

## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>ANATOMY AND EMBRYOLOGY</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Tudorache Ioan Sorin, Lecturer, Ph. D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Tudorache Ioan Sorin, Lecturer, Ph. D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Hârşovescu Tudor, Lecturer, Ph. D.</b> <b>Dincă Gabi-Valeriu, Lecturer, M.D., Ph. D., MD</b> <b>Tudorache Ioan Sorin, Lecturer, Ph. D.</b> <b>Köver Zoltan Janos, M.D., Ph. D. Student</b> <b>Coroescu Mirela, Ph. D.</b>				
Discipline Code	<b>M.1.1.1</b>	Formative category of the discipline		<b>FD</b>	
Year of Study	<b>I</b>	Semester	<b>1</b>	Type of the final evaluation (E, V)	<b>E1</b>
Discipline Regime ( <b>M</b> -mandatory, <b>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>7</b>

No. of Hours per week	<b>8</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>6</b>
Total of hours in the curriculum	<b>112</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>84</b>
		Total hours per semester	<b>175</b>	Total hours of individual study	<b>63</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					7
2. Study according with the course support, manuals					14
3. Study of the minimal bibliography					7
4. Additional documentation in the library					7
5. Specific activity for the seminary or laboratory					7
6. Homeworks, translations, etc.					0
7. Preparing for different witten exams					0
8. Preparing for oral examinations					0

9. Preparing for the final examination	11
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	8
13. Tutoring	2
14. Examinations	0
15. Other activities:	0

Course name	ANATOMY AND EMBRYOLOGY
<b>Specific professional competencies</b>	- Description and interpretation of basic de terms of morphology and functioning of the human body, insertion of these into concepts/situations which apply onto human body, aiming to formulate hypotheses and to properly interpret the signs and paraclinical changes for establishing morphologic and clinical diagnosis, for developing new professional competence for general and specific healthcare
<b>Transversal competencies</b>	- Accomplishment of abilities and skills permitting the identification of objectives to be fulfilled, of the available resources, of the conditions to achieve them, of the steps of the task, of the phases of work, of the afferent deadlines and risks, with the minimal standard of: accomplishment of projects under tutorship for solutioning of specific problems in the field
<b>General objectives of the discipline</b>	- Mastering of basic knowledge regarding the morphology of the head, neck, trunk and limbs
<b>Specific objectives of the discipline</b>	- Shaping of a spatial, tri-dimensional representation of the human body, as a whole and in details, knowledge of fundamental relations in topography of the limbs, building of ontogenetic representation in their dynamics useful in pre-natal diagnosis and for understanding the mechanism of occurrence of certain malformations accomplishment of abilities and dexterity

Course Syllabus	Hours
1. Introductory course. History of anatomy. Romanian School of Anatomy. Introductory to the ontogenesis. Reproduction.	2
2. Gametogenesis. The primordial germ, gamet, divisions. Spermatogenesis. Ovogenesis.	2
3. Fecundation. Segmentation.	2
4. Weeks II and III. Evolution of trofoblast and embryonic disc	2
5. Evolution and derivatives of embryonic sheets	2
6. Fetal period. Ari-fetal emb appendix. Amniotic vesicles, calf, alantoid, placenta, umbilical cord.	2
7. Gemelary pregnancy, multiple. Development of the spine and limbs. Noteratology.	2
8. Breast region. The antero-lateral abdominal wall.	2
9. Axila. The bicipital sanctions. Anterior region of the elbow. Carpal canal. Topography of the hand	2
10. Artrology. Generalities. Classification, notions of biomechanics.	2
11. The joints of the trunk.	2

<b>Course Syllabus</b>	<b>Hours</b>
12. Upper limb joints.	2
13. Inguinal canal. Femoral trigon. The adductor channel. Popliteal region. The calcaneal canal.	2
14. Clinical anatomy and imaging	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
1. Introduction. Axes and body orientation plans	3
2. The vertebrae. Sacred, coccyx. The spine as a whole	3
3. Stern, ribs. Bone thorax. Live anatomy – bone markers. Counting ribs, vertebrae. Guidance lines. Clinical and radiological anatomy of the trunk skeleton. Spinal puncture, thoracocentesis.	3
4. Clavicle, scapula, humerus, radius, uln, hand skeleton. Live anatomy – bone markers upper limb. Clinical and radiological anatomy of the skeleton of the upper limb.	3
5. Coxal, bone pelvis. Internal, external pelvic. Femur, pate	3
6. Tibia, fibula, leg skeleton. Live anatomy–bone marks lower limb. Clinical and radiological anatomy of the skeleton of the lower limb.	3
7. Colocviu 1	3
8. The muscles of the back and neck	3
9. Antero-lateral thoracic wall. Vascularization, innervation.	3
10. Axil - walls, content. Artery and axillary vein. Axillary lymph nodes.	3
11. Brachial plexus.	3
12. The anterior region of the arm - muscles, vessels and nerves	3
13. The anterior and lateral regions of the forearm – muscles, vessels and nerves. The superficial veins of the upper limb.	3
14. Topographic palm regions - muscles, vessels, nerves	3
15. The posterior regions of the arm and forearm – muscle vessels and nerves	3
16. The posterior region of the hand – muscles, vessels and nerves. Anatomy live. of the upper limb. Clinical and radiological anatomy of the upper limb.	3
17. Colocviu 2	3
18. Abdominal antero-lateral wall – muscles, vessels and nerves	3
19. Lumbar and sacral plexuses	3
20. The anterior region of the thigh – muscles, vessels and nerves	3
21. The anterior and lateralregions of the calf – muscles, vessels and nerves.	3
22. The plantar and dorsal regions of the foot – muscles, vessels and nerves	3
23. The ghesier region – muscles, vessels and nerves	3
24. The posterior regions of the thigh and poplite – muscles, vessels and nerves	3
25. The posterior region of the calf – muscles, vessels and nerves. The calcaneal canal. The superficial veins of the lower limb. Live anatomy of the lower limb. Clinical and radiological anatomy of the lower limb.	3
26. Colocviu 3	3
27. Embryology 1	3
28. Embryology 2	3

**Minimal References:**

1. Anatomia omului – Pereții trunchiului - sub redacția Prof. V. Ranga – litografia IMF București, Editura Cerma
2. Anatomia omului – Membrerele - sub redacția Prof. V. Ranga – litografia IMF București, Editura Cerma
3. Anatomie umană – Pereții trunchiului - sub redacția Prof. Cezar Th. Niculescu, Editura Infomedica București 1998
4. Anatomia funcțională a membrilor - sub redacția Prof. Cezar Th. Niculescu, Editura Tehnoplast Company București 1999
5. Anatomia omului Vol.I Aparatul locomotor - Victor Papilian - 2005
6. Anatomia dezvoltării omului – Armand Andronescu, Editura Didactică - 1992
7. Anatomia lui Gray pentru studenți – A. Wayne Vogl, Adam W. M. Mitchell, Richard L. Drake, Elsevier, 2016
8. Anatomie clinică – fundamente și aplicații – Keith L. Moore, Arthur F. Dalley, Anne M.R. Agur, Editura Calisto 2012
9. Langman's medical embryology - 2016

**Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:**

- Applicability of the lectures and practicals for obtaining abilities and competence specific for the speciality

**Disemination of the information**

Type of activities	Didactic Methods Employed
Course	- Interactive courses, PowerPoint support; scientific films
Laboratory	- Working in teams of 2 or 3 students per device; each student analyses the protocol as it is written in the manual of the corresponding laboratory. - Teaching students the principle of the method, the apparatus and mode of work; each student makes a report, a scientific paper, in order to become familiar with the kind of concise drafting, and data processing (statistics/graphics).

**Minimal performance standards****Minimum standard of performance - minimum scale of activities to be performed by the student in practical work**

- the presence of the student at a minimum of 70% practical work and the restoration of all absences (including absences from evaluations during the semester) - the carrying out of reports for the understanding of the basics of the practical work in question.
- identification of basic anatomical formations on the teaching materials used (skeleton, bone collection, corpses, anatomical preparations, iconography, radiological iconography and imaging)
- interactive participation in the practical work; answers to the questions of the teacher holding practical work, discussions.

**Minimum scale of activities to be performed by the student in the practical exam in order to be admitted to the exam (final verification):**

- Obtaining the average 5 in the practical examinations of anatomy and embryology

**Minimal performance standards**

- The practical examination of anatomy consists in identifying a minimum of 14 of 27 anatomical formations on teaching materials (skeleton, bone collection, corpses, anatomical preparations, iconography, results radiological and imaging examinations).
- The practical examination of embryology consists in the recognition of the elements on the subject extracted - an image of embryological development presented during the practical work (the portfolio of images for each semester is made available to students at the beginning of each semester), plus:
  - for grade 5 - presentation of the basics related to the subject;
  - for grade 10 - detailed presentation of information on the subject and related aspects of human development.

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

- For the acquisition by the student of the minimum level of competences specific to the discipline we consider it necessary to participate interactively in practical work, the promotion of colloquiums, practical examinations of anatomy and embryology and the solving of subjects in the final examination.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	10 %
- Periodic checks with written exams	20 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

**Description of the actual methods of examination:**

- The exam consists of the oral presentation of the 3 subjects extracted by the student from the 3 categories (1 category course subjects and 2 categories subjects practical papers).
- The promotion of colloquium 2 and 3, i.e. with an average equal to or higher than grade 7, has a partial exam value, de-resiting the student from the category of subjects of appropriate practical work. All subjects are brought to the attention of the students at the beginning of the semester.
- The exam is held in groups, time is given to students and is transparent. At least 3 students, the holder of the discipline, the head of practical works and the university assistant who guided the group in the semester. Medicine being a profession that requires communication with patients and communication between doctors, we consider that oral examination allows us to evaluate basic anatomical knowledge and induces the student the need to establish anatomical-clinical correlations.

Minimal requirements for mark 5	Requirements for mark 10
<ul style="list-style-type: none"> <li>• The presence of the student at least 70% practical work with the restoration of all absences.</li> <li>• Supporting the 3 colloquiums and obtaining at least a grade of 5 to 2 of 3 colloquiums (the colloquials are also restored).</li> <li>• Making the reports related to the practical work and the knowledge of the basics of the practical work.</li> </ul>	<ul style="list-style-type: none"> <li>• Average over 9 in the 3 colloquiums during the semester.</li> <li>• Average over 9 in the practical examinations of anatomy and embryology.</li> <li>• Average over 9 on the 3 exam subjects extracted.</li> </ul>

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| <ul style="list-style-type: none"><li>• Obtaining the 5th average in the practical examinations of anatomy and embryology.</li><li>• Minimum responses (note 5) to topics extracted from the 3 categories of topics.</li></ul> |  |
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**Date of completion**

24.09.2017

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**Discipline Coordinator,**

Lecturer Tudorache Ioan Sorin, Ph. D.

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**Course Coordinator,**

Lecturer Tudorache Ioan Sorin, Ph. D.

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**Department approval date**

30.09.20109

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**Head of Department,**

Assoc. Professor Nemes Roxana, M.D., Ph. D.

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**Laboratory Coordinators,**

Hârşovescu Tudor, Lecturer, Ph. D.  
Dincă Gabi-Valeriu, Lecturer, Ph. D., MD  
Tudorache Ioan Sorin, Lecturer, Ph. D.  
Köver Zoltan Janos, Ph. D. Student, M.D.  
Coroescu Mirela, Ph. D.

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## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	LICENSE
Study program	MEDICINE

Discipline`s Name	<b>BIOCHEMISTRY (I)</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Moldoveanu Elena, Univ. Professor, Ph.D</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Moldoveanu Elena, Univ. Professor, Ph.D</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Moldoveanu Elena, Univ. Professor, Ph.D, Elena Rusu, Assoc. Professor, Ph. D. Daciana Marta, Lecturer, Ph.D,</b>				
Discipline Code	<b>M.1.1.2</b>	Formative category of the discipline		<b>FD</b>	
Year of Study	<b>I</b>	Semester	<b>1</b>	Type of the final evaluation (E, V)	<b>E1</b>
Discipline Regime ( <b>M</b> -mandatory, <b>Op</b> -optional, <b>F</b> -facultative)			<b>O</b>	No. of credits	<b>6</b>

No. of Hours per week	<b>4</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>2</b>
Total of hours in the curriculum	<b>56</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>28</b>
		Total hours per semester	<b>150</b>	Total hours of individual study	<b>94</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					14
2. Study according with the course support, manuals					28
3. Study of the minimal bibliography					10
4. Additional documentation in the library					10

5. Specific activity for the seminary or laboratory	0
6. Homeworks, translations, etc.	0
7. Preparing for different written exams	5
8. Preparing for oral examinations	0
9. Preparing for the final examination	15
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	5
13. Tutoring	4
14. Examinations	3
15. Other activities:	0

Course name	BIOCHEMISTRY (I)
<b>Specific professional competencies</b>	<ol style="list-style-type: none"> <li>1. Proper use of concepts in the field of biochemistry and molecular biology.</li> <li>2. Understanding how to regulate biochemical reactions in the body and the pathological consequences of their disorder.</li> <li>3. Interdisciplinary approach to the concepts in the field of biochemistry.</li> <li>4. The ability to provide independent information and interpretation of the knowledge obtained.</li> </ol>
<b>Transversal competencies</b>	<ol style="list-style-type: none"> <li>1. Application of strategies of perseverance, rigour, efficiency and responsibility in the workplace, punctuality and accountability for the results of personal activity, creativity, common sense, analytical and critical thinking, problem solving, etc., based on the principles, rules and values of the code of professional ethics.</li> <li>2. Application of interrelationship techniques within a team; amplification and cising of empathic interpersonal communication and specific tasks in carrying out group work in order to deal/resolve individual/group conflicts, as well as optimal time management.</li> </ol>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Presentation of the importance of biochemical processes in explaining phenomena in the living world in normal and pathological situations.</li> </ul>
<b>Specific objectives of the discipline</b>	<ol style="list-style-type: none"> <li>1. Introducing chemical and biochemical language and explaining the importance, origin and meaning of the basic concepts.</li> <li>2. Presentation of the importance of biochemical processes in explaining phenomena in the living world.</li> <li>3. Introduce the concepts necessary to understand how information is transferred to the living world.</li> <li>4. Knowledge and understanding of metabolic processes carried out in organs, tissues, cells.</li> <li>5. Presentation of concepts that form a basis for understanding other disciplines (physiology, genetics, embryology, cell biology, physiology).</li> <li>6. Ability to use modern biochemical analysis techniques.</li> <li>7. Use of enzyme determinations for diagnostic specification.</li> </ol>

	8. Investigation of metabolisms: carbohydrate, lipid, protein, mineral, hormonal and correlation of biochemical parameters with appropriate pathological situations.
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<b>Course Syllabus</b>	<b>Hours</b>
<b>MAIN CHAPTERS</b>	
1. Aminoacids. Proteins.	6
2. Enzymes	4
3. Vitamins	4
4. Glucids	2
5. Lipids	2
6. Nucleic acids	6
7. Hormones	4
<b>SUBCHAPTERS</b>	
1. The correlation of biochemistry with other medical disciplines. Structure, classification and physico-chemical properties of amino acids.	2
2. Peptide – definition, structure. More important natural peptides (glutation, angiotensin).	2
3. Properties. Classification. Plasma proteins. Immunoglobulins, fibrinogen, collagen, elastin – structure and role. Hemoglobin and myoglobin - structure and role.	2
4. Enzyme. General, classification. The specificity of enzymes. Enzymatic kinetics. Michaelis-Menten equation, factors influencing the speed of enzyme reactions, inhibitors competitive, uncompetitive and competitive.	2
5. Adjustment of enzymatic activity. Allosteric enzymes.	2
6. Fat-soluble vitamins.	2
7. Hydrosoluble vitamins.	2
8. Monosaccharides, oligosaccharides, polysaccharides, aminos, deoxysozahars General information.	2
9. Lipid. General information.	2
10. Nucleic acids. Structural components: nitrogen bases, nucleotides, nutmegs. General structure. DNA structure. DNA biosynthesis (replication). Reverstranscription Telomerase	2
11. RNA: classification, structure and role. BIOSintes RNA on DNA matrix (transcription).	2
12. Protein biosynthesis. Genetic code. Mutations.	2
13. Hormones. Definition, classification. Mechanism of action. Hypothalamic and pituitary hormones. Neurohypophysis hormones: vasopressin and ocytocin; Role.	2
14. Pancreatic hormones: insulin and glucagon; structure, biosynthesis, metabolism, regulation of secretion, biological actions. Thyroid hormones: structure, biosynthesis, transport, metabolism, regulation of secretion, biological actions. Sexual horrmoms. Meduloadrenal hormones: catecholamines, structure, biosynthesis, metabolism, regulation of secretion, biological actions. Hormones that regulate phosphocal metabolism: parathormon, calcitonin, calcitriol.	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
1. Labour protection. Solutions. Definition.Ways of expressing solution concentration.	2
2. pH solutions. Definition. Determination of the pH of solutions by using indicators.	2

Laboratory Syllabus	Hours
3. Buffer solutions. Definition. Determination of Pka Determination of the pH of a buffer solution. Buffering capability.	2
4. Volumetry based on neutralization reaction	2
5. Amino acids. General notions. Buffer capacity of amino acids. Electrophoresis Amino acid identification reactions. Protein. Protein precipitation (reversible, irreversible). Color reactions to identify proteins. Dialysis.	2
6. Determination of enzymatic activity. Determination of the Michaelis-Menten constant.	2
7. Determination of urease activity.	2
8. Factors affecting enzyme activity. Temperature. pH. Ionic strength.	2
9. Determination of amylase activity.	2
10. Seminar amino acids, proteins, enzymes.	2
11. Identification of nucleic acids.	2
12. Identification of structural components of nucleic acids	2
13. Restorations of works.	2
14. Colloquium.	2

#### Minimal References:

1. Moldoveanu E., 2011, Curs de Biochimie Medicală – Ediția A V-a completată și revizuită, Ed. Universității "Titu Maiorescu", București, 221 pg. ISBN: 978-606-8002-53-6
2. . Moldoveanu E., Marta D., 2015, Biochimie Medicală- Lucrări practice, Ed. Universității "Titu Maiorescu"/ Ed. Hamangiu, București, 82 pg., ISBN Titu Maiorescu: 978-606-767-009-7/ ISBN Hamangiu: 978-606-27-0506-0
3. Harper's Illustrated Biochemistry 31st Edition, Ed. McGraw-Hill Professional Publishing, 2018
4. Marks' Basic Medical Biochemistry 5th Edition, Smith C, Marks AD, Lieberman M, Lipincott Williams&Wilkins, 2017
5. Biochemistry, L. Stryer, W.H. Freeman and company, 8th Edition, 2015

#### Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:

- Determination of the composition, structure and physico-chemistry properties of some chemical compounds (carbohydrates, lipids, proteins, amino acids); the use of the apparatus and technique necessary for the analysis of biological samples (sampling, processing and dosing of organic compounds) according to the quality criteria of laboratory analyses; performing dosages of the most important blood parameters (calcemia, blood sugar, sideremia, etc.) as well as interpreting the results allow to acquire skills necessary to carry out practical activity in the clinical laboratory.

#### Disemination of the information

Type of activities	Didactic Methods Employed
Course	- Interactive exposure of the material according to the analytical program, using the retroprojector, board, computer, PPT. Interactive discussions based on the topics covered.
Laboratory	- Practical and theoretical applications. Students work practically the experiments described in the laboratory's analytical syllabus in groups of 2-3 students or individually under the supervision of

Disemination of the information	
	the teacher. Admitted/rejected-condition of acceptance at the final session test of accumulated knowledge.

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works in order to be accepted to the final laboratory exam:
- In order to be accepted for practical works examination, the student has to undergo all hours of practical works.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	50 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	20 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

Description of the actual methods of examination:	
Written exam with descriptive test and a quiz (5 theoretical subjects and 6 questions in the quiz)	
Minimal requirements for mark 5	Requirements for mark 10
<ul style="list-style-type: none"> <li>Passing 3 out of 5 subjects and 2 questions in the quiz</li> </ul>	<ul style="list-style-type: none"> <li>Passing 5 out of 5 subjects and 6 out of 6 questions in the quiz.</li> </ul>

**Date of completion**  
30.09.2017

**Discipline Coordinator,**  
Univ. Professor Moldoveanu Elena, Ph.D

**Course Coordinator,**  
Univ. Professor Moldoveanu Elena, Ph.D

**Department approval date**  
30.09.2017

**Head of the Department,**  
Assoc. Professor Nemes Roxana,  
Ph.D

**Laboratory Coordinator,**  
Univ. Professor Moldoveanu Elena,  
Ph.D,  
Assoc. Professor Elena Rusu, Ph. D.  
Univ. Lecturer Daciana Marta, Ph.D,



## DISCIPLINE FILE

Faculty	MEDICINE
Department	PRECLINICAL SCIENCES
Field of study	HEALTHCARE
Study cycle	LICENSE
Study program	MEDICINE

Discipline`s Name	CELLULAR AND MOLECULAR BIOLOGY				
Didactic position, name and surname for the Coordinator of the Discipline	Cristiana Tănase, Univ. Professor, Ph. D.				
Didactic position, name and surname for the Coordinator of the Course	Cristiana Tănase, Univ. Professor, Ph. D.				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	Cristiana Tănase, Univ. Professor, Ph. D.				
Discipline Code	M.1.1.3	Formative category of the discipline		FD	
Year of Study	I	Semester	1	Type of the final evaluation (E, V)	E1
Discipline Regime (M-mandatory, Op-optional, F-facultative)			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
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					16
2. Study according with the course support, manuals					10
3. Study of the minimal bibliography					8
4. Additional documentation in the library					6

5. Specific activity for the seminary or laboratory	7
6. Homeworks, translations, etc.	4
7. Preparing for different written exams	0
8. Preparing for oral examinations	5
9. Preparing for the final examination	6
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	3
13. Tutoring	2
14. Examinations	0
15. Other activities:	2

Course name	MOLECULAR AND CELLULAR BIOLOGY
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>- Recognition and understanding of the mechanisms and functions of the living cell and their components.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Accommodating the student with the medical terminology specific to morphological disciplines.</li> <li>- Accommodation to the specifics of medical activity by giving oral presentations both during the semester and at the exam.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Theoretical approach to biological phenomenon at the cellular and molecular level.</li> <li>- Presentation of the ultrastructure elements and functional mechanisms of the cell. Specific techniques to study the cell.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- The student's acquisition of the ability to correlate theoretical notions with practical observation of electron microscopy images and histological blades in tissues and organs in order to understand the future pathological processes at these levels.</li> <li>- Acquiring the capacity to evaluate the results of the molecular techniques used.</li> </ul>

Course Syllabus	Hours
1. Subject of the course, history; Cell – organizational models, chemical composition	2
2. Cell membrane and endometrium, molecular organization	2
3. Membrane transport – part I	2
4. Membrane transport - part II	2
5. Cellular flags. Receivers, signal transduction	2
6. Cytoplasm, as the cell's skeleton, cellular motility	2
7. Specialized structures of the membrane - intercellular junctions	2
8. Core: nuclear envelope, nucleoplasma; organization of chromatin	2
9. Genes: expression regulation, structure and organization of the EK gene, transcription and translation process (proteosynthesis)	2
10. Ribosomes; proteasomes. Cytoplasmic inclusions	2
11. Endoplasmic reticulum and Golgi complex	2
12. Post-biosynthetic protein processing	2
13. Mitochondria	2
14. Lysosomes, peroxisomes and blister traffic	2

Laboratory Syllabus	Hours
1. General aspects of cell study.	2
2. Microscopic technique: optical microscopy.	2
3. Microscopic technique: electron microscopy.	2
4. Microscopic preparation; stages of obtaining.	2
5. Staining.	2
6. Cell structure under the optical microscope - the appearance of the nucleus, cytoplasm, organelles.	2
7. Ultrastructure of the cell. Cell membranes.	2
8. Ultrastructure of the cell. Organelles and nucleus.	2
9. Cell cultures.	2
10. Cell cycle and cell division	2
11. Silico analysis of biological information.	2
12. Biomedical databases. Molecular diagnosis. Proteomic approaches.	2
13. Recap of the material from the practical work. Preparing for the practical exam.	2
14. Practical works examination	2

#### Minimal References:

1. Alberts B., Johnson A., Lewis J., Raff M., Roberts K., Walter P. „Molecular Biology of the Cell”, fifth edition, Garland Publishing Inc., 2007
2. Alberts B., Bray D., Hopkin K., Johnson A., Lewis J., Raff M., Roberts K., Walter P. „Essential Cell Biology”, third edition, Garland Publishing Inc., 2009
3. Lodish H., Berk A., Kaiser C. A., Krieger M., Scott M.P., Bretscher A., Ploegh H. „Molecular Cell Biology”, fifth edition, W.H.Freeman, 2004
4. Cooper G.M., Hausman R.E. „The Cell: A Molecular Approach”, fifth edition, ASM Press& Sinauer Associates, 2009
5. Lewin B. „Genes VIII”, Prentice Hall, 2004
6. Manu D. „Biologie celulară și moleculară” Editura Titu Maiorescu, București, 2011
7. Mixich F., Ardelean T. „Principii fundamentale de biologie moleculară”, Ed. Medicala Universitara, 2002;
8. Modulul Biblioteca virtuala din cadrul secțiunii e-learning a site-ului [www.utm.ro](http://www.utm.ro)
9. The official course

#### Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:

The study of the intrinsic structural and functional mechanisms characteristic of matter is the foundation of the understanding of the knowledge that will be acquired in clinical internships, allowing the development of research and clinical laboratories, resulting in a good insertion of graduates into the labour market. The analytical programme of the discipline determines the training of professional doctors who will serve European citizens/patients with equal rights and increasing needs.

#### Disemination of the information

Type of activities	Didactic Methods Employed
Course	- PowerPoint presentation on videoprojector
Laboratory	- Using molecular biology lab - Kits used in molecular and analytical techniques - Devices, equipment and specific laboratory supplies.

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

- Mandatory presence at all the work provided for in the analytical syllabus.
- Promoting the practical exam.
- Knowledge of how to use of optical microscope and interpretation of images in different types of microscopy.
- Making microscopic preparations.
- Working skills with pipettes and solutions

<b>Consideration points for computing the final score:</b>	<b>Share of the final score (in %) (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	-
- Projects / Translations / Posters / Essays, etc.	10 %
- Other activities:	-
<b>Description of the actual methods of examination:</b> - written exam / practical exam with individual tasks	
<b>Minimal requirements for mark 5</b>	<b>Requirements for mark 10</b>
<ul style="list-style-type: none"> <li>• promotion of the practical exam is the condition for admission to the final verification</li> <li>• achieving a score of 50% correct answers to the written exam</li> </ul>	<ul style="list-style-type: none"> <li>• maximum testing score during the semester, practical exam and corresponding score on the written exam</li> </ul>

**Date of completion**

27.09.2017

**Discipline Coordinator,**

Cristiana Tănase, Univ. Professor, Ph. D.

**Head of the Department,**

Nemeş Roxana, Assoc. Professor,  
MD, Ph.D

**Course Coordinator,**

Cristiana Tănase, Univ. Professor, Ph. D.

**Laboratory Coordinator,**

Cristiana Tănase, Univ. Professor,  
Ph. D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>MEDICAL GENETICS</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Budişteanu Magdalena, Assoc. Professor, Ph. D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Budişteanu Magdalena, Assoc. Professor, Ph. D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Budişteanu Magdalena, Assoc. Professor, Ph. D.</b>				
Discipline Code	<b>M.1.1.4</b>	Formative category of the discipline		<b>FD</b>	
Year of Study	<b>I</b>	Semester	<b>1</b>	Type of the final evaluation (E, V)	<b>E1</b>
Discipline Regime ( <b>M</b> -mandatory, <b>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>5</b>

No. of Hours per week	<b>4</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>2</b>
Total of hours in the curriculum	<b>56</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>28</b>
		Total hours per semester	<b>125</b>	Total hours of individual study	<b>69</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					12
2. Study according with the course support, manuals					10
3. Study of the minimal bibliography					6
4. Additional documentation in the library					10

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

Course name	MEDICAL GENETICS
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>- Proper use of genetics concepts.</li> <li>- Understanding the mechanisms of the occurrence of genetic abnormalities.</li> <li>- Knowledge of the main genetic syndromes, genetic transmission mechanisms, management of genetic diseases.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Demonstrate concern for professional development by or training critical thinking skills;</li> <li>- Demonstrate involvement in scientific activities;</li> <li>- Demonstrate the ability to work as a team.</li> <li>- Have the ability. to self-assess.</li> <li>- To behave ethically.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- To become familiar with the main notions of human genetics and their implications in human pathology</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- To correctly capture the specific aspects of human genetics.</li> <li>- Understand the basics of the mechanisms of the occurrence of genetic diseases, the techniques for investigating genetic abnormalities, the main genetic syndromes.</li> </ul>

Course Syllabus	Hours
1. The Pedegree. How to interpret a pedigree. Transmission modes. Penetration and expressiveness. Mosaicism. Problems with the interpretation of a pedigree	2
2. The structure of human chromosomes. Elements common to all chromosomes. Specific elements of each chromosome. Chromosome-specific elements. Chromosome behavior during cell division.	2
3. Studying human chromosomes. How chromosomes can be studied –ethnics of classical and molecular cytogenetics: karyotyping; immunofluorescent in situ hybridization technique (FISH), comparative genomic hybridization technique by microarray (arrayCGH). Indications, advantages and disadvantages of each technique.	2
4. Numerical and structural chromosomal abnormalities. Variations in the number of children. Balanced and unbalanced anomalies. Constitutional and mosaic anomalies	2
5. Chromosome syndromes. Down syndrome. Edwards syndrome. Patau syndrome. Cri-du-chat syndrome. Wolf-Hirschhorn syndrome. Turner syndrome. Klinefelter syndrome	2
6. Micro chain syndromes. Angelman syndrome. Prader-Willi syndrome. Williams-Beuren syndrome. DiGeorge syndrome.	2

<b>Course Syllabus</b>	<b>Hours</b>
7. Mendelian analysis of normal and pathological characters in humans. Mendelian laws. Dominant and recessive autosomal heredity. It's the x-linked autosomal and recessive redness. Y-linkata heredity	2
8. Structure of nucleic acids. Gene structure – exons and introns. How translation and transcription takes place. Epigenome.	2
9. How we study a patient's DNA. Hybridnucleic acids. Polymerization Chain Reaction (PCR). Types of PCR. Indications, advantages, limitations.	2
10. Gene mutations. The deletion or duplication of a gene. The damage to a gene. Mutations affecting the transcription. Moves that affect the spicing (matting). Mutations that cause translation errors. Mutations with loss of function or gain of function. Phenotype-genotype correlations.	2
11. Studying gene mutations. Sequencing – types of sequencing, indications, interpretations.	2
12. Teratogenesis. Teratogenic factors and effects. Teratogenic mechanisms. Teratogen agents and their phenotypic effects	2
13. Population genetics. Genetic structure of the population. Hardy-Weinberg Law. Genetic markers in population studies. Factors that alter the genetic balance of the population. The state of heterozygote. The effect of the "founder".	2
14. Genetic services offered to families with genetic diseases. The importance of genetic diagnosis. Risk assessment and genetic advice. The role of the dysmorphology examination. Genetic testing – prenatal and postnatal diagnosis. Management of genetic diseases	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
1. Family investigation. Method and technique. Preparation for genetic screening.	2
2. The method of the family tree. Technique. Conventional signs. Interpretation.	2
3. Normal human karyotype. Making the human karyotype.	2
4. Chromosome band analysis. Types of chromosome bands. Highlighting methods. Importance of studying the chromosome bands for human pathology.	2
5. Numeric and structural aberrations. Mechanisms. Nomenclature. Demonstrations.	2
6. Sexual chromatin. Methods for highlighting sexual chromatin. Identification of genetic sex. Applications in medicine.	2
7. Chromosome syndromes. Recognition of the most common chromosomal syndromes based on characteristic phenotypic aspects..	2
8. Molecular cytogenetics techniques (FISH, arrayCGH). Micro chain syndromes – recognition of the most common micro-teleletia syndromes based on characteristic phenotypic aspects..	2
9. The study of meiosis in humans. Fazel's meiotic division. The importance of meiosis study. Examples of normal and pathological situations.	2
10. Mendelian transmission. Mendelian laws. Monohybridization. Dihybridation. Polygenia. Normal and pathological characters.	2
11. Erythrocytic genetic systems in humans. Gene systemtic AB, Hb, Rh. Problems. Genetic affiliation.	2
12. Biometric assessment over ontogenic periods. Constitutional types and medical implications.	2
13. Dermatoglyphics analysis. Dermatoglyphosis and pliosis in genetic diseases.	2
14. Gene diseases. Mechanisms of appearance. Investigative techniques. Examples of cases.	2

**Minimal References:**

1. New Clinical Genetics. A. Read, D. Donnai. Scion Publishing Ltd. 2007
2. Genetică Umană. Emilia Severin. Ed. SCRIPTA, 2002.
3. Genetică medicală. Mircea Covic, Dragos Stefanescu, Ionel Sandovici, Ed. Polirom 2011.
4. International Human Genome Sequencing Consortium (2004) Finishing the euchromatic sequence of the human genome. Nature, 431: 931–945.
5. The official course

**Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:**

- The knowledge gained from the course of this discipline will facilitate the understanding of the etiopathic mechanisms of various conditions with genetic determinism in human pathology; they can also be a starting point for students' participation in scientific research in the field of biomedical sciences.

**Disemination of the information**

Type of activities	Didactic Methods Employed
Course	- PowerPoint presentation on projector screen; interactive exercises: presentations and case studies.
Laboratory	- Use of specific informational teaching materials. Presentation of laboratory notions in PowerPoint format with discipline-specific examples.

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

- Attendance at all labs during the semester.
- The possession of all the concepts taught at the laboratory.
- Active participation during the laboratory.
- Participation in periodic testing with a minimum score of 5.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	-
- Projects / Translations / Posters / Essays, etc.	10 %
- Other activities:	-

**Description of the actual methods of examination:** - written exam / practical exam with individual tasks

Minimal requirements for mark 5	Requirements for mark 10
<ul style="list-style-type: none"> <li>• Submission to the examination</li> <li>• Regular testing through control works with correct final answers, i.e. obtaining satisfactory scores during these tests during the semester</li> <li>• Correct completion of subjects in the final exam</li> </ul>	<ul style="list-style-type: none"> <li>• Completing the course of all the requirements of the final exam</li> <li>• If applicable, the student who participated in reports/essays/translations receives a 20% bonus on the final grade</li> </ul>

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**Date of completion**

27.09.2017

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**Discipline Coordinator,**

Name

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**Budişteanu Magdalena, Assoc.  
Professor, Ph. D.**

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**Course Coordinator,**

Name

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**Budişteanu Magdalena, Assoc.  
Professor, Ph. D.**

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**Department approval date**

30.09.2017

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**Head of the Department,**

Name

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**Nemeş Roxana, Assoc. Professor,  
MD, Ph.D**

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**Laboratory Coordinator,**

Name

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**Budişteanu Magdalena, Assoc.  
Professor, Ph. D.**



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>MEDICAL INFORMATICS AND BIOSTATISTICS</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Pau Valentin-Corneliu, Univ. Professor, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Pau Valentin-Corneliu, Univ. Professor, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Stănescu Octavian, Univ. Assistant, Ph. D.</b>				
Discipline Code	<b>M.1.1.5</b>	Formative category of the discipline		<b>CD</b>	
Year of Study	<b>I</b>	Semester	<b>1</b>	Type of the final evaluation (E, V)	<b>E1</b>
Discipline Regime ( <b>M</b> -mandatory, <b>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>5</b>

No. of Hours per week	<b>4</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>2</b>
Total of hours in the curriculum	<b>56</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>28</b>
		Total hours per semester	<b>125</b>	Total hours of individual study	<b>69</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					10
2. Study according with the course support, manuals					10
3. Study of the minimal bibliography					5
4. Additional documentation in the library					5

5. Specific activity for the seminary or laboratory	10
6. Homeworks, translations, etc.	6
7. Preparing for different written exams	0
8. Preparing for oral examinations	0
9. Preparing for the final examination	8
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	10
13. Tutoring	3
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>- competences in knowledge and appropriate use of the usual terms in computer science</li> <li>- computer operating skills</li> <li>- competences concerning the drafting of electronic documents</li> <li>- competences on information and documentation by computer means</li> <li>- management and analysis of data structured in tables</li> <li>- the use of computer elements in hospitals, offices</li> <li>- general notions of statistics – medical statistics</li> <li>- using Microsoft Excel – general calculation functions and statistical functions</li> <li>- integration of information technology into the medical community.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- acquiring logical thinking skills for correct solutions</li> <li>- ability to work in a team</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- general knowledge of computer science</li> <li>- ability to analyze and synthesize with the help of the computer</li> <li>- capacity to assess and self-assess the activities carried out</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- deepening basic rules in computer science (documentation/protection)</li> <li>- training of a knowledge bag in the field</li> </ul>

Course Syllabus	Hours
1. Development of algorithmic machines; Evolution of computer science; The role of abstraction; Ethical, social and legal implications.	4
2. Internet. Web, e-mail, usenet newsgroups, electronic auction, electronic acquisition, internet files, cyberchat.	4
3. The management system of data bases. The Access software. Introductory elements: principles for building a database; approach using the Design View software. Tables, reports, queries, forms.	2
4. The database. MEDLINE	2
5. Biostatistics. Graphics, histogram. Language of distributions, median. Arithmetic mean, decile, centile, quartz. Dispersions, normal distributions	6
6. E-commerce	2
7. Social networks	2

<b>Course Syllabus</b>	<b>Hours</b>
8. PowerPoint	2
9. Spam	1
10. Viruses	1
11. Computer protection measures (speech, signatures, cryptography)	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
1. Windows. Options. Word Multitasking and taskbar. Organization of the windows workshop (workshop). Connecting.	4
2. The management system of databases. Access software. Introductory elements. Start the access program. The table database window. Forms. Questions. Reports. Principles of construction (realization) of a data basis. How to approach using the wizard program. How to approach using the program design view.	6
3. Communication possibilities; Information; Programmes; Services. Internet service providers; Online services; How to open an account. Collecting items; Use of items; Tracking; Preparation of dispatch; The ways in which answers are made.	4
4. MedLine Plus. Information about drugs. Medical encyclopedia. Medical dictionary. Medical news. Nomenclatures for the domain.	4
5. Biostatistics. Graphic synthesis.	4
6. E-commerce: shops, auctions, payment methods.	2
7. Social media.	2
8. Computer protection measures.	2

<b>Minimal References</b>
1. Dragomirescu L., Drane J.W., - Biostatistica pentru începători, Ed. Ars Docenti, București, 2019
2. Medical biostatistics – A. Indrayan, Chapman & Hall Publishing, Second Edition, 2018
3. Bailar, John C./ Hoaglin, David C, 2009 - Medical uses of statistics, John Wiley & Sons Inc., 2019
4. Pau V., Stănescu O. – Informatică medicală și biostatistică, note de curs, 2017-2018

<b>Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:</b>
- The course allows integration into a responsible professional environment, being in line with the requirements of European university education by constantly updating the information and thus corresponding to the expectations of representatives of the epistemic community, professional associations and employers in the field of health.

<b>Disemination of the information</b>	
<b>Type of activities</b>	<b>Didactic Methods Employed</b>
Course	- The courses will be presented in Power Point format, course notes will be available to each student at the end of each course.
Laboratory	- All practical work will be carried out on the computer. Data for performing statistical calculations can be found on each computer in computer labs and will be processed using Microsoft Excel

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

- Meeting a minimum number of attendances at laboratory activities (at least 8);
- Active participation in the application examples of laboratory hours, general understanding of concepts and examples developed;
- Obtaining a pass rating on at least one of the two tests provided for during the semester.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	-
- Continuous testing through the semester	20 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

**Description of the actual methods of examination:** - written exam / practical exam with individual tasks

Minimal requirements for mark 5	Requirements for mark 10
<ul style="list-style-type: none"> <li>• Obtaining a number of 5 points (grade 5) out of the total of 10 assigned for different categories of subjects at the final verification</li> <li>• Activity during the semester, participation in at least half of laboratory activities</li> <li>• The ability to explain and argue the role of medical statistics</li> </ul>	<ul style="list-style-type: none"> <li>• Correct and complete resolution of exam subjects</li> <li>• Active participation in courses, laboratories, tests, control works</li> <li>• Correct answers to survey questions, additions with new and current information from literature</li> <li>• Performing complete, detailed, quality laboratory work</li> <li>• The ability to explain and argue the calculation methods for examples of statistical calculation.</li> </ul>

**Date of completion**

27.09.2017

**Discipline Coordinator,**

Pau Valentin-Corneliu, Univ. Professor, Ph.D.

**Head of the Department,**

Nemeş Roxana, Univ. Professor, M.D., Ph.D.

**Course Coordinator,**

Pau Valentin-Corneliu, Univ. Professor, Ph.D.

**Laboratory Coordinator,**

Stănescu Octavian, Univ. Assistant, Ph. D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>MEDICAL SPECIALIZED COMMUNICATION IN MODERN LANGUAGE (I)</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Mirela Radu, Lecturer, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Mirela Radu, Lecturer, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Mirela Radu, Lecturer, Ph.D.</b>				
Discipline Code	<b>M.1.1.6</b>	Formative category of the discipline		<b>CD</b>	
Year of Study	<b>I</b>	Semester	<b>1</b>	Type of the final evaluation (E, V)	<b>E1</b>
Discipline Regime ( <b>M</b> -mandatory, <b>Op</b> -optional, <b>F</b> -facultative)			<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>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					<b>2</b>
2. Study according with the course support, manuals					<b>2</b>
3. Study of the minimal bibliography					<b>2</b>
4. Additional documentation in the library					<b>1</b>

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

Course name	SPECIALTY COMMUNICATION IN ENGLISH (I)
<b>Specific professional competencies</b>	<p>1. Knowledge and understanding (knowledge and appropriate use of discipline-specific notions):</p> <ul style="list-style-type: none"> <li>- As an important discipline in the curriculum, the aim is both to revise the linguistic and grammatical knowledge of the general English language, as well as to assimilate and fix the elements of specialized, medical language. The seminar aims, therefore, to review the grammatical and lexical structures commonly found in the medical language, through readings of texts, dialogues and applied exercises, interactive graduated by the level of difficulties, leading to good communication in the field.</li> </ul> <p>2. Explanation and interpretation (explanation and interpretation of ideas, projects, processes, as well as theoretical and practical contents of the discipline):</p> <ul style="list-style-type: none"> <li>- Developing the ability to understand the written text (Reading):</li> <li>- read, translated, answered questions about the text;</li> <li>- identification of key terms/ elements of cohesion/ coherence in the text;</li> <li>- Development of hearing-based understanding capacity :</li> <li>- identification of correct pronunciation and intonation; identification of the register (formal/ informal); recognition of fundamental communication strategies (introductory and conclusive formulas);</li> <li>- Development of oral expression capacity (Speaking): identification and correct use of basic linguistic structures corresponding to different acts of language; correct use of notional and instrumental units; correct use of rules of pronunciation and intonation.</li> <li>- Development of writing capacity: correct use of introductory elements; adaptation to the communication situation</li> </ul> <p>3. Instrumental-applicative (design, management and evaluation of specific practical activities):</p> <ul style="list-style-type: none"> <li>- use of methods, techniques and tools of investigation and application):</li> <li>- identification and use of communication strategies, methods and techniques in the medical process;</li> </ul>

	<p>4. Attitudinal (manifestation of a positive and responsible attitude towards the scientific field / centered on democratic values and relations / promotion of a system of moral and civic cultural values / optimal and creative exploitation of one's own potential in scientific activities / involvement in institutional development and in promoting scientific innovations / engaging in partnership relations with other people - institutions with similar responsibilities / participation in their own professional development):</p> <ul style="list-style-type: none"> <li>- the manifestation of a positive and responsible attitude towards the scientific field;</li> <li>- promoting a system of cultural, moral and civic values;</li> <li>- optimal and creative exploitation of one's own potential in scientific activities;</li> <li>- involvement in institutional development and promotion of scientific innovations;</li> <li>- engaging in partnership relationships with other people - institutions with similar responsibilities;</li> <li>- participation in their own professional development.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Realistically solving - with both theoretical and practical argumentation - common professional situations, with a view to solving them effectively and ethically.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Familiarization of students with the notions and concepts characteristic of medical terminology;</li> <li>- Training of theoretical and practical skills in the medical field.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- The work of the seminar is based on the reading of medical texts, followed by the conversation, problematization and appropriation of the notions of medicine through discovery.</li> <li>- All this is done by explanation, deductive methods, association, exemplification, presentation, role-playing games, repetitive practice, drills, schematic development, visualization techniques, frontal, individual activities.</li> </ul>

<b>Course Syllabus</b>	<b>Hours</b>
1. People in the hospital; things on the ward; confusing words; infectious diseases; prepositions; (common names and medical equivalent)	1
2. Human anatomy; plural nouns of foreign origin (Greek and Latin) used in medicine	1
3. Issues-classification and functions; Careers in health care	1
4. Physicians and medical specialties	1
5. Common diseases and ailments	1
6. Disease: its symptoms and treatments	1
7. Medical terminology: Suffixes and prefixes (losing to specialists, colour and size)	1
8. Human body systems: clinical study and physiology	1
9. Medical diagnosis and diagnostic procedures	1
10. Human anatomy: brief presentation of body systems	1
11. Human anatomy: brief presentation of body systems	1
12. The skeleton system: types of bones and articulations	1
13. People in the hospital; things on the ward; confusing words; infectious diseases; prepositions; (common names and medical equivalent)	1
14. Final revision	1

Laboratory Syllabus	Hours
1. People in the hospital; things on the ward; confusing words; infectious diseases; prepositions; (common names and medical equivalent)	1
2. Human anatomy: plural nouns of foreign origin (Greek and Latin) used in medicine	1
3. Issues-classification and functions; Careers in health care	1
4. Physicians and medical specialties	1
5. Common diseases and ailments	1
6. Disease: its symptoms and treatment	1
7. Medical terminology: Suffixes and prefixes (losing to specialists, colour and size)	1
8. Human body systems: clinical study and physiology	1
9. Medical diagnosis and diagnostic procedures	1
10. Human anatomy: brief presentation of body systems	1
11. Human anatomy: brief presentation of body systems	1
12. The skeleton system: types of bones and articulations	1
13. People in the hospital; things on the ward; confusing words; infectious diseases; prepositions; (common names and medical equivalent)	1
14. Final revision	1

Minimal References
1. Bauer, L. (1991). English Word-formation, Cambridge University Press: Cambridge;
2. Greenbaum, S., Randolph Quirk (1993). A Student's Grammar of the English Language, Longman Group Ltd: London;
3. Vince, Michael: Intermediate Language Practice, Macmillan
4. Heinemann English Language Teaching, [Oxford,1998];
5. Murphy, Raymond English Grammar in Use, Cambridge, University Press, [1994];
6. Badescu Alice, Gramatica Limbii Engleze, Ed. Științifică și Enciclopedică, București;
7. A.J. Thomson, A.V. Martinet: A Practical English Grammar, Third Edition, Oxford University Press;
8. Soars, J., Soars, L., 1999, Headway. Pre-Intermediate & Intermediate. Student's Book, Oxford: O.U.P.
9. Dictionar de medicina Ed. Larousse;
10. Manual de medicina Autori: A. S. Fauci E. Braunwald K. J. Isselbacher J. D. Wilson J. B. Martin D. L. Kasper S. L. Hauser D. L. Longo, Ed. Stiintelor Medicale.
11. Limba engleza pentru medici si asistente, Mireille Mandelbrojt-Sweeney, Ed. Polirom, 2006
12. Suport de curs predat

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
<ul style="list-style-type: none"> <li>- The future practical activity of the doctor is based not only on theoretical and practical knowledge, but also on knowledge of English, patience and special conscientiousness, which is acquired through studies started in the preclinical discipline of specialized communication in English</li> <li>- Our subject provides the doctor with the necessary basic knowledge related to the medical context.</li> </ul>

Disemination of the information	
Type of activities	Didactic Methods Employed
Course	- Interactive scheduled education; multimedia projection of course support

<b>Disemination of the information</b>	
Laboratory	- Practical demonstration of the clinical aspects of some diseases but also the specifics of important systems of the human body.

<b>Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works in order to be accepted to the final laboratory exam:</b>
- To know the basics of medical terminology in English
- Have no more than 20 % unmotivated and unrecovered absences from practical work.

<b>Consideration points for computing the final score:</b>	<b>Share of the final score (in %) (Total = 100%)</b>
- Responses to the final exam	50 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	20 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

<b>Description of the actual methods of examination:</b> - written exam / practical exam with individual tasks	
<b>Minimal requirements for grade 5</b>	<b>Requirements for grade 10</b>
<ul style="list-style-type: none"> <li>• promotion of the practical exam</li> <li>• promoting control work</li> <li>• recovery of absences from practical work</li> <li>• knowledge of the basics of the terminology taught</li> </ul>	<ul style="list-style-type: none"> <li>• in-depth knowledge of the notions taught</li> </ul>

**Date of completion**  
 \_\_\_\_\_  
 23.09.2017

**Discipline Coordinator,**  
 \_\_\_\_\_  
 Mirela Radu, Lecturer, Ph.D.

**Head of the Department,**  
 \_\_\_\_\_  
 Nemeş Roxana, Univ. Professor, M.D., Ph.D.

**Course Coordinator,**  
 \_\_\_\_\_  
 Mirela Radu, Lecturer, Ph.D.

**Laboratory Coordinator,**  
 \_\_\_\_\_  
 Mirela Radu, Lecturer, Ph.D.

**Department approval date**  
 \_\_\_\_\_  
 30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>PHYSICAL EDUCATION (I)</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Urichianu Adrian Ion, Assoc. Professor, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Course	-				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Urichianu Adrian Ion, Assoc. Professor, Ph.D.</b>				
Discipline Code	<b>M.1.1.14</b>	Formative category of the discipline		<b>CD</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>Op</b> -optional, <b>F</b> -facultative)			<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>
<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	3
6. Homeworks, translations, etc.	0
7. Preparing for different written exams	0
8. Preparing for oral examinations	0
9. Preparing for the final examination	2
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	2
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	PHYSICAL EDUCATION (I)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>- Modular design (Physical and sports education, Sport and motor performance, Kinetotherapy and special motor skills) and planning the basic contents of the field with interdisciplinary orientation</li> <li>- Organization of the integrated curriculum and training and learning environment with an interdisciplinary focus (Physical and Sports Education, Sport and Motor Performance, Kinetic Therapy and Special Motor skills)</li> <li>- Assessment of physical growth and development and quality of motor skills according to the specific requirements/objectives of physical and sports education, attitude towards independent exercise</li> <li>- Assessment of the level of training of practitioners of physical education and sport activities</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Organizing of physical and sports education activities for persons of different ages and levels of training under qualified assistance conditions, in compliance with the rules of ethics and professional ethics</li> <li>- Efficient and effective performance of work tasks for the organisation and conduct of sports activities</li> <li>- Operating with digital programs, documenting and communicating in an international language of movement</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Optimization of motor capacity according to the requirements of the professional profile</li> <li>- Knowledge of ways of preventing, correcting and recovering diseases and deficient attitudes encountered in the medical profession</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- The role of physical education in the daily program of the student, future doctor</li> <li>- Training of the ability to exercise independently in your spare time</li> <li>- The objectives listed can be achieved by using methods and means specific to physical education and sport.</li> <li>- Improving basic motor skills (strength, speed, stamina, skill)</li> </ul>

Course Syllabus	Hours
-	-

Laboratory Syllabus	Hours
1. Communication of control requirements and rules. Organization of the student collective by groups. Light runs alternated with mobility exercises.	2
2. Circuit of general physical training (fixed scales, medicine balls, gymnastics benches, acrobatics). Endurance run: B = 5 minutes; F = 4 minutes	2
3. General physical training circuit (pair exercises: free and with medicinal balls, acrobatics). Endurance run: B = 6 minutes; F = 5 minutes	2
4. General physical training circuit conducted outdoors (stadium stairs, ropes, motor games). Endurance run: B = 7 minutes; F = 6 minutes	2
5. Development of motor skills: resistance-speed: - exercises from the school of running, jumping, throwing; long-term running (amounting to 8 -10 min.); accelerated running (up to 50 m); long jump from the spot.	2
6. Exercises and exercise structures for learning technical-tactical elements and procedures in sports games. Table tennis, bilateral game. Exercises of selective influence of the musculoskeletal system and general physical development: exercises of elasticity and joint and muscle mobility.	2
7. Control rules and samples	2

Minimal References:
1. CÎRSTEA, GH., (2003), <i>Programming and planning in school physical and sports education</i> , Universe Publishing House, Bucharest;
2. CERGHIT, I., (1997), <i>Educational Methods</i> , Didactic and Pedagogical Publishing House, Bucharest
3. CERGHIT, I., (1997), <i>Educational Methods</i> , Didactic and Pedagogical Publishing House, Bucharest
4. 3.DRAGNEA, A., BOTA, A., (2010), <i>Theory of Motor Activities</i> , Didactic and Pedagogical PublishingHouse, Bucharest
5. 4. Dragu M., - <i>Motor Games</i> , Publishing House of the University Foundation "Lower Danube" Galati, 2002
6. Dragu M., - <i>Motion Games</i> , Galati Academic Publishing House, 2006.
7. Ionescu, A., Mazilu, V., (1971), <i>Physical Exercise in Health Service</i> , Stadion Publishing House, Bucharest
8. Merghes P, Teghiu A.; <i>Medical gymnastics for the prevention and correction of physical deficiencies</i> . Ed Mirton 2006
9. Urichianu, A., I., Ulareanu M., Georgescu, C., <i>Bodybuilding Exercises</i> , Ed. Pronuniversitaria, 2015
10. Urichianu, A., s.a. <i>Theory and Methodology of Physical Education and Sport</i> , Ed. Discobol, 2018

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
- Through its contents, the discipline has a pronounced pragmatic character, contributing to the training of specialists in the field of specialization through the following: harmonious development of the organism; optimization of health status; preventing the installation of global and segmental physical deficiencies, training and maintaining the correct attitudes of the body; stimulating students' interest in systematic and independent exercise individually and collectively on a daily or weekly basis; creating a habit of complying with sports hygiene and accident prevention rules; developing self-defense and self-exceeding capacity

Disemination of the information	
Type of activities	Didactic Methods Employed
- Course	-
- Laboratory	- Practical works in the field/gym alongside with sports materials

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works in order to be accepted to the final laboratory exam:
<ul style="list-style-type: none"> <li>- 25 abdomens; 30 rear push-ups; bilateral sports game of your choice (football, volleyball, table tennis)</li> <li>- 2 reports made and supported during practical hours, admitted with a minimum grade of 5 (corresponding to the grade)</li> </ul>

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	70 %
- Responses to the laboratory examination	10 %
- Periodic checks with written exams	10 %
- Continuous testing throught the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities: participation to sports competitions	10 %

Description of the actual methods of examination: - V	
Minimal requirements for grade 5	Requirements for grade 10
<ul style="list-style-type: none"> <li>• Grading is done by ADMITTED/REJECTED system</li> </ul>	<ul style="list-style-type: none"> <li>• Presence, implication, direct involvement in different sports competitions</li> <li>• Grading is done by ADMITTED/REJECTED system</li> </ul>

**Date of completion**

25.09.2017

**Discipline Coordinator,**

Urichianu Adrian Ion, Assoc. Professor, Ph.D.

**Head of the Department,**

Nemeş Roxana, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**

Urichianu Adrian Ion, Assoc. Professor, Ph.D.

**Laboratory Coordinator,**

Urichianu Adrian Ion, Assoc. Professor, Ph.D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>ANATOMY AND EMBRYOLOGY (II)</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Tudorache Ioan Sorin, Lecturer, Ph. D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Tudorache Ioan Sorin, Lecturer, Ph. D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Hârşovescu Tudor, Lecturer, Ph. D. Dincă Gabi-Valeriu, Lecturer, M.D., Ph. D., MD Tudorache Ioan Sorin, Lecturer, Ph. D. Köver Zoltan Janos, M.D., Ph. D. Student Coroescu Mirela, Ph. D.</b>				
Discipline Code	<b>M.1.2.7</b>	Formative category of the discipline		<b>FD</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>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>7</b>

No. of Hours per week	<b>8</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>6</b>
Total of hours in the curriculum	<b>112</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>84</b>
		Total hours per semester	<b>175</b>	Total hours of individual study	<b>63</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					<b>7</b>
2. Study according with the course support, manuals					<b>14</b>
3. Study of the minimal bibliography					<b>7</b>
4. Additional documentation in the library					<b>7</b>

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

Course name	ANATOMY OF THE HEAD AND NECK. VISCERA OF THE THORAX. SPECIAL EMBRIOLOGY
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>- Recognition and identification: <ul style="list-style-type: none"> <li>• topographical regions of the head, neck and chest cavity.</li> <li>• by palpation, bone markers.</li> <li>• palpable arteries, pulse, ligation marks.</li> <li>• the approach of the superficial venous system.</li> <li>• groups of palpable superficial lymph nodes.</li> <li>• viscera and thoracic vascular formations by radiological and imaging methods.</li> </ul> </li> <li>- Knowledge of the trajectory of the main cranial nerves in order to achieve a loco-regional anesthesia.</li> <li>- Articular biomechanics.</li> <li>- Exploration by classical clinical methods: palpation, percussion, auscultation of thoracic viscera.</li> <li>- Preliminary conditions for the acquisition of specific professional competences: the fundamental notions of anatomy, physiology and histology related to the Manual of Biology for the 11th grade as well as the notions acquired in the discipline Anatomy and Embryology (I)</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Accommodating the student with medical terminology.</li> <li>- Accommodation to the specifics of medical activity through oral presentations both during the semester and in the exam.</li> <li>- Stimulating teamwork through student participation in dissection, active participation in the Student Circle of Anatomy, elaboration of scientific papers. "Anatomy is the science of the living form"(Francisc Rainer) – the implementation of notions of functional anatomy and the establishment of anatomical-clinical correlations.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Presentation of notions of special embryology and descriptive anatomy of the head and neck; viscera of the chest.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Linking notions of anatomy acquired through courses, practical works, consultation of bibliography and iconography with dissection study of corpses and modern presentations.</li> <li>- Presentation of notions of live anatomy, palpations, percussion, auscultation, discoveries, clinical anatomy and modern imaging.</li> </ul>

<b>Course Syllabus</b>	<b>Hours</b>
1. Cranium. Neurocranium, viscerocranium. Architecture, craniometry.	2
2. Development of the skull	2
3. The oral cavity. Language. Teeth.	2
4. Temporomandibular joint	2
5. Arcs, gill bags. Derived.	2
6. Primitive mouth, meso-branchial field. Derived. Malformations.	2
7. Cranial nerves	2
8. Nasal cavity. The pharynx.	2
9. The larynx. Trachea.	2
10. Topographic regions of the head and neck.	2
11. Mediastinum. Development of the respiratory system.	2
12. Development of the heart and vessels. Malformations.	2
13. Vascularization and innervation of the heart. Functional anatomy of the heart and large vessels	2
14. Clinical Anatomy and Imaging	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
1. Cranium, overview. The bones of the neurocranium and viscerocranium. Calvaria.	2
2. Exobase, endobase.	2
3. Norma lateralis. Temporal, infratemporal, pterigopalatin.	2
4. Norma frontalis. Orbit, nasal passages.	2
5. Colloquium 1	2
6. Dissection of the neck. Topographic regions. The superficial veins of the neck. Infrahyoid muscles. Cervical fascists. Cervical plexus. The frenic nerve in the cervical region.	2
7. Dissection of the vasculonervos glove of the neck. The carotid trigon. Thyroid glands, parathyroids.	2
8. Superhyoid muscles. Submandibular trigon. Lingual artery, hypogloss nerve.	2
9. Cervical sympathetic. Prevertebral muscles. The lymphatics of the head and neck.	2
10. Sternocleidomastidian muscles, scalens. Accessor nerve. The supralavicolal part of the brachial plexus.	2
11. Dissection of the artery and subclavian vein.	2
12. Glosopharyngeal nerves, vague. The larynx, cervical trachea, cervical esophagus.	2
13. Head dissection. The muscles of the little one. Facial nerve. The parotid gland. Facial vessels, superficial temporal vessels, auriculo-temporal nerve.	2
14. Dissection of chewing muscles. Sectioning of the mandible. Jaw artery, branches. Trigeminal nerve.	2
15. Ophthalmic nerve The maxillary nerve. Mandibular nerve. The ciliary, pterigopalatin, otic, submandibular ganglia.	2
16. Oral cavity, tongue, pharynx. Live anatomy of the head and neck.	2
17. Colloquium 2	2
18. Torah, limits, live anatomy, radiological anatomy. Opening the thoracic cavity. Pleura, pleural recesses, projections.	2
19. The mediastinum.	2
20. Thoracic trachea. Chest esophagus. Thymus. Vague nerves in the thorax. Frenic nerves in the thorax. The sympathetic toracal. The big vessels in the mediastinum.	2
21. Respiratory apparatus. Pulmons.	2

Laboratory Syllabus	Hours
22. Pulmonary bronchi. Pulmonary pedicle.	2
23. Cord, ratios, structure. Big ships. External configuration.	2
24. Dissection of the heart. Internal configuration.	2
25. Vascularization and innervation of the heart. Nodal tissue. Pericardial sinuses. Projection and foci of auscultation of the heart orifices.	2
26. Colloquium 3	2
27. Embryology 1	2
28. Embryology 2	2

Minimal References:
1. Official course
2. Human anatomy – Head and neck – under the editorship of Prof. V. Ranga – IMF Bucharest lithography, Cerma Publishing House
3. Human anatomy – Viscera of the chest – under the editorship of Prof. V. Ranga – litography IMF Bucharest, Cerma Publishing House
4. Functional anatomy of the head and neck - under the editorship of Prof. Caesar Th. Niculescu, Infomedica Bucharest Publishing House 1999
5. Funcțională anatomie a toracelui - under the editorship of Prof. Caesar Th. Niculescu, Technoplast Company Bucharest Publishing House 1997
6. Human Anatomy Vol.I Locomotor Apparatus - Victor Papilian 2005
7. Human Anatomy Vol.II Splanhnologia - Victor Papilian 2005
8. Embryology – Armand Andronescu, Didactica Publishing House 1992
9. Gray's Anatomy for Students – A. Wayne Vogl, Adam W. Mr. Mitchell, Richard L. Drake, Othervier, 2016
10. Clinical anatomy – fundamentals and applications – Keith L. Moore, Arthur F. Dalley, Anne M.R. Agur, Calisto Publishing House 2012
11. Langman's medical embryology - 2016

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
<ul style="list-style-type: none"> <li>- In carrying out the analytical programmes for both the course and for practical work, we took into account the ways of studying anatomy in the higher education institutions of the country and și in the European Union. In order to harmonise the preclinical discipline sheets, we organized working sessions at the Level of the Department, identifying the optimal ways of linking the educational process. Following consultations with hospital managers and private administrators of firms providing clinical and paraclinical medical services, we have given greater importance to the practical, clinical, radiological and imaging anatomy for easier integration of graduates into the labour market.</li> </ul>

Disemination of the information	
Type of activities	Didactic Methods Employed
Course	<ul style="list-style-type: none"> <li>- Laptop, video projector. Modern Power Point presentation of accompanied by iconography. Interactive course. Anatomical-clinical correlations. Answers to students' questions.</li> </ul>
Laboratory	<ul style="list-style-type: none"> <li>- Laptop, video projector. Modern presentation using boards, Power Point, virtual dissection software.</li> </ul>

<b>Disemination of the information</b>	
	<ul style="list-style-type: none"> <li>- Classical study by dissection, the use of specific teaching materials: skeleton, bone collection, anatomical preparations, sections.</li> <li>- Interactive practical work.</li> <li>- Getting radiological anatomy and imaging, clinical anatomy.</li> <li>- Practical embryology work using both histological preparations and digital presentation.</li> </ul>

**Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during:**

**Minimum standard of performance - minimum scale of activities to be performed by the student in practical work**

- The presence of the student at a minimum of 70% practical work and the restoration of all absences (including absences from evaluations during the semester)
- Carrying out of references for the understanding of the basic stakes of the practical work in question.
- Identification of the basic anatomical formations on the teaching materials used (skeleton, bone collection, corpses, preparations of anatomic, iconography, radiological iconography and imaging)

**Minimum scale of activities to be performed by the student in the practical exam in order to be admitted to the exam (final verification): obtaining the average 5 in the practical examinations of anatomy and embryology:**

- The practical examination of anatomy consists in identifying at least 14 of 27 anatomical formations on teaching materials (skeleton, collection bones, corpses, anatomical preparations, iconography, results of radiological and imaging examinations).
- The practical examination of embryology consists in the recognition of the elements on the subject extracted
  - an image of embryological development presented during the practical work (the portfolio of images for each semester is made available to students at the beginning of each semester), plus:
    - for grade 5 - presentation of the basics on the subject;
    - for grade 10 - detailed presentation of information on that particular study and related aspects of human development.

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

- For the acquisition by the student of the minimum level of competences specific to the discipline we consider it necessary to participate interactively in practical work, the promotion of colloquiums, practical examinations of anatomy and embryology and the solving of subjects in the final examination.

<b>Consideration points for computing the final score:</b>	<b>Share of the final score (in %) (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	10 %
- Periodic checks with written exams	20 %
- Continuous testing throught the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-

- Other activities:	-
<b>Description of the actual methods of examination: E</b>	
<ul style="list-style-type: none"> <li>- Exam consists of the oral presentation of the 3 subjects extracted by the student from the 3 categories (1 category course subjects and 2 categories subjects practical papers).</li> <li>- The promotion of colloquium 2 and 3, respectively, with an average equal to or higher than the grade 7, has a partial exam value, allowing the student to skip the category of subjects of corresponding practical work.</li> <li>- All subjects are brought to the attention of students at the beginning of the semester.</li> <li>- The exam is held in groups and is completely transparent.</li> <li>- At exam participates at least 3 students, the head of the discipline, the head of the practical works and the university assistant who guided the group in the respective semester</li> </ul>	
<b>Minimal requirements for grade 5</b>	<b>Requirements for grade 10</b>
<ul style="list-style-type: none"> <li>• The presence of the student at least 70% practical work with the restoration of all absences.</li> <li>• Supporting at least or 3 colloquiums and obtaining at least a grade of 5 to 2 out of 3 colloquials (the colloquials are also restored).</li> <li>• Making the reports related to the practical work and the knowledge of the basics of the practical work.</li> <li>• Obtaining the 5th average in the practical examinations of anatomy and embryology.</li> <li>• Minimal responses (grade 5) to subjects extracted from the 3 categories of subjects.</li> </ul>	<ul style="list-style-type: none"> <li>• Average over 9 in the 3 colloquiums during the semester.</li> <li>• Average over 9 in the practical examinations of anatomy and embryology.</li> <li>• Average over 9 on the 3 exam subjects extracted.</li> </ul>

**Date of completion**

24.09.2017

**Discipline Coordinator,**

Tudorache Ioan Sorin, Lecturer, Ph. D.

**Head of Department,**

Nemes Roxana, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**

Tudorache Ioan Sorin, Lecturer, Ph. D.

**Laboratory Coordinators,**

Hârşovescu Tudor, Lecturer, Ph. D.  
Dincă Gabi-Valeriu, Lecturer, Ph. D., MD  
Tudorache Ioan Sorin, Lecturer, Ph. D.  
Köver Zoltan Janos, Ph. D. Student, M.D.  
Coroescu Mirela, Ph. D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>BIOCHEMISTRY (II)</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Moldoveanu Elena, Univ. Professor, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Moldoveanu Elena, Univ. Professor, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Moldoveanu Elena, Univ. Professor, Ph.D. Rusu Elena, Assoc. Professor, Ph.D. Daciana Marta, Lecturer, Ph.D.</b>				
Discipline Code	<b>M.1.2.8</b>	Formative category of the discipline		<b>FD</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>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>6</b>

No. of Hours per week	<b>4</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>2</b>
Total of hours in the curriculum	<b>56</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>28</b>
		Total hours per semester	<b>150</b>	Total hours of individual study	<b>94</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					14
2. Study according with the course support, manuals					28
3. Study of the minimal bibliography					7
4. Additional documentation in the library					7

5. Specific activity for the seminary or laboratory	3
6. Homeworks, translations, etc.	2
7. Preparing for different written exams	5
8. Preparing for oral examinations	0
9. Preparing for the final examination	15
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	10
13. Tutoring	0
14. Examinations	3
15. Other activities:	0

Course name	BIOCHEMISTRY (II)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>- Proper use of concepts in the field of biochemistry and molecular biology.</li> <li>- Understanding how to regulate biochemical reactions in the body and the pathological consequences of their disorder.</li> <li>- Interdisciplinary approach to the concepts in the field of biochemistry.</li> <li>- Independent information and interpretation of the knowledge obtained.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Application of strategies of perseverance, rigour, efficiency and responsibility in the workplace, punctuality and accountability for the results of the activity, creativity, common sense, analytical and critical thinking, problem solving, etc., based on the principles, norms and values of the code of professional ethics.</li> <li>- The completion of interrelationship techniques within a team; amplification and cising of the empathic capacities of interpersonal communication and of taking on specific tasks in carrying outgroup activities with a view to dealing/solving/grade grup conflicts, as well as optimal time management.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Presentation of the importance of biochemical processes in explaining the existence of phenomena in the living world in normal and pathological situations.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Introducing chemical and biochemical language and explaining its importance, origin and meaning of the basic concepts.</li> <li>- Presenting its importance to biochemical processes in explaining phenomena in the living world.</li> <li>- Introduce the concepts necessary to understand how information is transferred to the living world.</li> <li>- Knowledge and understanding of metabolic processes carried out in organs, tissues, cells.</li> <li>- Presentation of concepts that form a basis for understanding other disciplines (physiology, genetics, embryology, cell biology, physiopathology).</li> <li>- Ability to use modern biochemical analysis techniques.</li> <li>- Use of enzyme determinations for diagnostic specification.</li> </ul>

	- Investigation of metabolisms: carbohydrate, lipid, protein, mineral, hormonal and correlation of biochemical parameters with appropriate pathological situations.
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Course Syllabus	Hours
<b>MAIN CHAPTERS</b>	
1. Energy metabolism.	4
2. Carbohydrate metabolism.	10
3. Lipid metabolism.	8
4. Metabolism of amino acids.	2
5. Protein metabolism.	2
6. Metabolism of the nucleotides.	2
<b>SUBCHAPTERS:</b>	
1. Chemical thermodynamics. Reactions of oxidoreduction. Coupling endergonic and exergonic re-operations.	2
2. ATP synthesis. Electron transporter chain and oxidative phosphorylation. Oxygen free radicals. Phagocytosis.	2
3. Digestion and absorption of carbohydrates.	2
4. Glycolysis: steps, adjustment, energy balance	2
5. Decarboxylation of pyruvic acid. Krebs cycle. The path of the pentozophosphates.	2
6. The path of glucuronic acid. Gluconeogenesis	2
7. Metabolism of fructose and galactose. Metabolism of glycogen	2
8. Digestion and absorption of lipids. Degradation of fatty acids by $\beta$ -oxidation	2
9. Biosynthesis of fatty acids. Triglyceride metabolism.	2
10. Cholesterol metabolism. Metabolism of ketone bodies. Adjustment of cetogenesis.	2
11. Metabolism of eicosanoid plasma lipoproteins, prostaglandins, cotrienelion, thromboxans: biosynthesis, role	2
12. Digestion and absorption of proteins. Intracellular degradation of proteins.	2
13. The ureogenetic cycle. Biosynthesis and degradation of hem. Hemoxigenase isoenzymes.	2
14. Biosynthesis of pyrimidine nucleotides. Biosynthesis of purinic nucleotides. Catabolism of the nucleotides.	2

Laboratory Syllabus	Hours
1. Compounds and minerals. Dosage of calcium, magnesium, fosfor, chlorine, copper and iron inserum.	2
2. Carbohydrates. Identification reactions of monosaccharides, disaccharides and polysaccharides. Dosage of glucose inserum..	2
3. Dosage of total serum protein. Electrophoresis of serum proteins. Dysproteinemia tests. Dosing the fibrinogen plasma..	2
4. Plasma enzymes. Dose serum transaminases (AST and ALT).	2
5. Dosage of serum phosphatases (alkaline and acidic).	2
6. Dosage g -glutamyl transpeptidase, creatine phosphokinase, lactate dehydrogenase .	2
7. Lipid. Dosage of total lipids inserum.	2
8. Dosage of cholesterol and triacylglycerols.	2
9. Seminar carbohydrate and lipid metabolism.	2
10. Dosing bi-lirubin and bilirubin inserum	2
11. Dosing uric acid and creatinine inserum	2

Laboratory Syllabus	Hours
12. Physico-chemical examination of urine. Components urinare with pathological significance.	2
13. Retaking the missed practical works hours	2
14. Colluvium.	2

Minimal References:
1. Moldoveanu E., 2011, Medical Biochemistry Course – Fifth Edition completed and revised, Ed. "Titu Maiorescu" University, Bucharest, 221 pg. ISBN: 978-606-8002-53-6
2. Moldoveanu E., Marta D., 2015, Medical Biochemistry- Practical Work, Ed. "Titu Maiorescu" University/ Ed. Hamangiu, Bucharest, 82 pg., ISBN Titu Maiorescu: 978-606-767-009-7/ ISBN Hamangiu: 978-606-27-0506-0
3. Harper's Illustrated Biochemistry 31st Edition, Ed. McGraw-Hill Professional Publishing, 2018
4. Marks' Basic Medical Biochemistry 5th Edition, Smith C, Marks AD, Lieberman M, Lipincott Williams&Wilkins, 20 17
5. Biochemistry, L. Stryer, W.H. Freeman and company, 8thEdition, 2015
6. Official course

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
<ul style="list-style-type: none"> <li>- Determination of the composition, structure and physico-chemistry properties of some chemical compounds (carbohydrates, lipids, proteins, amino acids); the use of the apparatus and technique necessary for the analysis of biological samples (sampling, processing and dosing of organic compounds) according to the quality criteria of laboratory analyses; performing dosages of the most important blood parameters (calcemia, blood sugar, sideremia, etc.) as well as interpreting the results allow to acquire skills necessary to carry out practical activity in the clinical laboratory.</li> </ul>

Disemination of the information	
Type of activities	Didactic Methods Employed
Course	- Interactive exposure of the material in accordance with the analytical program, using a projector, an e-board and computer.
Laboratory	- Practical applications

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works in order to be accepted to the final laboratory exam:
- for admission to practical examinations the student must carry out all practical work hours.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	50 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	20 %
- Continuous testing throught the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

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

Descriptive written work and grid test (5 theoretical topics and 6 grid tests).

<b>Minimal requirements for grade 5</b>	<b>Requirements for grade 10</b>
<ul style="list-style-type: none"><li>• exposure of 3 out of 5 subjects and 2 grid tests</li></ul>	<ul style="list-style-type: none"><li>• exposure of 5 out of 5 subjects and 6 grid tests</li></ul>

**Date of completion**

25.09.2017

**Discipline Coordinator,**

Moldoveanu Elena, Univ. Professor, Ph.D.

**Head of the Department,**

Nemeş Roxana, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**

Moldoveanu Elena, Univ. Professor, Ph.D.

**Laboratory Coordinator,**

Moldoveanu Elena, Univ. Professor, Ph.D.

Rusu Elena, Assoc. Professor, Ph.D.

Daciana Marta, Lecturer, Ph.D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>PHYSIOLOGY</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Oroş Mihaela, Ph. D., M.D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Oroş Mihaela, Ph. D., M.D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Oroş Mihaela, Ph. D., M.D. Cojocaru Manole, Assoc. Professor, Ph.D.</b>				
Discipline Code	<b>M.1.2.9</b>	Formative category of the discipline		<b>FD</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>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>6</b>

No. of Hours per week	<b>5</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>3</b>
Total of hours in the curriculum	<b>70</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>42</b>
		Total hours per semester	<b>150</b>	Total hours of individual study	<b>80</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					15
2. Study according with the course support, manuals					13
3. Study of the minimal bibliography					5
4. Additional documentation in the library					5

5. Specific activity for the seminary or laboratory	7
6. Homeworks, translations, etc.	5
7. Preparing for different witten exams	3
8. Preparing for oral examinations	5
9. Preparing for the final examination	8
10. Consultations	2
11. In the field documentation	-
12. Documentation from web sources, portals, wiki websites	2
13. Tutoring	-
14. Examinations	2
15. Other activities:	8

Course name	PHYSIOLOGY
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>- Starting from the recapitulation of the general notions of anatomy necessary to understand how the function of an organ/apparatus/system is carried out, a theme is addressed which, by specific, specialized terms and notions is useful both for the study of subjects from other academic years and for later medical practice.</li> <li>- In presenting how an organ works, it is constantly intended to show that the normal functioning of the organism is that of "a unitary whole", in which the mode of activity of one organ influences the performance of the others;</li> <li>- facilitates the understanding of the scientific methodology for measuring biological functions through laboratory analyses and paraclinical investigations;</li> <li>- In relation to normal biological values allows the assessment/assessment of the degree of general disorder of the body's functions;;</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Discipline "lays" the foundation of the subsequent understanding of: the etiology and general pathogenicity of diseases, their evolution, the way of adaptation and reactivity of the organism to risk factors, favoring and determining various diseases.</li> <li>- To achieve the goal, the discipline adopted the latest learning techniques: the interactive nature of the classes and practical works, modern methods of learning, such as: grid tests, learning algorithms, diagrams and projected figures, etc.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Understanding and appropriating by the student the optimal functioning of an organ, conditionality that generates normo-functionality of the whole organism. After the promotion of the discipline, the student has the minimum knowledge necessary to appropriate the general etiopathic mechanisms taught by the discipline Physiopathology, but also those specific to each disease, the object of study in clinical disciplines.</li> <li>- At the end of the period of study of the discipline the student knows the methodology by which one can evaluate the functionality of an organ and the whole organism; in concrete fact, it knows the main laboratory/paraclinical investigations and</li> </ul>

	<p>their normal values, useful data in assessing the state of health or disease, as well as for recovery following an applied therapeutic guide;</p>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Training students to become competitive and through knowledge of physiology, as the basic foundation of knowledge in the medical field;</li> <li>- The curriculum of the discipline to provide a topical, dynamic training of permanency. In this respect, 2 sessions of 2 hours/semester, of course, have the theme agreed with the students; as a rule, they are the penultimate and last of the semester in progress;</li> <li>- Discipline will continue to cooperate with other departments on the topics of the courses, in order to eliminate the parallelism of the topic and to develop at the level of the Department enthusiasm to "teamwork";</li> <li>- Discipline to be recognized for the quality and originality of training and teaching programs, to motivate and attract the student.</li> <li>- Discipline to allow the future doctor, on the basis of accumulated knowledge, to react in a timely manner, in case of illness, by:</li> <li>- Just assessment of the state of suffering of the organism and the optimal decision to achieve a triage of the severity of the sick, prioritizing emergencies; The act is of major importance in providing promptly, by the doctor, the medical service that is required to be performed and can only be assessed at the right importance by knowing how the body operates in full health.</li> </ul>

<b>Course Syllabus</b>	<b>Hours</b>
<p><b>Course No. 1. Introduction to Physiology</b></p> <ul style="list-style-type: none"> <li>- The object of physiology. The body, as a functional unit. Physiology as interdisciplinary, intersectoral science; Experiment and clinical observation as a means of research in medicine; Their role in medical practice. Overview of other modern methods of functional research and exploration of the human body. Utility and way of scientific documentation, including on the internet. Romanian physiology in the general context of current knowledge: contributions, perspectives. Modern methods of functional research and exploration.</li> </ul>	2
<p><b>Course No. 2. Homeostasis of the main hydric compartments</b></p> <ul style="list-style-type: none"> <li>- Water compartments and water sectors: extracellular, intracellular, transcellular water;</li> <li>- Definition of pressures: hydrostatic, osmotic, colloid-osmotic; principles of determination/normal values; The concept of homeostasis of the internal environment. Water and electrolyte balance (colloid-osmotic): volemia , isoionia, isotonia; Hydro-electrolytic dynamics between hydric compartments; Body's water balance: the balance between intake/elimination. General notions on the limits of homeostasis: hypo-, iso-, hypertonic dehydrations; hypo-, iso-, hypertonic hyperhydration.</li> </ul>	2
<p><b>Course No. 3. Cell membrane physiology.</b></p> <ul style="list-style-type: none"> <li>- Structure of cell membranes; Transport by cell membrane: passive transport; facilitated diffusion; active transport; secondary active transport; Potential transmembrane-cellular electrical.</li> </ul>	2
<b>Course No. 4. Receptor physiology</b>	2

Course Syllabus	Hours
<ul style="list-style-type: none"> <li>- Structural, functional and energy aspects of membrane receptors; receptors that regulate adhesion between cells; receptors that transmit signals; Their classification; The ligand receiver link; the system of secondary mediators; Intracellular receptors. General notions about cytokines and chemokines.</li> </ul>	
<p>Course No. 5. <b>Blood: I.</b></p> <ul style="list-style-type: none"> <li>- Blood composition: plasma and figurative elements; Hematocrit. Physico-chemical constants of blood (color, density, viscosity, osmotic pressure, colloid-osmotic pressure) Blood functions-enumeration briefly, comments.</li> <li>- Blood swabs. Acid-base balance: parameters, adjustment, peculiarities; General notions of simple and complex acid-base disorders; definition of acidosis and alkalose.</li> </ul>	2
<p>Course No. 6. <b>Blood: II.</b></p> <ul style="list-style-type: none"> <li>- General notions of hematopoiesis: organs and its stages (embryo and hematopoiesis of the adult); Erythropoiesis; Normal erythrocyte: erythrocyte structure; Hemoglobin: structure, types, ontogenic evolution of human hemoglobins; Respiratory gas transmission function: O<sub>2</sub> and CO<sub>2</sub>. Summary notions of the existence of abnormal haemoglobins and some forms of transport of some abnormal gases.</li> </ul>	2
<p>Course No. 7. <b>Blood: III</b></p> <ul style="list-style-type: none"> <li>- Myelopoiesis (granulocyto-monopoiesis; lymphocytopoiesis and plasmocyte formation); component of hematopoiesis. Leukocytes. General notions on the role of different types of leukocytes. Through the body's cytol levels of defense. Phagocytosis, as a non-specific defence mechanism; Necrophagocytosis; Specific defense function: general notions of: self and non-self (antigens and antibodies); histocompatibility systems; definition of immunity; types of immunity.</li> <li>- Antigenity at the level of hematia; blood groups.</li> </ul>	2
<p>Course No. 8. <b>Blood: IV</b></p> <ul style="list-style-type: none"> <li>- Thrombocytes; thrombocytopoiesis, a component of hematopoiesis. The function of maintaining fluid-coagulant balance. Haemostasis. The pro-coagulant system.</li> </ul>	2
<p>Course No. 9. <b>Blood: V</b></p> <ul style="list-style-type: none"> <li>- Hemostasis: fibrinolytic system; fibrinolysis</li> <li>- Other blood functions.</li> </ul>	2
<p>Course No. 10. <b>General notions of functional anatomy of the nervous system: organization of the nervous system.</b></p> <ul style="list-style-type: none"> <li>- Neuron physiology. Synapse: structure, classification, fundamental functions. Chemical neuromediators.</li> </ul>	2
<p>Course No. 11. <b>Integrative neurophysiology: reflex act and arc (somatic and vegetative).</b></p> <ul style="list-style-type: none"> <li>- Reflex activity of the spinal cord: medullary structures with motor functions and those with vegetative functions.</li> <li>- Summary notions of functional anatomy of various CNS structures: brain stem, diencephalus, cerebellum, cortical encephal-regions.</li> </ul>	2
<p>Course No. 12. <b>Physiology of the endocrine glands. I.</b></p> <ul style="list-style-type: none"> <li>- Introduction to endocrine physiology. Hormones: classification; general mechanisms of synthesis, secretion, activation, inactivation, excretion; interaction with membrane and intracellular receptors; general adjustment mechanisms; the current definition of "classic" and revision; neuro-endocrine transducers; opioids; biorhythms. Romanian School of Endocrinology. The main components of the endocrine system: the hypothalamic-hypophysic-peripheral "coordinated" axis, the diffuse endocrine system of the APUD digestive tract and the endocrine system of the adipose tissue in the abdomen. Feedback adjustment mechanisms.</li> </ul>	2

<b>Course Syllabus</b>	<b>Hours</b>
<p><b>Course No. 13. Physiology of the endocrine glands. II.</b></p> <ul style="list-style-type: none"> <li>- Hypophysis gland and hypothalamic-hypophysis relations: Anterior lobe of hypophysis: port (Gr. Popa and U. Fielding); hypothalamic neuro-hormones (releasing/inhibiting). /inhibiting).</li> <li>- Hormones of anterior hypophysis: synthesis, secretion, circulating forms; interaction with receptors; physiological role; Adjustment. Posterior hypophysis and hypothalamic-hypophysis tract;</li> <li>- Hormones of neurohypophysis:ADH, oxytocin: synthesis, secretion, circulating forms; interaction with receptors; physiological role; Adjustment.</li> <li>- Thyroid gland physiology: thyroid hormones; synthesis, secretion, circulating forms; interaction with receptors; physiological role; Adjustment. Principles of investigation. Hypo- and hyperthyroidism.</li> </ul>	2
<p><b>Course No. 14. Physiology of the endocrine glands. III.</b></p> <ul style="list-style-type: none"> <li>- The adrenal gland.</li> <li>- Meduloadrenal (MSR):Catecholamines: synthesis, secretion, circulating forms; interaction with receptors; physiological role; Adjustment. Other MSR hormones.</li> <li>- MSR integration into the sypato-adrenergic system; "alarm" reaction.</li> <li>- Adrenal corticosteroid (CSR). Morpho-functional organization. General biosynthesis of hormones. Glucocorticoids: synthesis, secretion, circulating forms; interaction with receptors; physiological role; adjustment; stress recitation;advantages and precautions in</li> <li>- therapeutic use. Mineralocorticoids; synthesis, secretion, circulating forms;</li> <li>- Interaction with receptors; physiological role; Adjustment. The renin-angiotensin-aldosterone system. CSR sexosteroids.</li> </ul>	2

<b>Laboratory Syllabus</b>	<b>Hours</b>
<p><b>Practical work No 1:</b></p> <ul style="list-style-type: none"> <li>- Part I: Membranary systems (Part I): potential electrical transmembrane: potential membrane rest and action. The peculiarity of the transmembrana-nar electrical potential phases. Repolarization and refractory periods of the cell . Definition of the notion of liminal stimulus.</li> <li>- Part II: Specification of the notions of: laboratory examination and paraclinical examination. Types of laboratory investigations (grouping them by medical specialties; their specificity). Listing mandatory investigations to be carried out to any patient. Explanation of how to prescribe investigations other than laboratory investigations.Informing the future doctor about the competence/module in prescribing laboratory investigations whose cost is paid by the Social Health Insurance House. (reference to the annual framework contract and the need to carry out "targeted" them, depending on the suspected diagnosis).</li> <li>- Part III: Exploration of blood tissue(I): Summary of the notions of blood tissue physiology (hemato-trainer and circulating compartment); Functional specifics of the hematology laboratory. General notions regarding the usefulness of the usual tests to investigate the circulating compartment (enumeration and normal values); The main methods, principles of determination and normal values for the following haematological tests:VSH; Hematocrit; Dosage of circulating haemoglobin. Spectroscopy of hemoglobin and its derivatives. Teichman crystals.</li> </ul>	2
<b>Practical work No. 2:</b>	2

Laboratory Syllabus	Hours
<ul style="list-style-type: none"> <li>- Part I: Membrary systems (Part II): general data on the structure of a membrane. Types of transport through the cell membrane: diffusion, facilitated diffusion, co-transport, primary and secondary active transport, osmosis. Factors that may influence the permeability of cell membranes.</li> <li>- PartII: Exploration of the circulating red series-(II): Hemogram (count of hematoids), as a laboratory test: the main methods and principles of determination, the limits of variation of normal values. Definition of notions of: anemia and polyglobuly: definition of parameters, summary explanations of possible etiopathic, starting from the notions of course related to the synthesis of hemoglobin; The appearance of normal hematia on the panoptic colored blade). Calculation of erythrocyte indices: definition, formulas of determination, normal values. Mininal scale: knowledge of the calculation formula and normal values for two of the erythrocytes: globular value/color index and average erythrocyte volume. The usefulness of their determination in medical practice (to diagnose the type and possible cause of an anemia. The definition of anaemia will be specified). General/orientative notions about the terms: hypochromia, macrocytosis microcytosis, megalocytosis, poikilocytosis.</li> <li>- Part III : Explanation of other parameters recorded in the result bulletin of the haemoleukogram. Working on analysis bulletins, insisting on how to interpret the results.</li> </ul>	
<p>Practical work No. 3</p> <ul style="list-style-type: none"> <li>- Part I: General notions about macroergic compounds in the body: ATP and GTP . The interconnections of the two compounds. The role of AMPc in cellular processes; Sources of synthesis of ATP. Summary of the notions of biochemistry concerning: glycolysis/anaerobic path EMP and Krebs cycle. Energoforming peculiarities at the myocardial level.</li> <li>- PartII: Exploring the circulating red series- (III): A.Determination of blood groups: ABO and Rh system; principles , clinical utility. The principles of transfusion. B. Indirect exploration of the erythro-trainer compartment: Determination of the number of circulating reticulocytes, indirect test on the regenerative capacity of the red marrow and assesment of the evolution of an anemia (under treatment); The significance of quantitative deviations in the number of circulating reticulocytes; C. Globular resistance: tests of osmoticfragility of erythrocytes. Hemolysis in the hypoton and hyperton environment. Coombs test directly and indirectly;</li> <li>- Part III: Work on analysis bulletins; insist on the direct compatibility sample as an additional test to avoid a possible error in identifying the erythrocyte group.</li> </ul>	2
<p>Practical work No. 4:</p> <ul style="list-style-type: none"> <li>- Part I: Plasma cchemical position; Physical properties of plasma (Part I).</li> <li>- PartII: Exploring the white series: Recap of the main notions of the course on the types of leukocytes. Automatic count of leukocytes and using cells/cameras under the optical microscope: the limits and indications of each of the methods. Leukogram: normal values, Utility of the MGG colored blade for the description of morphological elements identifying various types of normal circulating leukocytes. The notions of relative and absolute value for the quantitative interpretation of each class of leukocytes. Definition of notions of leukocytosis and leukopenia. The extra and minus deviations of each class of leukocytes: naming, defining and exemplifying possible causes (generally).</li> <li>- Part III: Work on analysis bulletins, to give the student the aptitude of the interpretation, possibly calculation of the previous notions</li> </ul>	2
<p>Practical work No. 5:</p>	2

Laboratory Syllabus	Hours
<ul style="list-style-type: none"> <li>- Part I: Physical properties of plasma (Part II).</li> <li>- Part II: Exploring the megacario-thrombocyte series: Summary notions about thrombocytopoiesis, morphological appearance and normal number of circulating platelets; their role in clotting. Specify the notions of thrombocytopenia and thrombocytemia. General notions about the clinical consequences of these quantitative disturbances.</li> <li>- PartIII: Recap of general notions about plasma. Investigation of some of the properties of blood-part I: Definition of notions and pmod of determining blood density, pH and alkaline reserve. Utility for medical practice of such determinations.</li> </ul>	
<p>The practical work No. 6:</p> <ul style="list-style-type: none"> <li>- Part I: Seminar /written work on the topic of the course and practical work performed.</li> <li>- Part II: Hydro-electrolytic balance: serum and urinary ionogram. Definition of volemia and how to determine it. Enumeration of the main cations and anions that are determined from blood and urine. normal values. General notions about the usefulness of their determination for medical practice. Definition of homeostasis of the internal environment. Possibilities and limits of hydro-electrolytic homeostasis; causes of imbalance: hypo-, iso-, hypertonic dehydrations; hypo-, iso-, hypertonic hyperhydration.</li> </ul>	2
<p>Practical work No. 7:</p> <ul style="list-style-type: none"> <li>- Part I: Motor plate: structure and functionality. Muscle scuta. Muscle tiredness.</li> <li>- Part II: Discussions on the seminar (written work); clarification of each student's errors exist in the paper;</li> <li>- Part III: Medulograme as a global test for assessing the functional state of the red marrow: utility/indications in performing; topography of the selection sites where bone puncture is practiced. General notions about the types of bone puncture, the normal elements that are investigated on the examination of a myelogram. (reference to the elements taught at the haematopoiesis course).</li> </ul>	2
<p>Practical work No. 8:</p> <ul style="list-style-type: none"> <li>- Part I: General notions about receptors: Classification: receptors that regulate adhesion properties between cells; receptors that transmit signals/information. Definition of the notion of ligand and their classification by provenance (exogenous, endogenous); receiver-ligand link. Specification of the 5 secondary mediator systems: adenylate-cyclase, guanilat cyclase, phosphatidyl inositol, tyrosinekinase and al Ca<sup>2+</sup>. The first two systems will be insisted on, possibly on calcium channels. Summary notions about intracellular receptors/organelles (mitochondrial, nuclear: natural and orphaned).</li> <li>- Part II: A. Exploration of hemostasis- Part I: Recapitulation of the physiology of primary hemostasis. Capillary fragility tests: suction cup test and Rumell-Leede. Capilaroscopy.Laboratory tests that explore the platelet factor; Bleeding time, as a test that explores overall primary hemostasis (technical, normal values, deviations from normal). B. Recapitulation of secondary hemostasis physiology. Triage tests and those that explore, overall, secondary hemostasis: total blood clotting time, in the test tube (Lee-White), Howell time; thromboplastin generation time, prothrombin time, prothrombin consumption time. Each of these tests will be specified: the principle of detrmination, normal values and the usefulness in locating the coagulation disorder in the intrinsic, extrinsic and common coagulation pathways.</li> <li>- Part III: Working on the bulletins.</li> </ul>	2
<p>Practical work No. 9:</p>	2

Laboratory Syllabus	Hours
<ul style="list-style-type: none"> <li>- Part I: General notions about cytokines and chemokines: definition of terms, their synthesis, mode of action on other cells. Examples of their role.</li> <li>- Part II: Exploration of hemostasis- PartII: Dosage of plasma fibrinogen (normal values; clinical significance of quantitative deviations from normal). Exploring clot retraction (general considerations). Fibrinolysis exploratory tests: description of the principle of the euglobulin clot lysis test.</li> <li>- Part III: Seminar-debate on: Summary notions of synthesis on the significance of each test investigated coagulation, by whose values are identified the stage / phase in which there is a possible coagulation disorder.</li> </ul>	
<p>Practical work No. 10:</p> <ul style="list-style-type: none"> <li>- Part I: General notions about thermoregulation;specifying the notions of fever and sub-fever.</li> <li>- Part II: Investigation of some of the properties of blood-Part II: Exploring the acid-base balance. Getting summary of blood oxymetry.</li> <li>- Part III: A. Functional exploration of carbohydrate metabolism – Part I: Recapitulation of general notions on carbohydrate physiology: definition, classification, carbohydrate homeostasis. Functional tests to investigate carbohydrate metabolism: static samples (enumeration, principles of determination, normal values) and loading (enumeration, principles of determination, normal values). B. Functional exploration of carbohydrate metabolism–Part II: Clinical utility of functional tests to investigate carbohydrate metabolism. General notions of: definition and staging of diabetes mellitus; definition of hypoglycaemia.</li> </ul>	2
<p>Practical work No. 11:</p> <ul style="list-style-type: none"> <li>- Part I: Functional exploration of lipid metabolism: a.Summary notions of physiology on the definition and classification of lipids. b.Enumeration of the main circulating lipid organic compounds and their normal values. c. Definition of: hyperlipemia and lipoproteinemia; classification of its fractions (Fredrickson-Lee classification, as amended WHO); Utility in medical practice in identifying the type of lipoproteinemia (general notions).</li> <li>- - Part II: Functional exploration of protein metabolism: a. Summary notions about amino acids (definition, classification, common fund of amino acids) and proteins (definition, classification, state of euproteinemia). b. Listing the main laboratory tests with their normal values, which investigate the biological state of proteins in the body.(emphasis will be placed on the clinical utility of serum protein electrophoresis). Clinical significance of deviations from normal values of these parameters; specifying the notions of: hypoproteinemia, hyperprotidemia and dysproteinemia. c. Physiological proteinuria.</li> </ul>	2
<p>Practical work No. 12:</p> <ul style="list-style-type: none"> <li>- Functional exploration of hydro-electrolytic metabolism.</li> <li>- Recapitulation of physiological composition in plasma electrolytes; recapitulation of knowledge of osmolarity and plasma density;</li> <li>- Serial ionogram: the main electrolytes determined by these investigations, normal values. Utility of ionogram in medical practice: generic names of deviations from normal. Their correlation with the notions of isohydry, isotonia and izoosmia of the organism. [Working on analysis bulletins].</li> <li>- - Dosage of sideremia, ferritin and total iron binding capacity (CTLF). normal values, beatings and clinical significance. [Working on analysis bulletins].</li> </ul>	2
<p>Practical work No. 13:</p>	2

Laboratory Syllabus	Hours
- Restoration of practical work	
Practical work No. 14 - Colloquium in the theme of practical work* - Note: The colloquium on how to learn the topic taught during the practical work sessions will be supported with the teacher who taught, in the last session of L.p. Physiology. Failure to promote the colloquium entails the impossibility of presenting the examination in the subject taught in the course of the discipline.	2

Minimal References:
1. Guyton – Textbook of Human Physiology. Guyton & Hall ISBN: 978-973-87261-4-7. Editura Medicala CALLISTO, 2007, Ediția: 11
2. Stevanovic, Nikola. (2017). Guyton and Hall Textbook of Medical Physiology - 12th-Ed.
3. Fiziologie Medicala - Walter Boron, Emile Boulpaep, Leon Zagrean, 2017, Editura: <u>Hipocrate</u> Editia: a III-a
4. Official Course

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
- The provision of medical services by the future doctor requires mandatory knowledge of the normal functioning of the body, with the inter-compliance of the activity of appliances and systems. Assessing a patient's return to normal biological functioning status requires reporting to the previous normal. Even from this, the appropriation of notions of physiology is required as a quasi-permanent necessity, in order to have criteria for comparison on Normal.
- Achieving this biological state in the dynamics of a disease, identified by functional normal allows to achieve a dual purpose: - proof of a thorough knowledge of the fundamentals of medical practice;

Disemination of the information	
Type of activities	Didactic Methods Employed
Course	- Interactive scheduled education; multimedia projection of course support
Laboratory	- Structure of practical work sessions on this discipline (previously presented).

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works in order to be accepted to the final laboratory exam:
- to know the basic concepts justifying: the usefulness in medical practice of a laboratory or paraclinical investigation carried out on a patient;
- be aware of the principle of determination, normal values and the generic name of deviations less and plus respectively;
- it is not permissible to support the L.P. colloquium without recovering the topic taught at the laboratory meetings, at which the student was absent; recovery is mandatory, regardless of whether the absence is reasoned or not;
- to be able to interpret the result from a laboratory/paraclinical analysis bulletin in general;

<b>Consideration points for computing the final score:</b>	<b>Share of the final score (in %) (Total = 100%)</b>
- Responses to the final exam	60 %
- Responses to the laboratory examination	-
- Periodic checks with written exams	20 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	10
<b>Description of the actual methods of examination – E</b>	
Descriptive written work and grid test (5 theoretical topics and 6 grid tests).	
<b>Minimal requirements for grade 5</b>	<b>Requirements for grade 10</b>
<ul style="list-style-type: none"> <li>• Minimum 50% correct answers</li> </ul>	<ul style="list-style-type: none"> <li>• Minimum 90% correct answers</li> </ul>

**Date of completion**

27.09.2017

**Discipline Coordinator,**

Oroş Mihaela, Ph. D., M.D.

**Head of the Department,**

Nemeş Roxana, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**

Oroş Mihaela, Ph. D., M.D.

**Laboratory Coordinator,**

Oroş Mihaela, Ph. D., M.D.  
Cojocaru Manole, Assoc. Professor, Ph.D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>MEDICAL BIOPHYSICS AND PHYSICS</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Burducea Gabriela, M.D., PhD., Lecturer</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Burducea Gabriela, M.D., PhD., Lecturer</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Ciurea Tatiana, M.D., Cojoacă Marian Emanuel, M.D, Ph.D. Candidate</b>				
Discipline Code	<b>M.1.2.10</b>	Formative category of the discipline		<b>FD</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>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>4</b>

No. of Hours per week	<b>4</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>2</b>
Total of hours in the curriculum	<b>56</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>28</b>
		Total hours per semester	<b>100</b>	Total hours of individual study	<b>44</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					<b>4</b>
2. Study according with the course support, manuals					<b>4</b>
3. Study of the minimal bibliography					<b>0</b>
4. Additional documentation in the library					<b>0</b>

5. Specific activity for the seminary or laboratory	0
6. Homeworks, translations, etc.	8
7. Preparing for different written exams	8
8. Preparing for oral examinations	10
9. Preparing for the final examination	4
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	2
13. Tutoring	4
14. Examinations	0
15. Other activities:	0

Course name	MEDICAL BIOPHYSICS AND PHYSICS
<b>Specific professional competencies</b>	<p><b>Cognitive:</b> Knowledge of the fundamental concepts and physical principles necessary to understand the structure and functions of the human body, the effects of physical factors on man, the physical processes underlying the apparatus used in diagnosis, prevention and treatment.</p> <p><b>Skills:</b> Manuality, precision, accuracy in the use of necessary physical techniques and methods in research, diagnosis and treatment.</p>
<b>Transversal competencies</b>	<p><b>Cross-cutting "soft skills":</b></p> <p><b>Skills in the role:</b> Responsible execution of the L.P. of biophysics by students under conditions of limited autonomy and their familiarity with activities specific to teamwork.</p> <p><b>Personal and professional development skills:</b></p> <ul style="list-style-type: none"> <li>- Awareness of the need for continuous training; efficient use of learning resources and techniques for personal and professional development.</li> <li>- Achieving a personal development plan through the efficient use of sources and resources of communication and training (internet, databases, courses) etc.</li> </ul>
<b>General objectives of the discipline</b>	Biophysics and Medical Physics, areas with a great theoretical and practical development, have the task of ensuring the formation of a scientific career for the doctor or researcher in a "future digital society".
<b>Specific objectives of the discipline</b>	<p>Ensuring knowledge of:</p> <ul style="list-style-type: none"> <li>- studying biological phenomena and structures using physical principles and methods, as well as the biological effects of physical factors in the environment;</li> <li>- the variation of a physical property, regardless of its nature (mechanical, electrical, thermal, electromagnetic, photonic, etc.), as a result of cellular metabolic activity, tissue or the whole organism;</li> <li>- the response of any system (cell, tissue, organ or whole organism) in the form of a physical signal, measurable physical parameter, following interaction with a physical or chemical factor (mechanical, thermal, acoustic or electrical stimuli; radiation: photons of VIS, RX, <math>\gamma</math>, nuclear radiation, microwave, etc.; exogenous or endogenous stimuli of a chemical nature).</li> </ul>

Course Syllabus	Hours
<p><b>Course No. 1:</b>  <b>Introduction:</b> the subject and definition of biophysics, relations with other sciences, its role in modern medicine and perspectives, thematic and approach, the main chapters. <b>Biomechanical elements:</b> rigid solid biomechanics: kinematic orientation and human kinematics; dynamics: measurement of forces and functional motion capacity, dynamic muscle activity; static: equilibrium states, levers and pulleys; biomechanical axes of joints, torques and motor chains.</p>	2
<p><b>Course no. 2:</b>  <b>Bioreology</b> - Reological characterization of solids and liquids; elastic bodies; plastic bodies; viscous bodies; Reynolds' number; bioreology of real bodies: visco bodies - elastics, Maxwell liquids, plasto bodies - visco - elastics; Newtonian liquids: the law of continuity and the law of Hagen - Poiseuille; Bernoulli's law; blood reology and clinical methods.</p>	2
<p><b>Course No. 3:</b>  <b>Elements of biological thermodynamics:</b> fundamental notions: thermodynamic systems, state parameters, thermodynamic states and processes, classification of thermodynamic processes; non-equilibrium processes, stationary states. <b>Postulates of thermodynamics and the first principle of thermodynamics.</b> Energy sources and energy circuit in the biosphere, photosynthesis and oxidative phosphorylation. <b>Second principle of thermodynamics and biological systems - open thermodynamic systems;</b> irreversible processes, stationary states in biological systems; application of formal thermodynamics in biochemical processes.</p>	2
<p><b>Course No. 4:</b>  <b>Molecular biophysics elements:</b> Water, structural diversity and physical properties; heavy water and tritiated water; models according to the state of aggregation; hydrogen bond and hydrophobic interaction; modification of the molecular structure of water in the presence of solvents; the role of water in biosystems; free water and structured water; non-destructive methods for studying water from biosystems.</p>	2
<p><b>Course No. 5:</b>  <b>Molecular phenomena at the interfaces:</b> Liquid phase transport phenomena: Fick diffusion and laws, kinetic-molecular diffusion; artificial membrane diffusion, artificial kidney; osmosis and osmotic pressure; Starling phenomenon: ultrafiltration and reabsorption; the role of osmotic pressure in various physiological and pathological phenomena.</p>	2
<p><b>Course No. 6:</b>  <b>Cellular biophysics elements:</b> Cell membranes: general aspects as well as of membrane structure and functions; inter- and cytoplasmic membranes; functions of biological membranes; composition and distribution of electrical charges on membranary interfaces; patterns of biological membrane structure; models of artificial membranes.</p>	2
<p><b>Course No. 7:</b>  <b>Transport phenomena through biogenic membranes:</b> Membrane balance; intra- and intercytoplasmic membrane transport phenomena: passive transport mechanisms: simple diffusion, non-electrolyte diffusion, facilitated diffusion; water transport by aquaporins; active transport: characteristics, patterns; ion pumps; transport by vesicles, the role of cellular junctions in membrane transport; medical implications.</p>	2
<p><b>Course No. 8:</b>  <b>Bioelectrogenesis and excitability: Cellular bioelectrogenesis:</b> resting potential, characteristics; action potential, characteristics, ion mechanisms; propagation of action potential; excitability cycle; phenomena accompanying action potential. <b>Getting bioexcitability:</b> the laws of excitability; electric currents, excitatory impulses. Global bioelectrogenesis.</p>	2

Course Syllabus	Hours
<b>Course No. 9:</b> <b>Biophysics of the mion - muscle contraction:</b> Molecular structure and ultrastructure of striated fibers; myoneuronal bond; mechanism of muscle contraction: electrical manifestations; biophysics of neuromuscular junction; ion mechanisms; biophysical aspects of muscle contraction: excitation coupling - contraction; physical manifestations accompanying muscle contraction; biophysics of smooth muscle fibers; muscle elastic proteins. Structura moleculară și ultrastructură fibrelor	2
<b>Course No. 10:</b> <b>Elements of neurobiophysics and biocybernetics:</b> Phenomenology of neuron function: synapse: structural characteristics; synapse at rest and in action; neurotransmitters - chymic synapse; electrotonic transmission of excitation - electrical synapse. <b>Biocybernetic elements:</b> information transmission, cyber systems for information transmission, reverse link; negative; neuron - information transmission system; neural networks, cyber models and neural network types; mechanisms of nerve activity in learning and memory processes, hierarchical division of memory.	2
<b>Course No. 11:</b> <b>Elements of biophysics of complex systems: Optical analyzer:</b> Eye, centered optical instrument; biophysical aspects of visual reception; photoreceptor cells: cones and canes; spectral sensitivity of the eye; mechanisms of photopic, mesopic and scotopic vision; univariant and trivariant vision; retinal photonic perception, signal processing: encoding and transmission of visual information; electrical activity of the visual analyzer; eye prostheses;	2
<b>Course No. 12:</b> <b>Bioacoustics and auditory analyzer: Hearing analyzer:</b> auditory functional explorations; biophysical mechanisms of auditory reception: biomechanical cochlear processes, modeling; electrical activity of the inner ear: electrical and permanent potentials; prosthesis. <b>Ultrasounds:</b> production, physical properties, mechanism of action, biological effects; use in medicine and biology: paramedical and therapeutic applications; use of ultrasound in diagnosis: general principles of echo technique, types of ultrasound explorations; possibilities and areas of applicability.	2
<b>Course No. 13:</b> <b>Biophysics elements of non-ionizing electromagnetic radiation:</b> Classification of non-ionizing electromagnetic radiation; physical processes induced by the interaction of non-ionizing electromagnetic radiation with matter; laws of photochemistry; mechanisms and biological effects of ultraviolet, visible, infrared, microwave and radar radiation; paramedical and medical applications.	2
<b>Course No. 14:</b> <b>Elements of biophysics of ionizing radiation:</b> classification of ionizing radiation; properties, nuclear reactions and radioactive isotopes; interaction with matter, dosimetry, biological effects; radiosensitivity and radioresistance of bioorganisms; radiation protection elements; static and dynamic paramedical and medical applications; therapeutic applications - radiodiagnosis - medical imaging and radiotherapy; new surgical instruments, perspectives.	2

Laboratory Syllabus	Hours
<b>1. L.P. No. 1: Statistical and graphical processing of laboratory data:</b> Elements of error calculation. Graphic processing of laboratory data.	2
<b>2. I. Physical methods for the study of molecular phenomena:</b>	2

Laboratory Syllabus	Hours
3. <b>L.P. No. 2:</b> Stalagmometric method for measuring surface tension of liquids. Determining the viscosity coefficient with the Ostwald viscosimeter.	2
4. <b>L.P. No.3.</b> Separation of components from a mixture by chromatographic method..	2
5. <b>II. Electrical and electronic methods are used in medicine and biology::</b>	2
6. <b>L.P. No. 4:</b> Study of the cathode oscilloscope; Processing of electrical signals.	2
7. <b>L.P. no. 5:</b> Study of passive transport by membrane with electric deck mountings.	2
8. <b>L.P. No. 6:</b> Electrical models of biological membranes. Tracing the voltage-intensity feature.	2
9. <b>III. Optical methods used in biology and medicine::</b>	2
10. <b>L.P. No. 7:</b> Optical microscopy: adjusting the device and setting up the image. Determination of the diameter of the hematoids.	2
11. <b>L.P. No. 8:</b> Determination of the concentration of the solution by refractometric method.	2
12. <b>L.P. No. 9 : Determination of the concentration of optically active solutions by polarimetric method.</b>	2
13. <b>L.P. No. 10:</b> Spectrophotometric methods for tracing the absorption curves of some components of interest in biology.	2
14. <b>L.P. No. 11:</b> Colorimetric methods are used for determining the concentration of solutions of biological interest.	2
15. <b>L.P. No. 12:</b> The focal method used to shape the normal eye and geometric vision defects.	2
16. <b>IV. Method is physical for the study of ionizing radiation:</b>	2
17. <b>L.P. No. 13:</b> Studying the radiation mitigation law with the help of the particle count with scintillation photomultiplier. Physical protection against ionizing radiation; efficiency of the screens.	2
18. <b>L.P. No. 14:</b> Practical exam	2

Minimal References:
1. Florina Opreș, 2008, Compendiu de Biofizică și Fizică Medicală, Ed. Printech, București, 301, ISBN 978-973-718-491-7
2. Florina Opreș, 2007, Biofizică și Fizică Medicală - Lucrări practice, ediția a treia revizuită, Ed. Printech, București, ISBN 978-973-718-787-1
3. Florina Opreș, 2006, Compendiu de Biofizică și Fizică Medicală, Ed. Printech, București, ISBN 973-718-491-2; 978-973-718-491-7
4. Florina Opreș 2004, Elemente de Biofizică și Fizică Medicală, vol 1, ediția a două revizuită, Ed. Printech, București, 246, ISBN 973-718-121-2, ISBN 973-718-122-0
5. Florina Opreș 2004, Elemente de Biofizică și Fizică Medicală, vol. 2, ediția a două revizuită, Ed. Printech, București, 242, ISBN 973-718-121-2, ISBN 973-718-123-9
6. Florina Opreș, 2002, Elemente de Biofizică și Fizică Medicală, Ed. Printech, București, 419, ISBN 973-652-685-2
7. Florina Opreș, Biofizică, Teste cu răspunsuri și indicații, Ed. Rotech. Pro., București, 2000
8. Petrescu Camelia, Petrescu Cristian. Biofizică. ISBN 978-606-610-077-9, 2014
9. Official course

**Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:**

- The study of the intrinsic structural and functional mechanisms characteristic of living matter, the subject of the study of preclinical disciplines, is the foundation of the understanding of the knowledge that will be acquired in clinical internships, allowing the development of research and clinical laboratories, resulting in a good insertion of graduates into the labour market. The analytical programme of the discipline determines the training of professional doctors who will serve European citizens/patients with equal rights and increasing needs.

**Disemination of the information**

Type of activities	Didactic Methods Employed
Course	- Interactive courses, presented in PowerPoint; scientific films.
Laboratory	- Working in the team of 2 to 3 students on the machine, each student studies the protocol of the paper in the PW book.

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

- The didactic framework explains to the students the principle of the method, presents them with the apparatus and the way of work, each student makes the measurements for that work, to which he must draw up a report, a mini-scientific work, in the idea of owning his specialized language, to familiarize himself with the kind of scientific, concise and to the point and with the processing of laboratory data (statistical/graphic).

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	-
- Projects / Translations / Posters / Essays, etc.	10 %
- Other activities:	-

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

- written examination
- practical examination, individually, on a ticket-based system.

Minimal requirements for grade 5	Requirements for grade 10
<ul style="list-style-type: none"> <li>• passing the practical examination</li> <li>• minimum half of the correct answers at written test</li> </ul>	<ul style="list-style-type: none"> <li>• passing the practical examination with grade 9 or 10;</li> <li>• 90% correct answers in the written test.</li> </ul>

**Date of completion**

25.09.2017

**Discipline Coordinator,**

Burducea Gabriela, M.D., PhD., Lecturer

**Head of the Department,**

Nemeş Roxana, Assoc. Professor, M.D., Ph. D.

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**Course Coordinator,**

Burducea Gabriela, M.D., PhD., Lecturer

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**Laboratory Coordinator,**

Ciurea Tatiana, M.D.,  
Cojoacă Marian Emanuel, M.D, Ph.D.  
Candidate

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**Department approval date**

30.09.2017

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## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>FIRST AID MEASURES</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Dan Mănăstireanu, Univ. Professor, M.D., Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Dan Mănăstireanu, Univ. Professor, M.D., Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Răzvan Adam, Lecturer, M.D., Ph.D.</b>				
Discipline Code	<b>M.1.2.11</b>	Formative category of the discipline		<b>SD</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>Op</b> -optional, <b>F</b> -facultative)			<b>M</b>	No. of credits	<b>3</b>

No. of Hours per week	<b>4</b>	Out of which are Course hours:	<b>2</b>	Seminar / Practical Activity / Clinical Stage	<b>2</b>
Total of hours in the curriculum	<b>56</b>	Out of which are Course hours:	<b>28</b>	Seminar / Practical Activity / Clinical Stage	<b>28</b>
		Total hours per semester	<b>75</b>	Total hours of individual study	<b>19</b>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					4
2. Study according with the course support, manuals					2
3. Study of the minimal bibliography					0
4. Additional documentation in the library					0

5. Specific activity for the seminary or laboratory	4
6. Homeworks, translations, etc.	0
7. Preparing for different written exams	0
8. Preparing for oral examinations	0
9. Preparing for the final examination	3
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	2
13. Tutoring	0
14. Examinations	2
15. Other activities:	2

Course name	FIRST AID MEASURES
<b>Specific professional competencies</b>	- The ability to acquire the theoretical and practical knowledge of the RCRC for emergency response in situations requiring first aid.
<b>Transversal competencies</b>	- Developing leadership, initiative and spirit capabilities of "wise sacrifice" but also teamwork for crisis intervention. .
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Knowledge, understanding, explanation and interpretation: <ul style="list-style-type: none"> <li>o Understanding the specifics of the discipline and the characteristics that differentiate it from the other disciplines.</li> </ul> </li> <li>- Leadership and teamwork.</li> <li>- Instrumental-applicative: <ul style="list-style-type: none"> <li>o Recognition of risk factors;</li> <li>o Learning emergency techniques and obtaining the necessary manuality,</li> <li>o Understanding the efficient use of life-saving means,</li> </ul> </li> <li>- Practical application of the health legislation in the field and the consequences of non-compliance,</li> <li>- Understanding the need for first aid measures, individual and collective activities.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Making ways to recognize emergencies and establish first aid measures.</li> <li>- Techniques for carrying out first aid measures, appropriating and deepening RCRC measures.</li> </ul>

Course Syllabus	Hours
1. Introduction – testing of knowledge of anatomy and physiology, presentation of the content of the course, formation of working groups.	4
2. Getting clinical anatomy, physiology and physiology of the cardiovascular and respiratory apparatus.	4
3. Getting one-time and multiple emergency management	4
4. Sudden death, positive diagnosis and differential, syncope, hypotimia	4
5. Sellick and Heimlich Maneuvers	4
6. The algorithm of practical treatment, determination of cardiac activity, theory of external chest compressions and artificial ventilation	4
7. Cardio-respiratory resuscitation – with one / more rescuers, emergency prevention systems (state and private owned ambulance, SMURD, Red Cross, IGSU).	4

Laboratory Syllabus	Hours
1. Practice of clinical anatomy, discovery of regions of interest for first aid of cardiovascular and respiratory devices	4
2. PLS maneuvers, Sellick and Heimlich maneuvers	4
3. Positive and differential diagnosis	4
4. Achieving artificial ventilation	4
5. Performing external chest compressions	4
6. RCRC with one or more rescuers	4
7. Practice of clinical anatomy, discovery of regions of interest for the first aid of cardiovascular and respiratory belongings. First aid techniques in short-term loss of consciousness	4

Minimal References:
1. Manăstireanu D. Medicină de dezastru – curs ,4006
2. Manăstireanu D., Managementul medical al dezastrelor-lucrări practice, 4009
3. Mănăstirenu D., Medicină de dezastru-curs, 4009
4. Mănăstirenu D., Medicină de dezastru-aspecte generale și de management general al dezastrelor, Mănăstireanu D, 4010
5. Mănăstirenu D., Tehnică îngrijirii bolnavului și noțiuni de prim ajutor – Editura Didactică și Pedagogică-1994 / ISBN – 973-30-3693-5
6. Mănăstirenu D., Curs practic de urgențe medico-chirurgicale - vol.I –Editura Didactică și Pedagogică– București 1995
7. Mănăstirenu D., Curs practic de urgențe medico-chirurgicale - vol.Îl –Editura Didactică și Pedagogică– București 1996
8. Mănăstirenu D., Curs practic de urgențe medico-chirurgicale - vol.III –. Editura Didactică și Pedagogică– București 1997
9. Manastireanu D., Curs practic de urgențe medico-chirurgicale - vol.IV – Editura Didactică și Pedagogică– București 1998
10. Manastireanu D., Curs practic de urgențe medico-chirurgicale vol.V – Editura Didactică și Pedagogică– București 1999
11. Virtual library on <a href="http://www.utm.ro">www.utm.ro</a> .

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
- From the first year, medical students must be able to provide first aid in emergency situations, which is important in the training of professional doctors who will serve European citizens/patients with equal rights and growing needs.

Disemination of the information	
Type of activities	Didactic Methods Employed
Course	- Multimedia projection of the material according to the analytical program accompanied by interactive programmed education, in order to form the theoretical and practical notions accumulated
Laboratory	- Presentation of the rules of protection – Law No.1 of emergency medicine - Demonstrations of CRP techniques - Execution of the "own manum" of the various techniques of the CRP

**Disemination of the information**

- Different demonstrations on complex techniques

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

- Presence to all PWs – with the recovery of absences
- Learning first aid techniques
- Knowledge of the notions of cardiac arrest, loss of consciousness
- Making at least 1 report with a given or choice topic.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	30 %
- Periodic checks with written exams	5 %
- Continuous testing through the semester	5 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

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

- The final evaluation consists in a written test with 50 questions, multiple choice.

Minimal requirements for grade 5	Requirements for grade 10
<ul style="list-style-type: none"> <li>• Active presence at all PWs;</li> <li>• Answering to 50% of the questions in the written test.</li> </ul>	<ul style="list-style-type: none"> <li>• Answering to all (100 %) of the questions in the written test.</li> </ul>

**Date of completion**

25.09.2017

**Discipline Coordinator,**

Dan Mănăstireanu, Univ. Professor, M.D., Ph.D.

**Head of the Department,**

Nemeş Roxana, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**

Dan Mănăstireanu, Univ. Professor, M.D., Ph.D.

**Laboratory Coordinator,**

Răzvan Adam, Lecturer, M.D., Ph.D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>MEDICAL SPECIALIZED COMMUNICATION IN MODERN LANGUAGE (II)</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Mirela Radu, Lecturer, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Course	<b>Mirela Radu, Lecturer, Ph.D.</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Mirela Radu, Lecturer, Ph.D.</b>				
Discipline Code	<b>M.1.2.12</b>	Formative category of the discipline		<b>CD</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>Op</b> -optional, <b>F</b> -facultative)			<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>
<b>Distribution of time pool per week</b>					<b>Hours</b>
1. Study of the course material					<b>2</b>
2. Study according with the course support, manuals					<b>2</b>
3. Study of the minimal bibliography					<b>2</b>
4. Additional documentation in the library					<b>1</b>

5. Specific activity for the seminary or laboratory	1
6. Homeworks, translations, etc.	2
7. Preparing for different witten exams	2
8. Preparing for oral examinations	1
9. Preparing for the final examination	2
10. Consultations	1
11. In the field documentation	1
12. Documentation from web sources, portals, wiki websites	2
13. Tutoring	1
14. Examinations	2
15. Other activities:	-

Course name	SPECIALTY COMMUNICATION IN ENGLISH
<b>Specific professional competencies</b>	<p>1. Knowledge and understanding (knowledge and appropriate use of discipline-specific notions):</p> <ul style="list-style-type: none"> <li>- As an important discipline in the curriculum, the aim is both to revise the linguistic and grammatical knowledge of the general English language, as well as to assimilate and fix the elements of specialized, medical language. The seminar aims, therefore, to review the grammatical and lexical structures commonly found in the medical language, through readings of texts, dialogues and applied exercises, interactive graduated by the level of difficulties, leading to good communication in the field.</li> </ul> <p>2. Explanation and interpretation (explanation and interpretation of ideas, projects, processes, as well as theoretical and practical contents of the discipline):</p> <ul style="list-style-type: none"> <li>- Developing the ability to understand the written text (Reading):</li> <li>- read, translated, answered questions about the text;</li> <li>- identification of key terms/ elements of cohesion/ coherence in the text;</li> <li>- Development of hearing-based understanding capacity :</li> <li>- identification of correct pronunciation and intonation; identification of the register (formal/ informal);recognition of fundamental communication strategies (introductory and conclusive formulas);</li> <li>- Development of oral expression capacity (Speaking): identification and correct use of basic language structures corresponding to different acts of language; correct use of notional and instrumental units; correct use of pronunciation and intonation rules.</li> <li>- Development of writing capacity: correct use of introductory elements; adaptation to the communication situation</li> </ul> <p>3. Instrumental-applicative (design, management and evaluation of specific practical activities: use of methods, techniques and tools of investigation and application):</p> <ul style="list-style-type: none"> <li>- identification and use of communication strategies, methods and techniques in the medical process;</li> </ul> <p>4. Atitudinal (manifestation of a positive and responsible attitude towards the scientific field / centered on democratic values and</p>

	<p>relations / promotion of a system of moral and civic cultural values / optimal and creative exploitation of one's own potential in scientific activities / involvement in institutional development and in promoting scientific innovations / engaging in partnership relations with other people - institutions with similar responsibilities / participation in their own professional development):</p> <ul style="list-style-type: none"> <li>- the manifestation of a positive and responsible attitude towards the scientific field;</li> <li>- promoting a system of cultural, moral and civic values;</li> <li>- optimal and creative exploitation of one's own potential in scientific activities;</li> <li>- involvement in institutional development and promotion of scientific innovations;</li> <li>- engaging in partnership relationships with other people - institutions with similar responsibilities;</li> <li>- participation in their own professional development.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>- Realistically solving - with both theoretical and practical argumentation - common professional situations, with a view to solving them effectively and ethically.</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- Familiarization of students with the notions and concepts characteristic of medical terminology;</li> <li>- Training of theoretical and practical skills in the medical field.</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>- The work of the seminar is based on the reading of medical texts, followed by the conversation, problematization and appropriation of the notions of medicine through discovery.</li> <li>- All this is done by explanation, deductive methods, association, exemplification, presentation, role-playing games, repetitive practice, drills, schematic development, visualization techniques, frontal, individual activities.</li> </ul>

<b>Course Syllabus</b>	<b>Hours</b>
1. Main types and subtypes of tissues	2
2. The skeletal system	2
3. Disorders of the musculo-skeletal system	2
4. The integumentary system	2
5. The circulatory system	2
6. Diseases afflicting the cardiovascular system and blood	2
7. The respiratory system; diseases affecting the respiratory system	2
8. The digestive system; diseases affecting the digestive system and clinical considerations	2
9. The urinary system; disorders associated to the urinary system	2
10. The endocrine system	2
11. Diseases of the endocrine system and clinical aspects	2
12. Sensory organs; disorders affecting the senses clinical aspects concerning the eye; clinical aspects concerning the ear	2
13. Drugs – types and routes of administration	2
14. Final revision	2

Laboratory Syllabus	Hours
1. Main types and subtypes of tissues	2
2. The skeletal system	2
3. Disorders of the musculo-skeletal system	2
4. The integumentary system	2
5. The circulatory system	2
6. Diseases afflicting the cardiovascular system and blood	2
7. The respiratory system; diseases affecting the respiratory system	2
8. The digestive system; diseases affecting the digestive system and clinical considerations	2
9. The urinary system; disorders associated to the urinary system	2
10. The endocrine system	2
11. Diseases of the endocrine system and clinical aspects	2
12. Sensory organs; disorders affecting the senses clinical aspects concerning the eye; clinical aspects concerning the ear	2
13. Drugs – types and routes of administration	2
14. Final revision	2

Minimal References:
1. <b>Valerie C. Scanlon</b> , <i>Essentials of anatomy and physiology</i> , 5 <sup>th</sup> Edition, F.A. Davis Company, Philadelphia, 2007
2. <b>Van De Graaff</b> , <i>Human Anatomy</i> , 6 <sup>th</sup> Edition, The McGraw–Hill Companies, 2001
3. <b>John T. Hansen</b> , <i>Netter’s Atlas of human physiology</i> , 1 <sup>st</sup> Edition, Icon Learning Systems, 2002
4. <b>Sylvia S. Made</b> , <i>Understanding Human Anatomy &amp; Physiology</i> , 5 <sup>th</sup> Edition, The McGraw–Hill Companies, 2004
5. <b>Heather Bateman, Ruth Hillmore, Daisy Jackson</b> , <i>Dictionary of medical terms</i> , 4 <sup>th</sup> Edition, A & C Black, London, 2007
6. <b>Nina Thierer, Deborah Nelson, Judy K. Ward, LaTanya Young</b> , <i>Medical Terminology Language for Health Care</i> , The McGraw-Hill Companies, Inc., 2010
7. <a href="http://www.britannica.com/science/human-body">www.britannica.com/science/human-body</a>

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
<ul style="list-style-type: none"> <li>- The future practical activity of the doctor is based not only on theoretical and practical knowledge, but also on knowledge of English, patience and special conscientiousness, which is acquired through studies started in the preclinical discipline Specialized communication in English.</li> <li>- Matter provides the doctor with the necessary basic knowledge of the medical context.</li> </ul>

Disemination of the information	
Type of activities	Didactic Methods Employed
Course	<ul style="list-style-type: none"> <li>- Interactive scheduled education; multimedia projection of course support</li> </ul>
Laboratory	<ul style="list-style-type: none"> <li>- Practical demonstration of the clinical aspects of some diseases but also the specifics of important systems of the human body.</li> </ul>

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

- to know the basics of medical terminology in English;
- have no more than 20 % unmotivated and unrecovered absences from practical works.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	50 %
- Responses to the laboratory examination	20 %
- Periodic checks with written exams	20 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

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

Descriptive written work and grid test (5 theoretical topics and 6 grid tests).

Minimal requirements for grade 5	Requirements for grade 10
<ul style="list-style-type: none"> <li>• promoting the practical exam</li> <li>• promoting control work</li> <li>• recovery of absences from practical work</li> <li>• knowledge of the basics of the terminology taught</li> </ul>	<ul style="list-style-type: none"> <li>• in-depth knowledge of the notions taught</li> </ul>

**Date of completion**

25.09.2017

**Discipline Coordinator,**

Mirela Radu, Lecturer, Ph.D.

**Head of the Department,**

Nemeş Roxana, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**

Mirela Radu, Lecturer, Ph.D.

**Laboratory Coordinator,**

Mirela Radu, Lecturer, Ph.D.

**Department approval date**

30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>YEARLY MEDICAL PRACTICE FOR ACQUIRING MEDICAL SKILLS AND COMPETENCES</b>				
Didactic position, name and surname for the Coordinator of the Discipline					
Didactic position, name and surname for the Coordinator of the Course	<b>Săvulescu Florin, M.D., Ph.D, Lecturer</b> <b>Dincă Valeriu Gabi, M.D., Ph.D, Lecturer</b>				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Săvulescu Florin, M.D., Ph.D, Lecturer</b> <b>Dincă Valeriu Gabi, M.D., Ph.D, Lecturer</b>				
Discipline Code	<b>M.1.2.13</b>	Formative category of the discipline	<b>SD</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>Op</b> -optional, <b>F</b> -facultative)			<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					-
2. Study according with the course support, manuals					-
3. Study of the minimal bibliography					-
4. Additional documentation in the library					-

5. Specific activity for the seminary or laboratory	-
6. Homeworks, translations, etc.	-
7. Preparing for different written exams	-
8. Preparing for oral examinations	-
9. Preparing for the final examination	-
10. Consultations	-
11. In the field documentation	-
12. Documentation from web sources, portals, wiki websites	-
13. Tutoring	-
14. Examinations	-
15. Other activities:	-

Course name	YEARLY MEDICAL PRACTICE FOR ACQUIRING MEDICAL SKILLS AND COMPETENCES
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>- Knowledge, understanding, explanation and interpretation of all theoretical knowledge obtained during the year</li> <li>- Practical application of health legislation in the field and consequences of non-compliance</li> <li>- Understanding the need for first aid measures, individual and collective activities.</li> </ul>
<b>Transversal competencies</b>	- Development as future medical professionals with direct specification of the three-dimensional valences of their entity – doctor, family member and participant in social life
<b>General objectives of the discipline</b>	- Familiarization of students with daily practice, based on the theoretical knowledge obtained
<b>Specific objectives of the discipline</b>	- Understanding the importance of practical activity for your entire medical career.

Course Syllabus	Hours
<b>1. Administrative</b> - Hospital organization, patient circuit in the medical-health unit, the rights and obligations of the patient, obtaining informed consent. Rules of conduct of the practicing student in the ward and hospital	30
<b>2. General rules of asepsis and antisepsis. Hygiene-dietetic and microclimate</b> - medical washing of hands with soap and soap disinfectant, disinfection of hands with alcoholic solutions. <b>Approach and management of patients according to pathology.</b> Patient bedridden:	40
<b>3. Patients supervision</b> - temperature, pulse, breathing, diuresis, stool, vomiting, insensitiveness, perspiration, sputum, clinical observation sheet, anamnesis and clinical examination at the patient's bed,	40
<b>4. Medical maneuvers</b> - non-invasive measurement of blood pressure, determination of capillary pulse, determination of capillary blood glucose, oxygen therapy – nasal cannula, administration of oral and inhaled medication.	40
<b>5. Optional:</b> Electrocardiographic recording; Intramuscular injection, intradermal injection, subcutaneous injection.	10

Laboratory Syllabus	Hours
1. -	2

Minimal References:	
1.	Technique of patient care and first aid – Dr. Dan Monastereanu and Acad. Prof. Dr. Gheorghe Niculescu – Didactica and Pedagogical Publishing House -1994
2.	Practical course of medical-surgical emergencies - vol. I – Dr. Dan Monastereanu et al. Didactic and Pedagogical Publishing House – Bucharest 1995
3.	Practical course of medical-surgical emergencies - vol.II – Dr. Dan Monastereanu et al. Didactic and Pedagogical Publishing House – Bucharest 1996
4.	Practical course of medical-surgical emergencies - vol. III – Dr. Dan Monastereanu et al. Didactic and Pedagogical Publishing House – Bucharest 1997
5.	Practical course of medical-surgical emergencies - vol.IV – Dr. Dan Monastereanu et al. Didactic and Pedagogical Publishing House – Bucharest 1998
6.	Practical course of medical-surgical emergencies vol. V – Dr. Dan Monastereanu et al. Didactic and Pedagogical Publishing House – Bucharest 1999
7.	M.Ghinescu; Community Nursing -Principles of Integrated Practice Renaissance Publishing Bucharest 2009
8.	C.Moga, A.Marcu, d.G.Minca :Communication enters and inter-organizational Institute of Public Health 2004
9.	Law 46/2003 Patient Rights Act
10.	Rules of 12 December 2016 for the application of the Patient Rights Act No. 46/2003
11.	Law No.17/2001-Social assistance of elderly persons
12.	G.Goldis: Medical Ethics in Pediatric Practice Aeus Publishing House 2006
13.	Order No. 961/2016 for the approval of the Technical Rules on cleaning, disinfection and sterilisation in public and private health facilities
14.	ORDIN No. 1101/2016 of 30 September 2016 on the approval of the Rules for the Surveillance, Prevention and Limitation of Health Care-Associated Infections in Health Units Issuer: Ministry of Health Published In: Official Gazette No. 791 of 7 October 2016
15.	ORDIN no. 1.226 of 3 December 2012 for the approval of the Technical Rules on the management of waste from medical activitiesMS MonitorOfficial Gazette.855of18December 2012
16.	Law 282/2005 on the organization of blood transfusion activity, donation of blood and blood components of human origin, as well as ensuring health quality and safety, with a view to their therapeutic use, republished 2014. Law No. 282/2005 republished 2014

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
- The completion of the specialized practical training course allows the integration of the future doctor in a responsible professional environment, the skill of collaboration with specialists from various fields, the development of the capacity to provide clinical assistance in a variety of problems corresponding to the expectations of representatives of the epistemic community, professional associations and representative employers in the field of Health.

Disemination of the information	
Type of activities	Didactic Methods Employed
Course	-
Laboratory	- The usual activity of the institution - Activity at the patient'sbed.

Disemination of the information	
	- Presentation of methodological elements, group discussions, group exercise, case analysis, demonstrations, dose calculation, case presentations, documentary visits, practice book.

Minimal performance standards – the minimum level of activities that need to be fulfilled by the student during the practical works in order to be accepted to the final laboratory exam:
<ul style="list-style-type: none"> <li>- 10 cases with vital sign and anamnesis assessments</li> <li>- making and completing 5 observation sheets from admission to discharge..</li> <li>- 5 nutritional anamnesis and the achievement of at least 3 specific regimens.</li> <li>- assessment of 10 patients with various types of pain and their history and anamnesis.</li> <li>- Practice scale: Completion of the practice book, Practice Convention, Specialty Practice Assessment Sheet</li> </ul>

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	60 %
- Responses to the laboratory examination	-
- Periodic checks with written exams	40 %
- Continuous testing throught the semester	-
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

Description of the actual methods of examination – E	
Descriptive written work and grid test (5 theoretical topics and 6 grid tests).	
Minimal requirements for grade 5	Requirements for grade 10
<ul style="list-style-type: none"> <li>• Covering at least 50% of the topics</li> </ul>	<ul style="list-style-type: none"> <li>• Covering at 100% of the topics</li> </ul>

**Date of completion**  
 \_\_\_\_\_  
 25.09.2017

**Discipline Coordinator,**  
 \_\_\_\_\_  
 -

**Head of the Department,**  
 \_\_\_\_\_  
 Ulmeanu Dan, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**  
 \_\_\_\_\_  
 Săvulescu Florin, M.D., Ph.D, Lecturer  
 Dincă Valeriu Gabi, M.D., Ph.D, Lecturer

**Laboratory Coordinator,**  
 \_\_\_\_\_  
 Săvulescu Florin, M.D., Ph.D, Lecturer  
 Dincă Valeriu Gabi, M.D., Ph.D, Lecturer

**Department approval date**  
 \_\_\_\_\_  
 30.09.2017



## DISCIPLINE FILE

Faculty	<b>MEDICINE</b>
Department	<b>PRECLINICAL SCIENCES</b>
Field of study	<b>HEALTHCARE</b>
Study cycle	<b>LICENSE</b>
Study program	<b>MEDICINE</b>

Discipline`s Name	<b>PHYSICAL EDUCATION (II)</b>				
Didactic position, name and surname for the Coordinator of the Discipline	<b>Urichianu Adrian Ion, Ph.D., Assoc. Professor</b>				
Didactic position, name and surname for the Coordinator of the Course	-				
Didactic position, name and surname for the Coordinator of the Seminary / Laboratory / Clinical Stage	<b>Urichianu Adrian Ion, Ph.D., Assoc. Professor</b>				
Discipline Code	<b>M.1.2.15</b>	Formative category of the discipline		<b>CD</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>Op</b> -optional, <b>F</b> -facultative)			<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>
<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	3
6. Homeworks, translations, etc.	0
7. Preparing for different written exams	0
8. Preparing for oral examinations	0
9. Preparing for the final examination	2
10. Consultations	0
11. In the field documentation	0
12. Documentation from web sources, portals, wiki websites	2
13. Tutoring	2
14. Examinations	2
15. Other activities:	0

Course name	PHYSICAL EDUCATION (II)
<b>Specific professional competencies</b>	<ul style="list-style-type: none"> <li>• Modular design (Physical and sports education, Sport and motor performance, Kinetotherapy and special motor skills) and planning the basic contents of the field with interdisciplinary orientation</li> <li>• Organization of the integrated curriculum and training and learning environment with an interdisciplinary focus (Physical and Sports Education, Sport and Motor Performance, Kinetic Therapy and Special Motor skills)</li> <li>• Assessment of physical growth and development and quality of motor skills according to the specific requirements/objectives of physical and sports education, attitude towards independent exercise</li> <li>• Assessment of the level of training of practitioners of physical education and sport activities</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Organisation of physical and sports education activities for persons of different ages and levels of training under qualified assistance conditions, in compliance with the rules of ethics and professional ethics</li> <li>• Efficient and effective performance of work tasks for the organisation and conduct of sports activities</li> <li>• Operating with digital programs, documenting and communicating in an international language of movement</li> </ul>
<b>General objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• Optimization of motor capacity according to the requirements of the professional profile;</li> <li>• Knowledge of ways of preventing, correcting and recovering diseases and deficient attitudes encountered in the medical profession;</li> </ul>
<b>Specific objectives of the discipline</b>	<ul style="list-style-type: none"> <li>• The role of physical education in the daily program of the student, future doctor;</li> <li>• Training of the ability to exercise independently in your spare time;</li> <li>• The objectives listed can be achieved by using methods and means specific to physical education and sport.</li> <li>• Improving basic motor skills (strength, speed, stamina, skill);</li> </ul>

Course Syllabus	Hours
1. Communication of control requirements and rules. Organization of the student collective by groups. Light runs alternated with mobility exercises.	2
2. Circuit of general physical training (fixed scales, medicine balls, gymnastics benches, acrobatics). Endurance run: B = 5 minutes; F = 4 minutes	2
3. General physical training circuit (pair exercises: free and with medicinal balls, acrobatics). Endurance run: B = 6 minutes; F = 5 minutes	2
4. General physical training circuit conducted outdoors (stadium stairs, ropes, motor games). Endurance run: B = 7 minutes; F = 6 minutes	2
5. Development of motor skills: resistance-speed: - exercises from the school of running, jumping, throwing; long-term running (amounting to 8 -10 min.); accelerated running (up to 50 m); long jump from the spot.	2
6. Exercises and exercise structures for learning technical-tactical elements and procedures in sports games. Table tennis, bilateral game. Exercises of selective influence of the musculoskeletal system and general physical development: exercises of elasticity and joint and muscle mobility.	2
7. Control rules and samples	2

Laboratory Syllabus	Hours
-	-

Minimal References:
1. CÎRSTEA, GH., (2003), <i>Programming and planning in school physical and sports education</i> , Universe Publishing House, Bucharest;
2. CERGHIT, I., (1997), <i>Educational Methods</i> , Didactic and Pedagogical Publishing House, Bucharest,.
3. DRAGNEA, A., BOTA, A., (2010), <i>Theory of Motor Activities</i> , Didactic and Pedagogical PublishingHouse, Bucharest;
4. Dragu M., - <i>Motor Games</i> , Publishing House of the University Foundation "Lower Danube" Galati, 2002.
5.
6. Dragu M., - <i>Motion Games</i> , Galati Academic Publishing House, 2006.
7.
8. Ionescu, A., Mazilu, V., (1971), <i>Physical Exercise in Health Service</i> , Stadion Publishing House, Bucharest;
9.
10. Merghes P, Teghiu A.; <i>Medical gymnastics for the prevention and correction of physical deficiencies</i> ; . Ed Mirton 2006
11. Urichianu, A., I., Ulareanu M., Georgescu, C., <i>Bodybuilding Exercises</i> , Ed. Prouniversitaria, 2015.
12. Urichianu, A., s.a. <i>Theory and Methodology of Physical Education and Sport</i> , Ed. Discobol, 2018

Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:
- Through its contents, the discipline has a pronounced pragmatic character, contributing to the training of specialists in the field of specialization through the following: harmonious development of the organism; optimisation of health status; preventing the installation of global and segmental physical deficiencies, training and maintaining the correct attitudes of the body; stimulating students' interest in systematic and independent exercise individually and

**Correlations between the contents of the discipline and the expectations of the community representatives, professional associations and representative employers in the Healthcare Industry:**

collectively on a daily or weekly basis; creating a habit of complying with sports hygiene and accident prevention rules; developing self-defense and self-exceeding capacity

**Disemination of the information**

Type of activities	Didactic Methods Employed
Course	-
Laboratory	- Sports practice with specialized sports equipment.

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

- 25 abdomens; 30 rear; bilateral sports game of your choice (football, volleyball, table tennis)
- 2 reports made and supported during practical hours, admitted with a minimum grade of 5 (corresponding to the grade allowed)

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

- For the acquisition by the student of the minimum level of competences specific to the discipline we consider it necessary to participate interactively in the seminar.

Consideration points for computing the final score:	Share of the final score (in %) (Total = 100%)
- Responses to the final exam	70 %
- Responses to the laboratory examination	10 %
- Periodic checks with written exams	10 %
- Continuous testing through the semester	10 %
- Projects / Translations / Posters / Essays, etc.	-
- Other activities:	-

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

- Direct evaluation in the sports arena

Minimal requirements for grade 5	Requirements for grade 10
• Passed/Rejected system	• Passed/Rejected system

**Date of completion**

25.09.2017

**Discipline Coordinator,**

Urichianu Adrian Ion, Ph.D., Assoc. Professor

**Head of the Department,**

Nemeş Roxana, Assoc. Professor, M.D., Ph. D.

**Course Coordinator,**

Urichianu Adrian Ion, Ph.D., Assoc. Professor

**Laboratory Coordinator,**

Urichianu Adrian Ion, Ph.D., Assoc. Professor

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**Department approval date**

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30.09.2017