relationship between different tastes (sour, bitter, sweet, spicy, salty) and their impact on organs.	2

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #5. Dietary Imbalances and Their Impact on Health</b> Understanding the consequences of excess or deficiency in specific tastes (sour, bitter, sweet, spicy, salty). Examples of dysfunctions caused by unbalanced nutrition and their effects on the body according to TCM principles.	2
<b>Course #6. The Energy Meridians of the Human Body</b> Explanation of the main meridian system and its role in the transport of Qi throughout the body. Discussing meridian imbalances and their associated symptoms, and how energy flows through the body's network of channels	2
<b>Course #7. Acupuncture Points – Basic Functions and Applications</b> Identification of meridians and major acupuncture points. Therapeutic uses of acupuncture for balancing Qi, prevention, and promoting general health.	2
<b>Course #8. Phytotherapy in Traditional Chinese Medicine</b> Study of medicinal plants used in TCM. Principles for combining plants into formulas and their therapeutic applications. Discussion on the risks and interactions of TCM phytotherapy with modern treatments.	2
<b>Course #9. Emotions and Health from the Perspective of Traditional Chinese Medicine</b> Exploring the relationship between emotions and specific organs in TCM. Understanding how emotional imbalances (e.g., anger, fear, joy) affect physical health and wellbeing.	2
<b>Course #10. Emotion Management Techniques and Mental Harmonization</b> Techniques for emotional balance and mental health, including conscious breathing, meditation, and introspection. Practices designed to reduce stress and restore emotional equilibrium.	2
<b>Course #11. Introduction to Qigong – Exercises for Health</b> Overview of Qigong as an ancient practice for energy balance and revitalization. Introduction to basic Qigong exercises designed to improve Qi circulation, health, and vitality.	2
<b>Course #12. Introduction to Tai Chi – Movement and Mental Health</b> Discussing Tai Chi as a form of “moving meditation” and its benefits for cardiovascular and mental health. Examining the impact of Tai Chi on improving balance, strength, and overall wellbeing.	2
<b>Course #13. Applying Healthy Living Principles in Medical Practice</b> Integrating the concepts of Traditional Chinese Medicine into modern healthcare. Providing personalized lifestyle recommendations for disease prevention based on TCM principles.	2
<b>Course #14. Ethics and Responsibility in Healthcare: The Perspective of Oriental Medicine</b> The holistic approach to the doctor-patient relationship in TCM. Reflection on the core values of balance, harmony, and moderation. Encouraging practitioners to cultivate a lifestyle that aligns with these principles and serves as a model for patients.	2

<b>Minimum References:</b>
1. Liu Y. The Essential Book of Traditional Chinese Medicine: Volume 2 – Clinical Practice. New York: Columbia University Press; 2020.
2. Xu L. Principles of Traditional Chinese Medicine: The Essential Guide to Understanding the Human Body. London: Singing Dragon; 2021.
3. Moy T. Tai Chi Qigong: The Internal Foundation of Tai Chi Chuan. London: Paul Crompton Ltd; 2022.
4. Gold J. Heal Yourself with Traditional Chinese Medicine: Find Relief from Chronic Pain, Stress, Hormonal Issues and More. Emeryville (CA): Rockridge Press; 2022.
5. Lo V, Cullen C, Barnes L, editors. Routledge Handbook of Chinese Medicine. London: Routledge; 2022.
6. Teaching support materials

**Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector**

The discipline Principles of Healthy Life aligns with current priorities in medical education and healthcare by:

- Supporting preventive and lifestyle medicine, as promoted by WHO and public health authorities
- Enhancing intercultural competence through exposure to traditional medical systems like TCM
- Promoting physician well-being and stress management via Tai Chi, Qigong, and emotional regulation
- Providing tools for holistic patient education and culturally sensitive counseling
- Preparing students for integrative healthcare models increasingly adopted by employers

**How the information is transmitted**

Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of the fundamental principles of a healthy lifestyle and health promotion, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>•</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

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**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

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**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

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Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

**Description of the actual methods of examination – E**

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Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**

11.09.2025

**Discipline Coordinator,  
Oncioiu Ionica, Prof.**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,  
Oncioiu Ionica, Prof.**

**Laboratory Coordinator,**

**Department Approval Date**

18.09.2025



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>BACHELOR</b>
Study programme	<b>MEDICINE IN ENGLISH</b>

Discipline`s Name	<b>HEALTH PSYCHOLOGY</b>				
Didactic position, name and surname of the <b>Discipline Coordinator</b>	<b>Răpițeanu Carmen, Lecturer, PhD</b>				
Didactic position, name and surname for the <b>Course Coordinator</b>	<b>Răpițeanu Carmen, Lecturer, PhD</b>				
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>					
Discipline Code	<b>M.O.3</b>	Formative category of the discipline		<b>CS</b>	
Year of Study	<b>I</b>	Semester	<b>2</b>	Type of the final evaluation (E, V)	<b>V2</b>
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)			<b>E</b>	No. of credits	<b>2</b>

No. of Hours per week	<b>2</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	-
Total of hours in the curriculum	<b>28</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	-
		Total hours per semester	<b>50</b>	Total hours of individual study	<b>22</b>

Distribution of time pool per week					Hours
1. Study of the course material					1
2. Study according with the course support, manuals					7
3. Study of the minimal bibliography					1
4. Additional documentation in the library					1
5. Specific activity for the seminary or laboratory					0
6. Homework, translations, etc.					0

Distribution of time pool per week	Hours
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	3
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	4
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	HEALTH PSYCHOLOGY
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding psychological factors that influence health, illness, and recovery</li> <li>• Applying knowledge of stress, coping, and health behavior change in clinical contexts</li> <li>• Recognizing psychological responses to chronic illness, pain, and terminal conditions</li> <li>• Enhancing doctor–patient communication through empathy and active listening</li> <li>• Integrating psychological principles to improve treatment adherence and patient care</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Development of self-awareness and emotional regulation in high-stress medical environments</li> <li>• Strengthening interpersonal and communication skills in clinical and interdisciplinary settings</li> <li>• Promoting reflective thinking and ethical sensitivity in healthcare delivery</li> <li>• Encouraging a proactive approach to self-care, mental well-being, and burnout prevention</li> <li>• Cultivating openness to psychological diversity and social determinants of health</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To introduce students to the main concepts and applications of health psychology in medicine</li> <li>• To provide a biopsychosocial understanding of illness and patient care</li> <li>• To foster awareness of the psychological dimensions of medical practice</li> <li>• To support the development of holistic and empathetic future physicians</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To describe how stress, personality, and health behaviors affect disease and healing</li> <li>• To identify psychological barriers to treatment adherence and communication</li> <li>• To recognize emotional reactions to illness and end-of-life care</li> <li>• To apply basic strategies for managing stress and improving well-being</li> <li>• To reflect on the physician’s role in promoting both physical and mental health</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the psychological factors that influence health, illness, and recovery within the biopsychosocial model, describe the role of stress, personality, health behaviors, and social determinants in the development and management of disease, explain psychological mechanisms involved in treatment adherence, pain perception, coping strategies, and patient–physician communication.
<b>Skills</b>	Students interpret psychological responses to illness, stress, and chronic disease in clinical contexts, analyze health behaviors and psychosocial determinants that influence patient outcomes and treatment adherence, evaluate communication strategies and psychological interventions used in patient-centered healthcare.
<b>Responsibilities/ Autonomy</b>	Students apply principles of health psychology to improve patient communication and treatment adherence, use strategies for stress management and emotional resilience in medical practice, adhere to ethical and empathetic approaches when addressing psychological aspects of patient care and wellbeing.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Introduction to Health Psychology</b> Definition, scope, and history of health psychology. Biopsychosocial model vs. biomedical model. Key concepts and relevance in medical practice.	2
<b>Course #2. Stress and Health</b> Physiological and psychological responses to stress. The role of stress in illness. Coping strategies. Introduction to stress management.	2
<b>Course #3. Personality and Health</b> Impact of personality traits (e.g., Type A/B, optimism, resilience) on health outcomes and health behaviors. Psychological risk and protective factors.	2
<b>Course #4. Health Behaviors and Lifestyle Factors</b> Smoking, alcohol, diet, exercise, sleep, and sexual behavior. Models for behavior change: Health Belief Model, Theory of Planned Behavior.	2
<b>Course #5. Adherence to Medical Treatment</b> Factors influencing treatment compliance. Strategies to improve adherence. Patient-provider communication and motivational interviewing.	2
<b>Course #6. Pain: Perception and Management</b> Psychological aspects of pain. Acute vs. chronic pain. Cognitive-behavioral approaches to pain management. Placebo and nocebo effects.	2
<b>Course #7. Chronic Illness and Psychological Adaptation</b> Adjustment to chronic conditions (diabetes, cancer, HIV, cardiovascular disease). Emotional responses, stigma, and coping mechanisms.	2
<b>Course #8. Patient–Physician Communication</b>	2

Course Syllabus	Hours
Elements of effective communication. Verbal and nonverbal skills. Barriers to communication. Empathy and active listening.	
<b>Course #9. Emotions and Illness</b> The role of anxiety, depression, anger, and grief in medical conditions. Emotional regulation and mental health screening in clinical care.	2
<b>Course #10. Health Inequalities and Sociocultural Factors</b> Social determinants of health. Impact of socioeconomic status, culture, gender, and ethnicity on health beliefs and access to care.	2
<b>Course #11. Illness Cognition and Health Perception</b> How patients understand and interpret symptoms, diagnoses, and risks. Attribution theory, cognitive distortions, and illness narratives.	2
<b>Course #12. Psychological Interventions in Healthcare</b> Relaxation training, cognitive-behavioral therapy, mindfulness, and psychoeducation. Integration in primary care and hospital settings.	2
<b>Course #13. Death, Dying, and Bereavement</b> Psychological responses to terminal illness. Stages of grief. Communicating bad news. Physician support in end-of-life care.	2
<b>Course #14. The Healthy Doctor: Emotional Resilience and Burnout Prevention</b> Self-care, stress management, and resilience in medical professionals. Recognizing burnout. Promoting psychological well-being in healthcare.	2

Minimum References:
1. Ogden J. Health Psychology: A Textbook. 6th ed. McGraw-Hill Education; 2019.
2. Marks DF, Murray M, Evans B, Estacio EV. Health Psychology: Theory, Research and Practice. 5th ed. Sage; 2020.
3. Sarafino EP, Smith TW. Health Psychology: Biopsychosocial Interactions. 10th ed. Wiley; 2023.
4. Taylor SE. Health Psychology. 11th ed. McGraw-Hill; 2023.
5. Gellman MD, Turner JR (eds). Encyclopedia of Behavioral Medicine. 2nd ed. Springer; 2021.
6. Teaching support materials

Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector
The Health Psychology course meets the expectations of academic and professional stakeholders by: <ul style="list-style-type: none"> <li>• Promoting the biopsychosocial model in medical education</li> <li>• Enhancing communication and empathy in clinical care</li> <li>• Addressing treatment adherence and health behaviors</li> <li>• Supporting physician well-being and burnout prevention</li> <li>• Preparing students for holistic, patient-centered care</li> </ul>

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of the fundamental concepts and principles of health psychology, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>
Laboratory (Practical Work)	<ul style="list-style-type: none"> <li>•</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:**

•

**Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:**

•

**Specific conditions for carrying out the theoretical and practical activities of the discipline:**

•

<b>Consideration points for computing the final score:</b>	<b>Percentage share of scoring (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %
<b>Description of the actual methods of examination – E</b>	
•	
<b>Minimal requirements for grade 5 (or how grade 5 is awarded)</b>	<b>Requirements for grade 10 (or how grade 10 is awarded)</b>
•	•

**Date of completion**

15.09.2025

**Discipline Coordinator,**

**Răpîțeanu Carmen, Lecturer, PhD**

**Head of Department,**

**Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD**

**Course Coordinator,**

**Răpîțeanu Carmen, Lecturer, PhD**

**Laboratory Coordinator,**

**Department Approval Date**

18.09.2025



**TITU MAIORESCU UNIVERSITY OF BUCHAREST**  
**FACULTY OF MEDICINE**  
**MEDICINE IN ENGLISH PROGRAM**  
**ACADEMIC YEAR: I**



2025-2026

## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>BACHELOR</b>
Study programme	<b>MEDICINE IN ENGLISH</b>

Discipline`s Name	<b>HISTORY OF MEDICINE</b>					
Didactic position, name and surname of the <b>Discipline Coordinator</b>	<b>Hancu Violeta, Assoc.Prof.</b>					
Didactic position, name and surname for the <b>Course Coordinator</b>	<b>Hancu Violeta, Assoc.Prof.</b>					
Didactic position, name and surname for the <b>Coordinator of the Seminar / Laboratory / Clinical Traineeship</b>						
Discipline Code	<b>M.O.4</b>	Formative category of the discipline		<b>CS</b>		
Year of Study	<b>I</b>	Semester	<b>2</b>	Type of the final evaluation (E, V)	<b>V2</b>	
Discipline Regime ( <b>M</b> -mandatory, <b>E</b> -elective)				<b>E</b>	No. of credits	<b>2</b>

No. of Hours per week	<b>2</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	-
Total of hours in the curriculum	<b>28</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	-
		Total hours per semester	<b>50</b>	Total hours of individual study	<b>22</b>

<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					<b>1</b>
2. Study according with the course support, manuals					<b>7</b>
3. Study of the minimal bibliography					<b>1</b>
4. Additional documentation in the library					<b>1</b>
5. Specific activity for the seminary or laboratory					<b>0</b>

Distribution of time pool per week	Hours
6. Homework, translations, etc.	0
7. Preparing for different written exams	1
8. Preparing for oral examinations	0
9. Preparing for the final examination	3
10. Consultations	1
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	4
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	HISTORY OF MEDICINE
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Understanding the historical evolution of medical concepts, practices, and institutions across civilizations</li> <li>• Recognizing the cultural, philosophical, and scientific factors that shaped the development of medicine</li> <li>• Analyzing the continuity and transformation of core medical principles over time</li> <li>• Identifying the roots of modern medical disciplines (e.g. anatomy, physiology, microbiology, hygiene)</li> <li>• Appreciating historical contributions of key figures, including Romanian scientists, to global medical progress</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Cultivating a humanistic and culturally informed approach to medical practice</li> <li>• Strengthening critical thinking by examining the historical context of scientific paradigms</li> <li>• Enhancing ethical reflection on past medical practices and their relevance to contemporary dilemmas</li> <li>• Encouraging professional identity development through historical awareness</li> <li>• Promoting interdisciplinary dialogue between medicine, philosophy, history, and society</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To provide students with a foundational understanding of the evolution of medicine from ancient to modern times</li> <li>• To highlight the interplay between cultural, scientific, and philosophical elements in shaping medical knowledge</li> <li>• To contextualize current medical practice within a historical and civilizational framework</li> <li>• To foster an appreciation of the values, challenges, and progress that have marked the medical profession</li> </ul>

<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• To trace the development of major medical systems (Western, Eastern, Arab, etc.) through key historical periods</li> <li>• To identify significant discoveries, institutions, and figures in the history of medicine</li> <li>• To analyze how medical thinking has responded to major societal challenges (e.g. epidemics, wars, technological revolutions)</li> <li>• To explore the historical foundations of key disciplines (surgery, hygiene, pathology, microbiology, etc.)</li> <li>• To recognize and value Romanian contributions to international medical knowledge and education</li> </ul>
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<b>Learning Outcomes</b>	
<b>Knowledge</b>	Students identify the major historical stages in the development of medicine from ancient to modern times, describe the contributions of important medical schools, discoveries, and historical figures to the evolution of medical science, explain the influence of cultural, philosophical, and scientific contexts on the development of medical knowledge and healthcare systems.
<b>Skills</b>	Students interpret historical medical concepts and their relevance to modern medical practice, analyze the evolution of medical disciplines and scientific paradigms across different historical periods, evaluate historical sources and medical developments in relation to social and cultural contexts.
<b>Responsibilities/ Autonomy</b>	Students apply historical knowledge to understand the ethical and professional foundations of modern medical practice, use critical reflection when discussing the evolution of medical ideas and healthcare systems, apply a humanistic and culturally informed perspective when analyzing the development of the medical profession.

<b>Course Syllabus</b>	<b>Hours</b>
<b>Course #1. Introduction to the History of Medicine</b> Definition, importance, and positioning of the history of medicine within the broader context of cultural and civilizational history. Focus on prehistoric medicine: empiricism, ethnoiatry, and paleopathology.	4
<b>Course #2. Ancient Medicine – Part I</b> Overview of medical practices in ancient civilizations, including Assyro-Babylonian medicine, Egyptian medicine, Indian medicine, and traditional Chinese medicine.	4
<b>Course #3. Ancient Medicine – Part II</b> Cultural and philosophical foundations of Hellenistic civilization. Development of the Hippocratic School and other contemporary medical currents. Contributions of the Alexandria Medical School and Roman medicine.	4
<b>Course #4. Medieval Medicine</b> Religious, political, cultural, and philosophical premises of medicine during the Middle Ages. Medical developments in the Arab Caliphates, Byzantium, and Western Europe. Founding of the first medical faculty in Salerno. Overview of major epidemics.	4
<b>Course #5. Renaissance and the Enlightenment</b> Medical advancements during the Renaissance: universities of Bologna and Padua, the emergence of anatomy and the optical microscope. Scientific developments during the	4

Course Syllabus	Hours
Enlightenment and their impact on medicine. Growth of physiology, emergence of hygiene, and preventive medicine.	
<b>Course #6. The 19th Century and Beyond</b> Significance of experimental physiology (Claude Bernard), contributions of biological chemistry (Louis Pasteur), and advances in microbiology (Ignaz Semmelweis, Joseph Lister, Robert Koch). Morphopathology and the work of Rudolf Virchow. Rapid development of medicine in the 20th and 21st centuries; the critical role of online medical databases and urinary-reproductive systems. Focus on accurate word formation and understanding.	4
<b>Course #7. Romanian Contributions to Global Medicine</b> Key contributions of Romanian physicians to universal medical knowledge. The foundation and evolution of medical education in Romania.	4

Minimum References:
1. Cooter R, editor. <i>A Cultural History of Medicine: Volumes 1-6</i> . London: Bloomsbury Academic; 2024.
2. Majerus B. <i>History of Medicine: European Perspectives</i> . Brussels: [publisher unspecified]; 2021.
3. Nutton V. <i>Renaissance Medicine: A Short History of European Medicine in the Sixteenth Century</i> . London: Routledge; 2022.
4. Waddell MA. <i>Magic, Science, and Religion in Early Modern Europe</i> . Cambridge: Cambridge University Press; 2021.
5. Bouras-Vallianatos P. <i>Innovation in Byzantine Medicine: The Writings of John Zacharias Aktouarios (c.1275-c.1330)</i> . Oxford: Oxford University Press; 2020.
6. Teaching support materials

Correlation of the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and representative employers in the health sector
The discipline History of Medicine aligns with the expectations of the academic and medical professional community by: <ul style="list-style-type: none"> <li>• Providing a historical framework for understanding the evolution of medical thought, ethics, and institutions — a priority for well-rounded medical education promoted by WFME and national accrediting bodies</li> <li>• Encouraging critical reflection on medical progress, failures, and paradigm shifts, supporting ethical and professional awareness among future healthcare providers</li> <li>• Promoting interdisciplinary and humanistic competencies, in line with modern curricula that value the intersection of science, philosophy, and society</li> <li>• Supporting the formation of a professional identity rooted in historical continuity, as encouraged by medical educators and academic employers</li> <li>• Highlighting Romanian and international contributions to global medicine, fostering cultural pride, international openness, and academic professionalism</li> </ul>

How the information is transmitted	
Type of Activity	Teaching methods used
Lecture	<ul style="list-style-type: none"> <li>• Systematic and structured presentation of the historical development of medicine and the major milestones in medical science, delivered through oral exposition and interactive question-and-answer discussions.</li> </ul>

How the information is transmitted	
Laboratory (Practical Work)	•

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works to be accepted to the final laboratory exam:
•

Minimum set of activities that must be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining an average of 5 in the practical exams:
•

Specific conditions for carrying out the theoretical and practical activities of the discipline:
•

Consideration points for computing the final score:	Percentage share of scoring (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	15 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	5 %

Description of the actual methods of examination – E	
•	
Minimal requirements for grade 5 (or how grade 5 is awarded)	Requirements for grade 10 (or how grade 10 is awarded)
•	•

**Date of completion**  
12.09.2025

**Discipline Coordinator,**  
Hancu Violeta, Assoc.Prof.

**Head of Department,**  
Ioan Sorin Tudorache, Assoc. Professor, M.D.,  
PhD

**Course Coordinator,**  
Hancu Violeta, Assoc.Prof.

**Laboratory Coordinator,**

**Department Approval Date**  
18.09.2025