FACULTY OF MEDICINE

MEDICINE CURRICULUM 0912.1 MEDICINE
DEPARTMENT OF ANATOMY AND CLINICAL ANATOMY

APPROVED
at the meeting of the Commission for Quality Assurance and Curricular Evaluation Faculty of Medicine
Protocol nr. 1 din 16.09.21

President, Dr. hab. şt. med., associate professor

Suman Serghei _____

APPROVED
at the meeting of the Council of the Faculty of Medicine II

Protocol nr. 1 din 21.09.21

Dean of the Faculty Dr. hab. şt. med., associate professor

Placintă Gh. _____

APPROVED
at the meeting of the Department of Anatomy and Clinical Anatomy
Protocol Nr. 2 din 1.09.22
Head of department, Dr. hab. şt. med., prof. univ.
Catereniuc Ilia _____

CURRICULUM

SUBJECT OF **SURGERY. SURGICAL TECHNIQUES**

Integrated studies

Course type: **Optional subject**

Curriculum developed by the team of authors:
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Chişinău, 2021

I. PRELIMINARY

• General presentation of the discipline: the role and the importance of the discipline in the formation of specific competences in professional / special training

The course of Surgery. Surgical techniques is an important part of preclinical and clinical education which main objective is to study particularities of spatial structures in various anatomical regions and their interconnections and to describe the main terms of different surgical techniques.

The individual anatomical variability of the human body is determined by the constitutional type, gender and age. Thus, the position of the organs, vessels, nerves is unique for each person, and represents an individual surgical compartment, distinct for each patient.

In most cases surgeries predict denudation of organs or some their parts. Performing an operation, the surgeon must evaluate the structure and anatomical accessibility, minimizing the section of the anatomical formations localized in the projection of the target organ.

The human body consists of the following compartments: head, neck, trunk, upper and lower limbs. Each compartment consists of areas, which in turn are divided into topographical regions.

Clinical anatomy and operative surgery use the following methods to study the living human body and cadavers: roentgenoscopy, roentgenography, roentgenostereography, CT, MRI, angiography, radionuclide scintigraphy, thermography and endoscopic explorations, (as thoraco-, laparo-, gastro -, angio-, cardio-, broncho-, colonoscopy, etc.).

The research of the body surface is performed in order to determine the osteomuscular landmarks, which help to evaluate the direction of surgical incisions and anthropometric measurements. Live morphological exploration of the head and neck in living humans includes both bone and soft elements.

To study the cadavers following methods are used: anatomotorographic dissection, by different incisions it is possible to study the tissues of regions layer-by-layer(cutting the regions according to anatomato-topographic borders), the structural-spatial correlations of the components of the neuro-vascular bundles, the mutual position of the organs, etc. The method of study by glacial carving, proposed and used by N. I. Pirogov, consists in the stepped exhaustion of all the tissues surrounding the organ under study.

The main aim of this discipline is to elucidate the regions of the body, including through the current international anatomical nomenclature, to be studied by students, residents and practitioners.

- **• The purpose of the curriculum in professional education**

Applied science, the synthesis of surgical techniques, which studies the spatial structural relationships of organs and tissues of the human body. Surgical techniques develops a clear understanding of inter-organic relationships, both adjacent and distant, as a result it can solve difficult problems of diagnosis and multidisciplinary treatment. Surgical techniques is discipline that form an integral part and meet the requirements of practical medicine.

The study of Operative techniques within the residency aims to acquire, systematize the knowledge in clinical anatomy, to develop skills and to deepen the knowledge necessary for argumentation of surgical techniques, topical diagnosis, topographic and surgical argumentation of disease progression

21st Century Medicine is a MEDICINE OF ADVANCED SURGICAL TECHNIQUES.

• **Teaching languages:** Romanian, Russian, English and French.

• **Beneficiaries:** III$_{rd}$ year students, Medical faculty 1 and 2, Speciality - Medicine

II. ADMINISTRAREA DISCIPLINEI

The code of Module		**S.06.A.054.4**	
The name of Module		**Surgery. Surgical techniques**	
Responsable of the Module		PhD, MD, prof. univ., **Suman Serghei**	
Year	**III**	Semester/Semesters	**6**
Total hours, including:			**30**
The lectures	**10**	Practical lessons	**10**
The seminars	**-**	Individual work	**10**
Clinical stage (total hours)			**-**
Evaluation form	**E**	Credits	**1**

III. TRAINING OBJECTIVES IN THE DISCIPLINE

✓ ***At the level of knowledge and understanding:***

- Know spatial structural relationships of organs and tissues by region;
- To know the changes of the interorganic relationship in different physiological and pathological states;
- To possess / know surgical techniques
- Define the theoretical bases of clinical anatomy;

- • To define and theoretically relate the basic surgical instruments and to perform on the corpse the basic medical-surgical techniques;
- To identify the purpose, stages and complications of the surgical act;
- To identify the particularities of the surgical act according to the affection, age and sex

✓ ***At the application level:***

- • To solve situation problems
- • Possess the application of knowledge
- • To demonstrate the technique of surgical dissection in regional plans;
- • To demonstrate anatomically-clinically the possible routes of spread (primary and secondary) of purulent processes ar hematomas;
- • To identify the basic surgical instruments;
- • To argue the accesses of rational operators on organs, vessels and nerves;
- • Demonstrate methods of anesthesia;
- • To perform the surgical technique in the surgical act (basic stages, sequence of maneuvers and their peculiarities, hemostasis in the wound, and on the way, etc.);

✓ ***At the integrational level:***

- To appreciate the importance of surgical surgery in the context of integration with other related medical disciplines;
- To approach creatively the problems of practical and fundamental medicine;
- To deduce the interrelationships between Surgical Surgery and other fundamental disciplines;
- To have skills in implementing the knowledge obtained in Surgical Surgery in clinical disciplines;
- To be apt in the evolution and objective self-evaluation of the knowledge obtained in the field;
- Be able to assimilate new knowledge and achievements in morphological disciplines.
- To make decisions in assessing the optimal methods of anesthesia (infiltrative, trunk, spinal, intraosseous, etc.);
- Determine optimal methods of hemostasis in various regions;
- To assess the optimal and critical segments of ligation of the arterial trunks in accordance with the collateral blood circulation;
- To appreciate the ways of spreading purulence (primary and secondary) by regions and rational incisions in case of suppurative diseases;
- To elaborate scientific research projects in the field of Surgical Surgery and Topographic Anatomy;

IV. CONDITIONS AND PREREQUISITES

Surgical techniques is a fundamental-applied, experimental, and clinical discipline, the study of the subject at the stage of continuous postgraduate training allows the future doctor, resident doctor and practitioner to acquire, renew and improve their knowledge, skills of surgical technique with their practical implementation. .

In order to master the discipline, it is necessary to have a thorough knowledge in the field of anatomy, embryology, basic elements of surgical techniques obtained during university, postgraduate studies and continuous training of specialists in the field.

The third year student requires the following:

- • knowledge of the language of instruction;
- • skills confirmed in science at the level of the first year (descriptive anatomy);
- • skills confirmed in science at the level of year II (clinical anatomy);
- • skills confirmed in science at the level of year III (General surgery and semiology);
- • digital skills (use of the Internet, processing of documents, electronic tables and presentations, use of graphics programs);
- • ability to communicate and work in a team;
- • qualities - tolerance, compassion, autonomy.

V. THEMATIC AND ORIENTATIVE DISTRIBUTION OF HOURS

A. Cursuri (prelegeri):

Nr. Of/h	Topic	hours
1.	Content, purpose, study methods of surgical techniques. General surgical instruments (classification, destination, technique of use). Stages of surgery.	2

2.	Surgery on the head, neck and chest. Special surgical instruments. Surgical aproaches. Conicotomy. Tracheotomy. Tracheostomy, anatomical-clinical features in children. Procedures and technique of surgical dressing of penetrating and non-penetrating wounds. Open pneumothorax plasty. Thoracotomy and costal resection.	2
3.	Operations on the organs of the peritoneal cavity. Special surgical instruments. Surgical approaches: types of laparatomy. Laparocentesis. Operations in anterolateral abdominal wall hernias. Intestinal suture. The technique of applying intestinal sutures. Operations on the organs of the supra-mesocolic and inframesocolic floor of the peritoneal cavity. Principles of surgery on the large intestine (appendectomy, resection, colostomy and artificial anus.	2
4.	Spine surgery. Special surgical instruments. Spinal canal puncture technique. Laminectomy. Spondylodesis. Surgical approaches to the kidneys, ureters (extra- and intraperitoneal). Nephrectomy. Suturing of the ureter and kidney. Pelvic organ surgery. Interventions in hemorrhoids, paraproctitis and anal fistulas.	2
5.	Bone surgery. Special surgical instruments. Surgical aproaches, osteotomy, osteosynthesis, osteoplasty, sequestrectomy. Joint operations. Amputations and disarticulations on the limbs. Surgical technique of soft tissue, vessel, nerve, bone, tendon and myoraphic surgery.	2
	Total	**10**

B. Practical lessons:

Nr. Of h	Topic	Hours
1.	1.1. Content, purpose, study methods of surgical surgery. General surgical instruments (classification, destination, technique of use). 1.2. Principles and methods of dissociation and suturing of tissues. Hemostasis. The technique of tying knots and applying sutures in successive planes. 1.3. Vessel and nerve surgery. Special surgical instruments. Projection lines, surgical aproaches. Discovery and ligation of the main arteries on the limbs. Venesection and venipuncture, places of predilection. Venectomy. Vascular suture. 1.4. Blockage of nerve trunks on the limbs. Neurorafia. Neurolysis. Plastic surgery and nerve permutation.	1
2.	2.1. Head surgery. Special surgical instruments. Primary surgery of craniocerebral wounds. Hemostasis procedures on the epicranial tissues, skull bones and sinus lesions of the dura mater. Skull trepanation (osteoplastic and decompressive). Cranioplasty. Anthrotomy. Blockage of the terminal branches of the trigeminal nerve. Rational incisions on the face. Maxillary sinus puncture. 2.2. Neck surgery. Special surgical instruments. Argumentation of superficial and deep phlegmon incisions. Vagosympathetic blockage after A.V. Vishnevsky. Neck pathways, main vessels and nerves. Subclavian vein puncture. Stimulation of the thoracic duct on the neck. Conicotomy. Tracheotomy. Tracheostomy, anatomical-clinical features in children. 2.3. Chest surgery. Operator accesses on the organs of the thoracic cavity. Rational incisions in mastitis. Puncture and drainage of the pleural cavity, puncture of the pericardial cavity and heart. Procedures and technique of surgical dressing of penetrating and non-penetrating wounds. Open pneumothorax plasty. Thoracotomy and costal resection.	2
3.	3.1. Operations on the organs of the peritoneal cavity. Special surgical instruments. Pathways: types of laparatomy. Laparocentesis. 3.2. Operations in anterolateral abdominal wall hernias, classification, operative features in congenital hernias, strangulated and slipping. Plastic surgery of the umbilical hernia (Mayo, Lexer, Sapejko), inguinal canal (Martinov, Girard-Spasokukutki, Kimbarovsky, Bassini, Postemski, Roux, Krasnobaev, Lichtenstein), femoral canal (Bassini, Rudgi, Parlavecio) in adults and children . 3.3. Intestinal suture. The technique of applying intestinal sutures (with separate and continuous threads, marginal Alberth and Schmieden, seroserous Lambert). Small bowel operations (enterostomy, suturing of intestinal wounds, resection and enteroanastomosis latero-lateral, termino-terminal and termino-lateral. 3.4. Operations on the organs of the supramesocolic and inframesocolic floor of the peritoneal cavity: gastrostomy (Witzel, Shtam-Kader and Toporover procedures), suturing wounds and stomach "perforated ulcer", stomach resection, vagotomy, gastoenterostomy. Cholecystectomy and drainage of the choledochus duct. Operations on the parenchymal organs: sutures applied to the liver, splenectomy). 3.5. Principles of surgery on the large intestine (appendectomy, resection, colostomy and artificial anus.	2
4.	4.1. Spine surgery. Special surgical instruments. Spinal canal puncture technique. Laminectomy. Spondylodesis. 4.2. Paranephral blockage technique (A. V. Vishnevsky procedure). Surgical aproaches to the kidneys, ureters (extra- and intraperitoneal). Nephrectomy. Suturing of the ureter and kidney.	2

	4.3. Pelvic organ surgery. Special surgical instruments. Intrapelvian blockade (Scholnikov-Selivanov procedure). Pudendal nerve blockage. Puncture of the bottom of the vaginal sac. Access to small pelvic organs. Hydrocele operations (Bergman-Winkelman). Catheterization (probing), bladder puncture, suprapubic cystotomy. Interventions in hemorrhoids, paraproctitis and anal fistulas.	
5.	5.1. Bone surgery. Special surgical instruments. Access routes, osteotomy, osteosynthesis, osteoplasty, sequestrectomy. 5.2. Joint operations: puncture, arthrotomy, arthrodesis, arthritis, arthrolysis, arthroplasty, resection. Pathways in resection of the knee and hip joints. 5.3. Amputations and disarticulations on limbs: basic principles, stages, classifications Method of determining the length of flaps in flap amputations. Conical-circular amputation on the arm and thigh in the trisectional after N. I. Pirogov. 5.4. The technique of surgical dressing of soft tissues, vessels, nerves, bones, tendon and myoraphy.	2
	Examen	
	Total	1 **10**

VI. REFERENCE OBJECTIVES AND UNITS OF CONTENT

Objective	Units of content
Chapter 1. "Operative surgery of limb "	
•Define the boundaries of the regions •To define the projection lines of the vascular-nervous packages •Possess the appreciation of limits by using landmarks •To argue the importance of fascias and cellular spaces and their role in the propagation of purulent processes •To know the collateral circulations and to argue differences between the optimal and critical ones •To know and possess notions of surgical techniques on the limbs •Apply knowledge to other disciplines •Formulate conclusions	Region - territorial unit on the surface of the body with its stratigraphic features and spatial relationships between anatomical formations. Landmark - palpable unit within a region to which the position of a fixed or mobile body refers; sign or object that facilitates orientation or allows recognition of a region. Projection - representation of an anatomical formation in space, an area, etc. on a straight line, on a plane. Surgery - surgical therapeutic action performed on a diseased organ or tissue PPCP - primary surgical treatment of wounds
Chapter 2. "Surgery of the head, neck and thorax"	
•Define the boundaries of the regions •To define the projection lines of the vascular-nervous packages •Possess the appreciation of limits by using landmarks •To argue the importance of fascias and cellular spaces and their role in the propagation of purulent processes •To know the collateral circulations and to argue differences between the optimal and critical ones •To know and possess notions of surgical techniques on the head and neck regions •Apply knowledge to other disciplines •Formulate conclusions	Region - territorial unit on the surface of the body with its stratigraphic features and spatial relationships between anatomical formations. Landmark - palpable unit within a region to which the position of a fixed or mobile body refers; sign or object that facilitates orientation or allows recognition of a region. Projection - representation of an anatomical formation in space, an area, etc. on a straight line, on a plane. Surgery - surgical therapeutic action performed on a diseased organ or tissue Tracheostomy - opening of the trachea to allow direct breathing through the trachea. Thoracotomy - opening of the thoracic cavity. Pleurostomy - the application of a fistula in the chest cavity. PPCP - primary surgical treatment of wounds

Objective	Units of content
Chapter 3. "Surgery of the abdominal wall and abdominal cavity"	

Obiective	Units of content
• Define the boundaries of the regions • Define the projection lines of the organs • Possess the appreciation of limits by using landmarks • To argue the importance of fascia and cellular spaces and their role in the propagation of purulent processes on the abdominal wall • To know topographical differences between constitutional types • To know and possess notions of surgical techniques on the regions of the abdominal wall and the organs of the abdominal cavity • Define the notion of hernias • Apply knowledge to other disciplines • Formulate conclusions	Region - territorial unit on the surface of the body with its stratigraphic features and spatial relationships between anatomical formations. Landmark - palpable unit within a region to which the position of a fixed or mobile body refers; sign or object that facilitates orientation or allows recognition of a region. Projection - representation of an anatomical formation in space, an area, etc. on a straight line, on a plane. Skeletotopy - the projection of the organ on the skeleton Holototopy - projection by region Symptom - the relationship with neighboring structures. Surgery - surgical therapeutic action performed on a diseased organ or tissue Hernia - total or partial prolapse of the parietal peritoneum Herniotomy - stage of dissection of henria Hernioplasty - elimination of the hernia defect
Chapter 4. "Clinical anatomy of the lumbar region, retroperitoneal space and pelvis"	
•Define the boundaries of the regions •Define the projection lines of the organs •Possess the appreciation of limits by using landmarks •To argue the importance of fascia and cellular spaces and their role in the propagation of purulent processes in the retroperitoneal space and pelvis •To know topographical differences between constitutional types •To know and possess notions of surgical techniques on the regions of the abdominal wall and the organs of the abdominal cavity •Define the notion of hernias •Apply knowledge to other disciplines •Formulate conclusions	Region - territorial unit on the surface of the body with its stratigraphic features and spatial relationships between anatomical formations. Landmark - palpable unit within a region to which the position of a fixed or mobile body refers; sign or object that facilitates orientation or allows recognition of a region. Projection - representation of an anatomical formation in space, an area, etc. on a straight line, on a plane. Skeletotopy - the projection of the organ on the skeleton Holototopy - projection by region Symptom - the relationship with neighboring structures. Surgery - surgical therapeutic action performed on a diseased organ or tissue
Chapter 5. "Surgical anatomy and surgical techniques on limbs"	
• Define the boundaries of the regions • To define the projection lines of the vascular-nervous packages • Possess the appreciation of limits by using landmarks • To argue the importance of fascias and cellular spaces and their role in the propagation of purulent processes • To know the collateral circulations and to argue differences between the optimal and critical ones • To know and possess notions of surgical techniques on the limbs • Apply knowledge to other disciplines • Formulate conclusions	Region - territorial unit on the surface of the body with its stratigraphic features and spatial relationships between anatomical formations. Landmark - palpable unit within a region to which the position of a fixed or mobile body refers; sign or object that facilitates orientation or allows recognition of a region. Projection - representation of an anatomical formation in space, an area, etc. on a straight line, on a plane. Surgery - surgical therapeutic action performed on a diseased organ or tissue.

VII. PROFESSIONAL COMPETENCES (SPECIFIC (CS) AND TRANSVERSAL (CT)) AND STUDY PURPOSES

✓ **PROFESSIONAL SKILLS:**

- Knowledge, understanding and use of language specific to clinical anatomy;
- Knowing and understanding the stratigraphic organization of different regions, explaining the principles of their specialization and interaction;
- Explaining and interpreting the spread of purulent processes between regions.
- Knowledge of the principles of basic surgical techniques and understanding the interpretation of their performance.
- Modeling the situations of installation of collateral circulations.

- Solving situation problems and formulating conclusions.
- Comparison of different regions in stratigraphic plan.
- Analysis of different circulatory situations that lead to pathological conditions.

✓ **TRANSVERSAL SKILLS:**

- Improving the capacity for decision-making autonomy;
- Formation of personal attitude
- Ability to interact socially, work in groups with different roles
- Framing in interdisciplinary projects, extracurricular activities,
- Improving dissection skills
- Improving digital skills
- Development of different learning-to-learn techniques
- Selection of digital materials, critical analysis and formulation of conclusions.
- Presentation of individual scientific projects.

THE PURPOSES OF THE DISCIPLINE

- To know the particularities of the stratigraphic organization of the regions during the surgical stages of dissection;
- To know the particularities of the organization of the regions and the interrelations with the neighboring ones;
- To know the basics and the practical role of topographic anatomy and surgical surgery in the surgical disciplines.
- To be able to evaluate the place and role of surgical techniques in the preclinical and clinical training of the medical student;
- To be competent to use the knowledge and methodology of surgical techniques in the ability to explain the nature of physiological and / or pathological processes;
- To be able to deduce the possible causes of failure in the interpretation of surgical techniques;
- To be able to implement the knowledge gained in the research activity;
- To be competent to use critically and confidently the scientific information obtained using new information and communication technologies.

VIII. THE INDIVIDUAL WORK OF THE STUDENT

Nr.	Expected product	Implementation strategies	Evaluation criterias	Deadline
	Working with information sources:	Read the lecture or textbook material on the topic carefully. Read the questions on the topic, which require reflection on the topic. To be acquainted with the list of additional information sources on the topic. Select the source of additional information on the topic. Read the whole text carefully and write the essential content. Formulation of generalizations and conclusions regarding the importance of the topic / subject.	Ability to extract the essential; interpretive skills; workload	During the semester
	Working with the practical lesson book:	Transcribe the various tasks in the practical lesson book with solving them by associating the drawings with the explicit text. Analyze the information in the pictures on the topic in the lecture and textbook. Solving tasks consecutively. Formulation of conclusions at the end of each lesson. Checking the finalities of the respective lesson and appreciating their achievement. Select additional information using email addresses and additional bibliography.	Workload, problem solving, ability to draw conclusions	During the semester
	Applying different learning techniques	The association of theoretical training with the development of dissection skills, learning of surgical nodes, participation in the work-sucking within the department for the improvement of medical-surgical skills	The volume of work, the degree of penetration in the essence of different subjects, the level of scientific argumentation,	During the semester

Nr.	Expected product	Implementation strategies	Evaluation criterias	Deadline
			the quality of the conclusions, elements of creativity, the demonstration of the understanding of the problem, the formation of the personal attitude	
	Lucrul cu materiale on-line	Self-assessment by viewing online sources, studying online materials on the department's SITE, expressing one's opinions through forum and chat	Number and duration of SITE entries, self-assessment results	During the semester
	Pregătirea și susținerea prezentărilor /portofoliilor:	Selecting the research topic, establishing the research plan, establishing the deadlines. Establishing the components of the PowerPoint project / presentation - theme, purpose, results, conclusions, practical applications, bibliography. Colleague reviews. Teacher reviews	The volume of work, the degree of penetration in the essence of the project theme, the level of scientific argumentation, the quality of conclusions, elements of creativity, the formation of personal attitude, coherence of exposition and scientific correctness, graphic presentation, presentation	During the semester

IX. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-EVALUATION

- ***•Teaching methods used***

The optional module Surgical Techniques is taught in the classic way: with lectures and practical papers. Lectures are read by course holders. In practical work, students study / prepare modeling procedures on organocomplexes and fixed corpses, drawings of successive sections through the human body at different levels, watching movies (including surgical techniques), surgery on animals (rabbits).

It is useful to implement and insist on the elaboration of projects distributed according to the thematic plan. In each semester, the department carries out the activity of Basik Surgical Skils (2 editions per semester) where each participant can perfect the minimum skills of surgical technique associated with theoretical presentations.

When teaching the optional discipline of Surgical Techniques, different teaching methods and procedures are used, oriented towards the efficient acquisition and achievement of the objectives of the teaching process. In the theoretical lessons, along with the traditional methods (lesson-exposition, lesson-conversation, lesson of synthesis) modern methods are also used (lesson-debate, lesson-conference, problematic lesson). In the practical works are used forms of individual activity, frontal, in group, virtual laboratory works. For the deeper acquisition of the material, different semiotic systems (scientific language, graphic and computer language) and teaching materials are used. In the extracurricular lessons and activities are used Information Technology Communication - PowerPoint presentations, online lessons.

- ***•Recommended learning methods***
  - **Observation** - Identify the characteristic elements of some biological structures or phenomena, describe these elements or phenomena.
  - **Analysis** - Imaginary decomposition of the whole into component parts. Highlighting the essentials. Studying each element as part of the whole.
  - **Scheme / figure analysis** - Select the necessary information. Recognition based on the knowledge and information selected structures indicated in the diagram, drawing. Analysis of the functions / role of recognized structures.
  - **Comparison** - Analysis of the first object / process in a group and determination of its essential features. Analysis of the second object / process and establishment of its essential features. Comparing objects / processes and highlighting common features. Comparing objects / processes and determining differences. Establishing the criteria for distinction. Formulation of conclusions.
  - **Classification** - Identifying the structures / processes to be classified. Determining the criteria on which the classification is to be made. Distribution of structures / processes by groups according to the established criteria.

- **Elaboration of the scheme** - Selection of the elements, which must appear in the scheme. Play the chosen elements through different symbols / colors and indicate the relationships between them. Formulate an appropriate title and the legend of the symbols used.
- **Modeling** - Identifying and selecting the elements needed to model the phenomenon. Imagination (graphic, schematic) of the studied phenomenon. Realization of the respective phenomenon using the elaborated model. Formulation of conclusions, deduced from arguments or findings.
- **The experiment** - Formulation of a hypothesis, starting from known facts, regarding the studied process / phenomenon. Verification of the hypothesis by carrying out the processes / phenomena studied in laboratory conditions. Formulation of conclusions, deduced from arguments or findings.

- • ***Applied teaching strategies / technologies (specific to the discipline);***

Brainstorming, Multi-voting; "The round table"; "Group interview"; "Case study"; "Creative controversy"; "Focus group technique", "Portfolio".

Virtual practical work

- ***Assessment methods*** *(including how to calculate the final grade).*

✓ **Current:** frontal and / or individual control through

- (a) application of docimological tests,
- (b) problem solving / exercises,
- (c) case study analysis
- (d) performing role-plays on the topics discussed.
- (e) control works

✓ **Final:** colocvium

The final mark will consist of the average marks of those obtained during the module (part 0.5), the second test is the speech on the topics heard (part 0.5).

Average mark and marks of all stages of the final examination (speech on the topics heard) - all will be expressed in numbers according to the grading scale (according to the table), and the final mark obtained will be expressed by the grade **admitted / failed** with passing the result in the notebook

Scoring scale

INTERMEDIATE MARKS GRID (annual average, exam marks)	National Scoring System	Echivalent ECTS
1,00-3,00	2	F
3,01-4,99	4	FX
5,00	5	E
5,01-5,50	5,5	
5,51-6,0	6	
6,01-6,50	6,5	D
6,51-7,00	7	
7,01-7,50	7,5	C
7,51-8,00	8	
8,01-8,50	8,5	B
8,51-8,00	9	
9,01-9,50	9,5	A
9,51-10,0	10	

Failure to appear for the examination without good reason is recorded as "absent" and is equivalent to a grade of 0 (zero).-The student is entitled to 2 repeated examinations of the non-passed exam.

X. RECOMMENDED BIBILIOGRAPHY

A. Obligatory:

1. Courses material.
2. The didactic materials elaborated by the department
3. Ernst W, April //Clinical Anatomy//, New York, 1997.
4. Frank H. Netter, M.D. Human Anatomy. Third Edition. 2003.
5. Agur, Anne M.R.; Dalley, Arthur F. Title: Grant's Atlas of Anatomy, 12th Edition Copyright B©2009 Lippincott Williams & Wilkins
6. Faller, The Human Body © 2004 Thieme
7. Library of the department.
8. Electronic sources in volume of more than 700 units.
9. Computerized room with virtual applications for all regions and themes included.
10. Tests.