



## CD 8.5.1 DISCIPLINE CURRICULUM

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### FACULTY MEDICINE NR.2

### DISCIPLINE CURRICULUM 0912.1 MEDICINE

### DEPARTMENT SEMIOTICS OF GENERAL SURGERY NR.3

APPROVED

at the meeting of the Commission for Quality Assurance and Evaluation of the Curriculum Faculty Medicine  
Minutes No. 7 of 6.03.2018

Chairman, PhD, MD

Suman Serghei

(academic degree, scientific title)

APPROVED

at the Council meeting of the Faculty Medicine II  
Minutes No. 4 of 20.03.2018  
Dean of Faculty

(academic degree, scientific title)

Name, surname

(signature)

APPROVED

at the meeting of the chair **Semiotics of General Surgery**  
**No.3**

Minutes No. 9 of 15 of January 2018

Head of chair PhD, professor

Evghenii Gutu

## CURRICULUM

### DISCIPLINE GENERAL SURGERY AND SEMIOLOGY

**Integrated studies**

Type of course: **Compulsory Course**

Chisinau, 2017



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### I. INTRODUCTION

- General presentation of the discipline: place and role of the discipline in the formation of the specific competences of the professional / specialty training program

The discipline of general surgery and semiology is the compulsory course, which the students study on the III-rd year of University in the Cycle I. The aim of the discipline is studying of main elements of asepsis and antisepsis in surgery, study of basic surgical pathologic processes and disorders of homeostasis, and semiology of the inflammatory, ischemic, hemorrhagic, necrotic, and traumatic syndromes. Studying and learning of practical maneuvers in desmurgy, surgical processing and suture placing on skin wound, venous and arterial line placing, urinary bladder catheterization, gastric lavage, thoracentesis and tube thoracostomy, and paracentesis. The knowledge obtained at our discipline will serve for students as background for understanding of clinical disciplines in the following years and in their professionally activities.

#### *Objectives obtained in teaching the discipline*

- To develop the knowledge of asepsis and antisepsis in surgery in order to prevent and treat surgical infections. Knowledge of regulations and orders upon the compliance of rules in asepsis;
  - To promote ethic principles in health care of surgical patients;
  - To assimilate the basic rules of blood transfusion, as well as indications for transfusion of separate components of blood and blood substitutes;
  - To develop the knowledge of wound healing and its application in the treatment of common purulent processes of the soft tissues;
  - To develop basic knowledge in understanding the surgical syndromes: inflammatory, ischemic, necrotic, hemorrhagic, traumatic, tumoral, and their semiology;
  - To acquire practical skills in preparing of patients for surgery, minor surgical maneuvers and management of patients in the postoperative period;
  - To develop knowledge in examination of a surgical patient with the use of both physical inspection and a number of additional noninvasive and invasive methods.
- Language (s) of the course: Romanian, English, Russian
  - Beneficiaries: students of the III-rd year, faculty medicine nr.1 and nr.2.

### I. MANAGEMENT OF THE DISCIPLINE

|                                       |               |                                      |              |
|---------------------------------------|---------------|--------------------------------------|--------------|
| Code of discipline                    |               | <b>S.05.O.043 / S.06.O.050</b>       |              |
| Name of the discipline                |               | <b>General Surgery and Semiology</b> |              |
| Person(s) in charge of the discipline |               | <b>Professor, PhD Evghenii Gutu</b>  |              |
| Year                                  | <b>III-rd</b> | Semester/Semesters                   | <b>V, VI</b> |
| Total number of hours, including:     |               | <b>90/90</b>                         |              |
| Lectures                              | <b>17/34</b>  | Practical/laboratory hours           | <b>25/25</b> |
| Seminars                              | <b>26/26</b>  | Self-training                        | <b>22/5</b>  |
| Form of assessment                    | <b>C/E</b>    | Number of credits                    | <b>3/3</b>   |

### II. TRAINING AIMS WITHIN THE DISCIPLINE

At the end of the discipline study, the student will be able to:

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

- To assimilate theoretical bases of asepsis and antisepsis in prevention and treatment of surgical infections;



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- To know the bases of bleeding, mechanisms of compensatory response to hemorrhage, bleeding semiology, physiological phases of spontaneous hemostasis, methods of temporary and definitive artificial hemostasis, DIC syndrome;
- To know theoretical basis of blood transfusion, blood grouping and Rh-factor, blood substitutes and components, indications and contraindications to blood transfusion, complications that occur in blood transfusion and measures of their prevention and treatment;
- To know basic principles of local anesthesia, definition, classification, technique of local infiltrative anesthesia;
- To know the bases of preparing the patient to surgery, features of the preoperative and postoperative period, the main types of surgical procedures;
- To know theoretical bases of wound classification, wound healing process, wound semiology and methods of wounds treatment;
- To assimilate the theoretical basis of desmurgy;
- To know semiology of skull and brain trauma, thoracic, abdominal and polytrauma, the concept of an isolated, multiple, associated and combined trauma;
- To know semiology of soft tissue inflammatory processes and generalized infection.
- To know the semiology of surgical diseases of the head and neck region;
- To know the semiology of surgical diseases and deformities of the chest;
- To know the semiology of inflammatory, dishormonal and tumoral disorders of the breast;
- To know the semiology of conditions which may cause acute abdomen;
- To know the semiology of inflammatory disorders and traumatic injuries of the musculoskeletal system;
- To know the semiology of surgical disorders of the peripheral venous and arterial vascular system;
- To understand definition, forms and semiology of diabetic foot, to assimilate knowledge concerning the principles of prophylaxis and treatment of condition;
- To have theoretical knowledge about semiology of nutritional disturbances, principles of enteral and parenteral feeding;
- To know the principles and terminology of transplantology and its theoretical basis.

### **At the level of application:**

- To perform clinical examination of a patient with surgical pathology and to be able to describe the findings into academic history of diseases;
- To perform preparation of hands and operative field for surgery and another invasive medical procedures;
- To be able to perform infiltrative local anesthesia;
- To make assessment of hemodynamic parameters in bleeding;
- To apply techniques of temporary and definitive artificial hemostasis;
- To perform blood transfusions, compatibility tests, monitoring during and after procedure and its protocol;
- To make intramuscular, subcutaneous, intracutaneous injections;
- To make puncture and catheterization of venous and arterial vessels;
- To make urethral catheterization in men and women;
- To install the gastric and esophageal tubes;
- To provide first aid of traumatized patient;
- To make primary debridement of surgical wound;
- To select the antiseptics, ointment and other medications for local treatment in different phases of wound healing process;



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- To perform wound suturing and surgical knot tying;
- To apply the triangular, cravat, rolling and elastic bandages at various parts of the body;
- To determinate muscular tenderness, peritoneal signs and other symptoms of acute abdomen;
- To assess the pulsation of peripheral arteries and another symptoms of arterial insufficiency, and to be able to interpret obtained results;
- To interpret the functional probes in chronic venous insufficiency of lower limbs;
- To assess the nutritional status using anthropometrical methods;
- To perform history taking, physical examination of patient and schedule the patient's history.

### At the level of integration:

- To integrate the acquired concepts in fundamental knowledge on anatomy, histology, physiology and pathological physiology, biochemistry etc;
- To integrate acquired knowledge in their further practical application;
- To integrate acquired theoretical knowledge with internal diseases semiology;
- To use principles in diagnosis of syndromes: inflammatory, haemorrhagic, necrotic, ischemic, occlusive and traumatic.

### III. PROVISIONAL TERMS AND CONDITIONS

The students of the III-rd years require the followings:

- To know the language of teaching;
- To have a knowledge of previous discipline from the I and II years (anatomy, biochemistry, physiology, morphopathology, pathophysiology);
- To have a competence of IT (to be able to use an internet, processing of document, e-tables and e-presentations);
- To be able for communication and team working;
- To have quality of tolerance, compassion, autonomy.

### IV. THEMES AND ESTIMATE DISTRIBUTION OF HOURS

*Lectures, practical hours / laboratory hours /seminars and self-training*

| No.<br>d/o | THEME  | Number of hours |                     |                   |
|------------|--|-----------------|---------------------|-------------------|
|            |  | Lecture<br>s    | Practica<br>l hours | Self-<br>training |
| 1.         | History of surgery   | 1               | 3                   |                   |
| 2.         | Antisepsis: definition, history, and classification.   | 1               | 3                   | 2                 |
| 3.         | Asepsis. Prevention of airborne, contact, and implantation infection.                                | 1               | 6                   | 2                 |
| 4.         | Local anesthesia.  | 1               | 3                   | 2                 |
| 5.         | Bleeding: classification, clinical manifestations, and diagnosis                                     | 2               | 3                   | 2                 |
| 6.         | Blood coagulation and hemostasis.  | 2               | 3                   | 2                 |
| 7.         | Blood transfusion: indications and contraindications, methods and kinds.                             | 2               | 3                   |                   |
| 8.         | Complications of blood transfusion.  | 2               | 3                   | 2                 |
| 9.         | Surgical intervention: definition, classification. Preoperative period and postoperative management. | 2               | 3                   | 2                 |
| 10.        | Surgical instruments. Sutures, knots and basic surgical skills.                                      | 1               | 3                   | 2                 |



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| No. d/o      | THEME  | Number of hours |                 |               |
|--------------|--|-----------------|-----------------|---------------|
|              |  | Lectures        | Practical hours | Self-training |
| 11.          | Desmurgy: concept, types of bandages. General rules of dressing technique and bandaging. | 1               | 3               | 2             |
| 12.          | Semiology of nutritional disturbances. Parenteral and enteral nutrition.                 | 1               | 3               | 2             |
| 13.          | Wounds: classification, clinical manifestations.   | 2               | 3               |               |
| 14.          | Wound healing. Treatment of wounds.  | 2               | 3               |               |
| 15.          | Catheters and tubes insertion. Minor invasive surgical manipulations (part I)            | 1               | 3               | 2             |
| 16.          | Catheters and tubes insertion. Minor invasive surgical manipulations (part II)           | 1               | 3               | 1             |
| 17.          | Surgical infection.  | 2               | 3               |               |
| 18.          | Semiology of purulent processes of the skin and subcutaneous tissues.                    | 2               | 3               |               |
| 19.          | Semiology of purulent processes of the finger and hand.                                  | 2               | 3               |               |
| 20.          | Semiology of inflammatory diseases and traumatic injuries of the bones and joints.       | 2               | 3               |               |
| 21.          | Anaerobe infection of soft tissue.   | 2               | 3               |               |
| 22.          | Surgical sepsis.   | 2               | 3               |               |
| 23.          | Surgical semiology. Diagnostic process. History of disease.                              | 2               | 3               |               |
| 24.          | Semiology of surgical diseases of the head and neck.                                     | 2               | 3               |               |
| 25.          | Semiology of the thorax and spine deformities.   | 2               | 3               |               |
| 26.          | Semiology of breast diseases.  | 2               | 3               |               |
| 27.          | Semiology of acute abdomen (part I).   | 1               | 3               | 1             |
| 28.          | Semiology of acute abdomen (part II).  | 1               | 3               | 1             |
| 29.          | Semiology of peripheral arterial diseases. Necrosis, gangrene, and trophic ulcers.       | 1               | 3               | 1             |
| 30.          | Semiology of peripheral venous diseases.   | 2               | 3               |               |
| 31.          | Surgical aspects of diabetic foot  | 2               | 3               |               |
| 32.          | Basics of transplantology.   | 1               | 3               | 1             |
|              |  | <b>51</b>       | <b>102</b>      | <b>27</b>     |
| <b>Total</b> |  | <b>180</b>      |                 |               |

### V. OBJECTIVES AND CONTENT UNITS

| Objectives  | Content units |
|---|---------------|
| <b>Theme 1. History of surgery and introduction in surgical semiology</b> |               |





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| <b>Objectives</b>  | <b>Content units</b>  |
|--|---|
| <ul style="list-style-type: none"> <li>• To define the definition of semiology</li> <li>• To know the stages of surgery study in Moldova</li> <li>• To demonstrate the local status of the diseases</li> <li>• To apply the clinical methods of examinations</li> <li>• To integrate the knowledge from previous disciplines in clinical examination of surgical patient</li> </ul>          | 1 The main periods of formation and development of surgery.   |
|  | 2 Surgery in Moldova. The clinics and departments of surgery in Moldova. Stages of study surgery in Moldova. The principles of surgical assistance in Moldova.  |
|  | 3 Surgical semiology: definition, main object and aims. Concept of symptom and syndrome. Assessment of complaints and anamnesis of surgical patient. Peculiarities of examination of surgical patient. Status localis. Diagnostic process and its basic phases. Role of instrumental methods and laboratory tests in diagnosis of surgical diseases.  |
| <b>Theme 2. Antisepsis</b>   |   |
| <ul style="list-style-type: none"> <li>• To define the definition of antisepsis, asepsis</li> <li>• To know the classification of antisepsis and asepsis</li> <li>• To demonstrate the ways of transmission of infections and its prevention</li> <li>• To apply methods of prevention of contaminations</li> <li>• To integrate the obtained knowledge with clinical disciplines</li> </ul> | 1 Antisepsis: definition and classification. History of antisepsis: empiric period, antisepsis of XIX-th century, Lister's antisepsis, contemporary surgical antisepsis.<br>2 Mechanical antisepsis: concept, description. Methods of mechanical antisepsis: wound toilet, primary and secondary surgical processing of wound.<br>3 Physical antisepsis: concept, description, main methods. Mechanism of antiseptic action of hygroscopic dressings material (gauze) and hypertonic saline solution. Methods of surgical drainage: passive, active and flow-irrigative. Additional methods of physical antisepsis: drying, processing with water jet, ultrasound, high-energy (surgical) laser, ultra-violet rays.<br>4 Chemical antisepsis: concept, description. Main groups of antiseptics: haloids, salts of heavy metals, spirits, aldehydes, phenols, dyes, acids, alkalis, oxidants, detergents, derivates of nitrofurane, derivates of 8-oxiquinoline, derivates of quinoxaline, derivates of nitromidazole, sulfonamide. Vegetable antiseptics. Concept of antiseptics and disinfectants.<br>5 Biological antisepsis: concept, description. Biological antiseptics with direct (antibiotics, protein-degrading enzymes, bacteriophages, medical serums) and indirect (immunostimulating substances, vaccines, anatoxins, physical methods stimulate nonspecific resistance) action. Antibiotics: concept, groups. Complications of treatment with antibiotics. Principles of rational treatment with antibiotics. |
| <b>Theme 3. Asepsis. Prevention of surgical site infection</b>   |   |
| <ul style="list-style-type: none"> <li>• To define the definition of antisepsis, asepsis</li> <li>• To know the classification of antisepsis and asepsis</li> <li>• To demonstrate the ways of transmission of infections and its prevention</li> <li>• To apply methods of prevention of contaminations</li> </ul>  | 1 Nosocomial infection: definition, the most common types, clinical manifestations. Surgical site infection: definition, classification, bacteriology.<br>2 Asepsis: definition and objectives. Exogenous and endogenous infection. Sources and ways of exogenous contamination (airborne spread, contact spread, contamination by implantation of infected materials).<br>3 Prevention of airborne infection in surgery. Planning of surgical department. Personnel medical clothes in surgical department. Rules of activity in surgical department. Sanitary regulations for planning of operating room. Types of cleaning in the operating room.<br>4 Prevention of contact infection in surgery. Sterilization and disinfection. Rules of activity for "scrubbed" and "unscrubbed" personnel in the operating room. Surgeons' hands disinfection prior to surgical intervention: classic and novel methods. Steps of surgeon's hands scrub for surgery. Rules of dressing of sterile surgical gown and sterile surgical gloves. Rules of skin decontamination of operating field. Delimitation   |



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|---|--|
| <ul style="list-style-type: none"> <li>• To integrate the obtained knowledge with clinical disciplines</li> </ul>   | <p>of operating field with sterile surgical drapes. General principles of sterilization. Physical methods of sterilization: flame sterilization and boiling, sterilization by heat steam under pressure, dry-heat sterilization, sterilization by ionizing radiation. Chemical methods of sterilization: gas sterilization and sterilization in antiseptic solutions. Methods of sterilization of surgical drapes and bandages in Schimmelbusch containers: autoclaving under pressure, sterilization by flowing steam. Regime of sterilization in the autoclave. Decontamination, cleaning and sterilization of surgical instruments. Regime of surgical instruments sterilization by dry-heat. Sterilization of optical instruments used in surgery. Quality control of sterilization of surgical items: direct (bacteriologic) and indirect methods.</p> <p>5 Definition, sources and features of contamination by implantation of infected materials in surgery. Sterilization of implantable items.</p> <p>Common sources of endogenous infection. Antibacterial prophylaxis: indications for various types of surgical procedures, drug selection, rules of administration.</p>  |
| <b>Theme 4. Local anesthesia</b>  |  |
| <ul style="list-style-type: none"> <li>• To define the definition of local anesthesia.</li> <li>• To know the classification of local anesthesia.</li> <li>• To demonstrate the technics of local anesthesia.</li> <li>• To apply different methods of local anesthesia.</li> <li>• To integrate the different surgical procedures under the local anesthesia.</li> </ul> | <p>1 Concept of local anesthesia. Local anesthetics: mechanism of action, classification (ethers and amides). Methods of local anesthesia: terminal, infiltration, conduction, epidural and spinal. Indications and contraindications for various types of local anesthesia. Infiltration anesthesia by method of A. Vishnevsky: principles and technique.</p> <p>2 Epidural and spinal anesthesia: technique, risks and complications. Novocain blockages: definition, indications and technique. Main types of Novocain blockages: vagosympathetic, intercostal, paravertebral, paranephral, pelvic, mesenteric blockage and blockage of round ligament of liver.</p>  |
| <b>Theme 5. Semiology of hemorrhage</b>   |  |
| <ul style="list-style-type: none"> <li>• To define the definition of bleeding</li> <li>• To know the classification of bleeding</li> <li>• To demonstrate the adaptive mechanism against the bleeding</li> <li>• To apply methods artificial hemostasis</li> <li>• To integrate the knowledge from different disciplines in describing of DIC-syndrome</li> </ul>         | <p>1 Hemorrhage: definition, clinical importance. Classification of bleeding (anatomical, by mechanism of occurrence, by site of the bleeding, by time of development, by evolution-intensity, and by severity of blood loss). Definition of massive bleeding. Physiological mechanisms of compensation in hemorrhage: increase of venous tone, tachycardia, “centralization of circulation”, hyperventilation, hemodilution, renal mechanism with oliguria, release of red blood cells from the “depot”. Pathological mechanisms of decompensation in hemorrhage: myocardial ischemia, debilitation of sympathetic nervous system, decentralization of circulation, brain ischemia, disturbances of metabolism and exchange of gases, systemic inflammatory response, modification of microcirculation of white blood cells and platelets.</p> <p>2 General symptoms of bleeding. Semiology of internal intraluminal bleeding. Semiology of internal intracavitary bleeding. Semiology of internal intratissular bleeding. Petechia, purpura, ecchymosis, hematoma. Methods of laboratory and instrumental diagnostics of bleeding. Determination of blood loss volume: Allgöwer shock index, basing on red blood cells count, gravimetric method, Gross formula.</p> |
| <b>Theme 6. Hemostasis</b>  |  |
| <ul style="list-style-type: none"> <li>• To define the</li> </ul>   | <p>1 Physiologic (spontaneous) hemostasis. Main phases of blood coagulation:</p>   |



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|--|---|
| <p>definition of bleeding</p> <ul style="list-style-type: none"> <li>• To know the classification of bleeding</li> <li>• To demonstrate the adaptive mechanism against the bleeding</li> <li>• To apply methods artificial hemostasis</li> <li>• To integrate the knowledge from different disciplines in describing of DIC-syndrome</li> </ul>            | <p>vasoconstriction or vascular phase of hemostasis, platelet aggregation or cellular phase of hemostasis, activation of coagulation cascade or plasmatic phase of hemostasis. Intrinsic, extrinsic and common pathway of hemostasis. Mechanisms for limitation of local coagulation process.</p> <p>2 Syndrome of disseminated intravascular coagulation (DIC): etiology and pathogenesis. Semiology of DIC depending on the phase of disease. Laboratory diagnosis and principles of treatment.</p> <p>Medical treatment for major bleeding. Surgical hemostasis. Methods of temporary surgical hemostasis. Principles of hemostatic tourniquet application. Mechanical, physical, chemical and biological methods of definitive surgical hemostasis.</p>   |
| <b>Theme 7. Blood transfusion</b>  |   |
| <ul style="list-style-type: none"> <li>• To define the definition of blood group</li> <li>• To know the antigenic structure of blood</li> <li>• To demonstrate the different type of agglutinations</li> <li>• To apply different methods of blood group determination</li> <li>• To integrate the knowledge from immunology in hem transfusion</li> </ul> | <p>1 Definition of transfusiology and blood transfusion. Historical evolution of knowledge about blood groups, Rh-factor and blood transfusion. Main blood antigen systems: cellular (erythrocytic, leucocytic, thrombocytic), plasmatic. The role of blood antigen systems in medical practice. Blood group affiliation: blood groups according to system AB0. Blood agglutination. Types of agglutination. Reaction of agglutination and its utility for blood transfusion. Ottenberg's rule. Methods of determination of blood groups with standard serums and monoclonal antibodies. Possible mistakes during blood groups determination. Rh-factor and its role in blood transfusion. The methods of determination of Rh-factor.</p> <p>2 Methods of blood transfusion: direct and indirect transfusion of donor blood, transfusion of autologous blood (autotransfusion, acute preoperative normovolemic haemodilution, reinfusion). Measures to reduce the number of blood transfusions.</p> <p>3 Blood components: packed red blood cells, platelet concentrate, granulocyte concentrate, and plasma. Composition, methods of preparation and storage, indications and contraindications to the transfusion of blood components. Plasma derivatives: albumin, cryoprecipitate, concentrate of factor VIII, thrombin, immunoglobulin. Indications for administration.</p> <p>4 Blood substitutes: classification (crystalloid and colloidal solutions), characteristics, advantages and disadvantages, indications for administration.</p> <p>5 Indications and contraindications for blood transfusion. Procedure of blood transfusion: determination of indications, information of the patient and obtaining the patient's consent, determination of AB0 and Rh blood group of the patient, determination the integrity of container and evaluation the suitability of blood, individual compatibility test, biological test, blood transfusion technique, assessment of patient's condition during and after blood transfusion. Protocol of blood transfusion.</p> <p>6 Classification of posttransfusion reactions and complications. The acute non-immune posttransfusion reactions and complications: acute sepsis and endotoxic shock; hypothermia; pyrogenic reactions; citrate toxicity and hyperpotassemia; air embolism, thromboembolism; transfusion associated circulatory overload (TACO); massive transfusion syndrome. The acute immune posttransfusion reactions and complications: acute hemolytic transfusion reactions and transfusion (hemolytic) shock; non-hemolytic febrile antigenic reactions; allergic and anaphylactic reactions; transfusion-related acute lung injury (TRALI syndrome). Semiology, prophylaxis and treatment. Mild, moderate and severe posttransfusion reactions. Transfusion of</p> |





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|  | contaminated blood and late infectious complications of blood transfusion: prevention and treatment. The main principles of modern blood transfusion.   |
| <b>Theme 8. Surgical intervention</b>  |   |
| <ul style="list-style-type: none"> <li>• To define the definition of pre- and post-operative period, operation</li> <li>• To know the classification of pre- and postoperative period</li> <li>• To demonstrate the methods of decreasing of surgical risk</li> <li>• To apply methods of preparing the patient for surgery</li> <li>• To integrate the managements of patient in post-operative period</li> </ul> | <p>1 Preoperative period: main purposes and missions. Diagnostic phase of preoperative period and its components: establishment of correct diagnosis, evaluation of main organs and systems status. Assessment of surgical risk. Preparing of patient for surgery: psychological, general and special (preventive preparation of operative field, preparation of gastro-intestinal tract, evacuation of urinary bladder, premedication). Preoperative conclusion.</p> <p>2 Surgical intervention: definition. Classification of surgical interventions in connection with urgency of performance, purpose of performance, stage (single-stage operations, multi-stage operations and reoperations), volume (simultaneous operations, combined operations), range of contamination. Peculiarities of laparoscopic and endoscopic operations. Basic steps of surgical intervention: surgical approach, surgical technique, end of operation. Possible intraoperative complications. Definition of iatrogenic injury. Protocol of surgical intervention.</p> <p>3 Postoperative period: definition, main clinical stages. Physiological phases of postoperative period: catabolic, transitive, anabolic. Postoperative management of surgical patient. Possible complications in postoperative period.</p> |
| <b>Theme 9. Surgical instruments. Sutures and knots</b>  |   |
| <ul style="list-style-type: none"> <li>• To define the general concept of surgical instruments</li> <li>• To know the classification of surgical instruments</li> <li>• To demonstrate the ability of using of surgical instruments</li> <li>• To apply different methods of suturing</li> </ul>   | <p>1 Surgical instruments: general concept, requirements and classification. Instruments for dissection of tissues (scalpels, scissors and wire saw). Instruments for hemostasis (different kinds of forceps). Instruments for grasping of tissues (anatomy and surgical forceps – pincettes). Mobile and mechanical retractors and dilators. Instruments for tissues suture (surgical needle holders, needles and forceps). Anatomy of surgical needle Hagedorn. Instruments for exploration (probes). Special and laparoscopic instruments. Requirements and types of operating room table and surgical light.</p> <p>2 Suture materials: brief history and requirements. Classifications of suture materials by structure and source from which they are produced. Concept of atraumatic surgical needles. Labeling of enveloped atraumatic needle with thread. Tying of a simple (direct, square), surgeon's, slip, and instrument applied knots. General rules of the skin wound suturing. Interrupted sutures (simple, Blair-Donati and in "U"), and continuous (simple running and intracutaneous sutures). Principles of skin lesion excision, suturing of fascia, bowel and blood vessel.</p>  |
| <b>Theme 10. Desmurgy</b>  |   |
| <ul style="list-style-type: none"> <li>• To define the concept of bandages</li> <li>• To know the classification of bandages</li> <li>• To demonstrate rules of applying of bandages</li> <li>• To apply cravat, roller and triangular bandages</li> </ul>   | <p>1 Desmurgy: concept, types of bandages. General rules of dressing technique and bandaging. Triangle bandage: triangle bandage for head; triangle bandage for arm; triangle bandage for chest; triangle bandage for hip joint and gluteal region; triangle bandage for lateral surface of chest; triangle bandage for foot; triangle bandage for hand. Principles and area of application.</p> <p>2 Cravat bandage: preparation of cravat bandage; cravat bandage for eye; cravat bandage for head; cravat bandage for temple, cheek or ear; cravat bandage for elbow or knee; cravat bandage for arm, forearm, leg or thigh; cravat bandage for axilla. Principles and area of application.</p> <p>3 Roller bandage: principles of application; four-tailed bandage for chin and nose; roller bandage for elbow; roller bandage for hand and wrist; roller bandage for a finger; roller bandage for thumb and all fingers; roller bandage for ankle and foot; roller bandage for heel; roller bandage for arm and leg; Velpeau's bandage; Desault's</p>  |



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|   | bandage; Barton bandage; roller bandage for one eye or both eyes; Hippocrate's bandage; capeline bandage. Principles and area of application.<br>4 Elastic net retention bandage. Adhesive bandage. Principles and area of application.   |
| <b>Theme 11. Minor surgical manipulations</b>   |   |
| <ul style="list-style-type: none"><li>• To define the central venous access</li><li>• To know the classification of different minor surgical manipulations</li><li>• To demonstrate the insertion of tube, catheters into the stomach, intra-pleural, in urinary bladder, intravenous</li></ul>                             | <p>1 Technique of subcutaneous, intramuscular and intravenous injections.</p> <p>2 Central venous access. Types of central venous catheters. General indications and contraindications of central venous catheterization. The basic methods of insertion of venous catheters. Seldinger technique of vascular access. The major routes of central venous access (internal jugular vein, subclavian vein, femoral vein, external jugular vein catheterization): general technical aspects, advantages and disadvantages of each way. Early and late complications of central venous catheterization. Notion about venesection. Getting on pulmonary artery catheterization (Swan-Ganz catheter).</p> <p>3 Thoracentesis: definition, indications and contraindications. Technical aspects and landmarks in selecting the site of pleural puncture in pneumothorax and hydrothorax. Complications. Toracostomy: definition, indications and contraindications. Types of toracostomy: needle (punctured), trocar catheter and tube toracostomy. General technical aspects. Complications. Laparocentesis. Definition, indications and contraindications. General technical aspects. Complications.</p> <p>4 Gastric intubation. Types of nasogastric tube. Indications (diagnostically and therapeutically) and contraindications to nasogastric tube installation. General technical aspects of installation of nasogastric tubes. Complications. Definition of duodenal intubation.</p> <p>5 Balloon tamponade of upper digestive tract in case of variceal bleeding (Sengstaken-Blakemore, Minnesota and Linton-Nachlas tube). The principle of action of balloon tubes for haemostatic tamponade. Indications and contraindications. General technical aspects of installation and extraction of tubes for balloon tamponade. Complications.</p> <p>6 Anoscopy. Definition, indications and contraindications. Pre-exams preparing. General technical aspects of anoscopy. Sigmoidoscopy. Definition, indications and contraindications. Pre-exams preparing. General technical aspects of sigmoidoscopy.</p> <p>7 Urethral catheterization. Definition. Types of urethral catheters. Indications and contraindications for urethral catheterization. General technical aspects of urethral catheterization in male and female patients. Immediate complications. The consequences of prolonged urethral catheterization.</p> <p>8 Percutaneous suprapubic cystostomy. Indications and contraindications. General technical aspects of cystostomy.</p> |
| <b>Theme 12. Semiology of nutritional disturbances</b>  |   |
| <ul style="list-style-type: none"><li>• To define the definition of nutritional disturbances</li><li>• To know the classification of nutritional disturbances</li><li>• To demonstrate the clinical assessment of nutritional disturbances</li><li>• To apply methods for determining of nutritional disturbances</li></ul> | <p>1 Semiology of nutritional disturbances. Malnutrition: definition, importance in surgery and causes. Nutritional assessment: history, dietary history, physical findings of organs and systems. Laboratory tests in detecting nutritional abnormalities: complete blood count, liver function tests, delayed-type hypersensitivity, total lymphocyte count. Anthropometrics in estimation of nutritional status of surgical patient: percentage usual body weight, absolute weight loss, body mass index. Classification of nutritional status according to body mass index. Determination of triceps skinfold and mid-humeral circumference, interpretation of results. Energy consumption and caloric requirements in patients with surgical pathology: indirect calorimetric measurements, Harris-Benedict equation, using patient's body weight alone. Increasing of energy consumption in surgical patients.</p> <p>2 Enteral feeding: advantages, indication and contraindication. Feeding tubes. Enteral feeding products: blenderized tube feeding, standard enteral diets, chemically defined</p>   |



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|  | <p>formulas (elemental diets), modular formulas. Bolus and continuous methods of enteral feeding protocols. Complications of enteral feeding: metabolic, tracheobronchial aspiration, diarrhea.</p> <p>3 Parenteral nutrition: indications in different pathologies of gastrointestinal tract. Conception of partial and total parenteral nutrition, methods of administration. Main components of solutions for parenteral nutrition. Complications of parenteral nutrition: mechanical, infectious and metabolic.</p> <p>4 Obesity: definition, classification. Conception of morbid obesity. Complications of morbid obesity: cardiopulmonary effects, diabetes mellitus, joint diseases, cholelithiasis, fat induced liver diseases, thromboembolic disorders, endocrine dysfunction, psychosocial problems. Contemporary treatment of morbid obesity.</p>  |
| <b>Theme 13. Semiology and treatment of wounds</b>   |   |
| <ul style="list-style-type: none"> <li>• To define the definition of wound</li> <li>• To know the classification of wounds and healing process</li> <li>• To demonstrate the faze of healing process</li> <li>• To apply methods treatment of the wounds</li> <li>• To integrate the different methods of treatment of wounds</li> </ul> | <p>1 Wounds: definition, local symptoms: pain, hemorrhage, wound dehiscence and functional disturb. Factors, which determine grade of local symptoms and their characteristic. General clinical manifestations of wound.</p> <p>2 Classification of wounds: according to origin (surgical, traumatic, and battle wound), according to kind of traumatic agent (cut, stab, chopped, contusioned, lacerated, bite, gunshot, combined wounds), according to course of wound channel (perforating, blind, tangent wounds), according to relation of wound channel with body cavities (penetrating and non-penetrating wounds), according to degree of contamination (aseptic, contaminated, purulent wounds). Local signs according to the kind of wound. Zones of tissue damage and clinical features of gunshot wound.</p> <p>3 Wound healing process: definition, phases. Pathological and clinical description of phases. Structure and function of granulation tissue. Wound healing first and second intention, with scab formation. Wound complications and complications of wound healing.</p> <p>Historical development of first aid in wound. First aid in wound: removal of early life threatening complications, prevention of wounds' contamination. Principles of treatment of aseptic, contaminated and purulent wounds. Primary surgical processing of wound, its steps. Kinds of primary surgical processing of wound according to the term of performing. Conception of primary, primary deferred, early secondary and late secondary sutures. Secondary surgical processing of wound. Additional physical methods of purulent wounds' cleaning pulsatile jet, ultrasound cavitation, high-energy surgical laser, treatment in operated abacterial environment. Local drug treatment and general treatment of purulent wounds. Skin grafting.</p> |
| <b>Theme 14. Surgical infection</b>  |   |
| <ul style="list-style-type: none"> <li>• To define the definition of surgical infection</li> <li>• To know the classification of surgical infection</li> <li>• To demonstrate the semiology of surgical infection</li> <li>• To apply methods for treatment of surgical infection</li> <li>• To integrate the surgical and</li> </ul>    | <p>1 Concept of surgical infection. Classification of surgical infection: according to etiology, clinical manifestation, localization. Pathogenesis of surgical infection: pathogenic germs and source of infection, specific and nonspecific reactions of organism. Factors, which decrease effectiveness of protective mechanisms.</p> <p>2 Semiology of surgical infection: local and general symptoms. Supplementary method of diagnosis: diagnostic puncture, determination of microorganisms in tissue and their quantity, blood test, the level of molecules with medium apparent molecular weight. Local complications of purulent diseases: necrosis, lymphangitis, lymphadenitis, trombophlebitis.</p> <p>3 Principles of local treatment in case of purulent surgical infection of soft tissue: surgical processing, adequate drainage, application of antiseptics, immobilization. Principles of general treatment of surgical infection.</p> <p>4 Semiology of purulent diseases of skin subcutaneous adipose tissue. Furuncle and carbuncle: definition, symptoms and treatment. Abscess and phlegmon: definition,</p>  |



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| conservative methods of treatment of surgical infection   | symptoms and treatment. Paraproctitis: definition, classification, symptoms and treatment. Erysipelas: definition, clinical forms, symptoms and treatment. Erysipeloid. Hydradenitis, lymphangitis, lymphadenitis, adenophlegmon: definition, symptoms and treatment.  |
| <b>Theme 15. Semiology of felon and phlegmon of hand</b>  |  |
| <ul style="list-style-type: none"><li>• To define the definition of felon and hands phlegmon</li><li>• To know the classification of felon and hands phlegmon</li><li>• To demonstrate the principles of treatment of patient with felon and phlegmon of hand</li><li>• To apply methods of anesthesia in case of felon and phlegmon of the hand</li><li>• To integrate the knowledge of hands anatomy in classification of hand phlegmon</li></ul>   | <p>1 Semiology of purulent affection of fingers and hand. Dependence of symptomatology of purulent diseases on anatomico-functional features of fingers and hand. Felon: definition, classification. Semiology of cutaneous felon, subcutaneous felon, paronychia, purulent tenosynovitis, osseous felon, articular felon and pandactylitis. Indications for surgical treatment of felon, the rule of “first sleepless night”. Principles of surgical treatment of felon: anesthesia, typical incisions. General principles of conservative treatment of felon.</p> <p>2 Phlegmon of hand: definition, classification. Semiology of different kinds of hand phlegmon: commissural, of middle hand space, of tenor area, of dorsal part of hand. U-shaped phlegmon of hand: mechanism of development, symptoms, complications. Principles of treatment of hand phlegmon: anesthesia, typical incisions. General principles of conservative treatment of hand phlegmon.</p>  |
| <b>Theme 16. Semiology of traumatic injuries and inflammatory conditions of bones and joints</b>  |  |
| <ul style="list-style-type: none"><li>• To define the definition of bone fractures, joint dislocation, osteomyelitis and purulent arthritis</li><li>• To know the classification of bone fractures, joint dislocation, osteomyelitis and purulent arthritis</li><li>• To demonstrate the installing of diagnoses of bone fractures, joint dislocation, osteomyelitis and purulent arthritis</li><li>• To apply methods for treatment of bone fractures, joint dislocation, osteomyelitis and purulent arthritis</li></ul> | <p>1 Fracture: definition, classification. Semiology of limb fractures. Absolute and relative symptoms of fracture. X-ray signs of fracture. First aid in case of fracture. Methods of splinting. General principles of treatment.</p> <p>2 Dislocation: definition, classification. Semiology of dislocation. X-ray signs of dislocation. First aid and general principles of treatment of dislocation.</p> <p>3 Osteomyelitis: definition, classification, ways of contamination. Theories of pathogenesis: embolic, allergic, vascular, neuroreflectory. Semiology of acute haematogenous osteomyelitis. Clinical forms of acute haematogeneous osteomyelitis: toxic, septic and local. Early local symptoms of acute haematogeneous osteomyelitis. X-ray signs. Principles of local and general treatment of acute haematogeneous osteomyelitis. Semiology of acute nonhaematogenous osteomyelitis: conception, different forms (posttraumatic osteomyelitis, gunshot, postoperative), symptoms, X-ray signs, principles of treatment. Semiology of chronic osteomyelitis: definition, causes, symptoms, X-ray signs and principles of treatment. Atypical forms of osteomyelitis, primary chronic osteomyelitis: albuminous osteomyelitis, Brode’s abscess, Garre’s sclerozing osteomyelitis.</p> <p>4 Semiology of acute purulent arthritis: definition, classification according to the ways of contamination (primary and secondary), local and general symptoms, principles of treatment. Semiology of acute purulent bursitis: definition, symptoms and principles of treatment.</p> |



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| <ul style="list-style-type: none"><li>To integrate the knowledge from anatomy for classification and treatment of bone fractures, joint dislocation, osteomyelitis and purulent arthritis</li></ul>  |  |
| <b>Theme 17. Sepsis and anaerobic infection</b>  |  |
| <ul style="list-style-type: none"><li>To define the definition of sepsis and SIRS</li><li>To know the classification of sepsis and SIRS</li><li>To demonstrate the disturbances of homeostasis in case of sepsis and SIRS</li><li>To apply methods of installing of diagnosis of sepsis and SIRS</li><li>To integrate the knowledge from pathology for explanation of sepsis</li></ul>                               | <p>1 Definition of sepsis, bacteremia, septicemia, septicopiemia. Systemic inflammatory response syndrome (SIRS). Incidence and mortality in sepsis. Pathophysiology of surgical sepsis. Cytokines and their role in pathogenesis of sepsis. Classification of sepsis according to the type of bacteriological agent, localization of primary infectious focus, clinical evolution, and pathological findings. Clinical manifestations of sepsis, main criteria of multiple organ failure. Diagnosis of sepsis: detection of primary focus, blood culture, laboratory data. Local and general treatment of surgical sepsis. Principles of antimicrobial therapy of sepsis.</p> <p>2 Anaerobic clostridial infection of soft tissues (gas gangrene): characteristics of microorganisms, conditions for infection development, classification according to origin and clinical features. Pathophysiology, clinical signs, diagnosis, and treatment of anaerobic clostridial infection of soft tissues (gas gangrene). Particularities of surgical care for anaerobic clostridial infection of soft tissue.</p> <p>3 Anaerobic non-clostridial surgical infection: causative organisms, clinical manifestations, diagnosis, and treatment.</p> <p>Surgical aspects of tetanus: causative microorganism and source of infection. Pathophysiology and classification of tetanus. Clinical features of neonatal, cephalic, local, and generalized tetanus. Role of surgical treatment, principles of medical care and prevention of tetanus.</p> |
| <b>Theme 18. Semiology of head and neck</b>  |  |
| <ul style="list-style-type: none"><li>To define the definition of main surgical affections of head and neck</li><li>To know the classification of main surgical diseases of head and neck</li><li>To demonstrate the clinical examination of the patients with surgical diseases of head and neck</li><li>To apply additional methods of investigation of patients with surgical diseases of head and neck</li></ul> | <p>1 Semiology of benign tumors of head soft tissues: atheroma, lipoma, papilloma. Semiology of inflammatory diseases of head soft tissues: furuncle, carbuncle, purulent parotiditis. Sinus-thrombosis: definition, semiology, risk and complications.</p> <p>2 Surgical semiology of neck malformations: torticollis, cysts, fistulas, dermoid cyst of neck. Semiology of traumatic injury of neck: contusion of soft tissues, of larynx and trachea. Clinical features of wounds of neck. Principles of exploration of lymphatic glands of neck. Clinical features of affection of neck lymphatic nodes in case of inflammation, malignancy and systemic diseases.</p> <p>3 Surgical semiology of thyroid gland. Principles of exploration and palpation of thyroid gland. Ophthalmic symptoms in case of thyrotoxicosis. Semiology of inflammatory diseases and cancer of thyroid gland.</p>   |
| <b>Theme 19. Semiology of thorax and breast</b>  |  |





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| <ul style="list-style-type: none"> <li>• To define the definition of main surgical diseases of the thorax and breast</li> <li>• To know the classification of main surgical diseases of the thorax and breast</li> <li>• To demonstrate the clinical investigation of patients with surgical diseases of the thorax and breast</li> <li>• To apply and plane methods of treatment of patients with surgical diseases of the thorax and breast</li> </ul> | <p>1 General surgical semiology of the thorax: complaints, history of disease, physical examination (palpation, percussion, auscultation).</p> <p>2 Semiology of congenital and acquired deformities of thorax: pectus excavatum, pectus carinatum (“bird chest”), sternal fissure, Poland’s syndrome, emphysematous (“barrel” chest), paralytic and “boat” chest. Semiology of thoracic spine deformities: flatterring (dorsum platum), lordosis, kiphosis, gibbus, structural and functional scoliosis. Method of examination of patients with spine deformities.</p> <p>3 General semiology of breast: complaints, history, physical examination. Semiology of congenital breast anomalies: polytelia, atelia, amastia, polymastia, aberrant breast. Methods of inspection and palpation of mammary gland: consecution, position of patient, symptoms, palpation by Velpeau’s method. Semiology of breast cancer. Palpation characteristics of breast tumors. Method of palpation of regional lymph nodes.</p> <p>4 Mastitis: definition, classification, symptoms, prophylaxis and treatment. Semiology of benign breast diseases: mastopathy, gynecomastia. Definition of breast self examination. Male breast cancer. Instrumental methods of diagnosis for breast diseases.</p>  |
| <b>Theme 20. Semiology of acute abdomen</b>  |   |
| <ul style="list-style-type: none"> <li>• To define the definition of acute abdomen</li> <li>• To know the classification of acute abdomen</li> <li>• To demonstrate the clinical examination of patients with acute abdomen</li> <li>• To apply methods of additional investigation of patients with acute abdomen</li> </ul>  | <p>1 Conception of acute abdomen. Groups of diseases with clinical manifestation of acute abdomen. General semiology of acute abdomen. Patient complaints and history in case of acute abdomen: patient’s age, time and acuteness of onset, situation of the pain at first, shifting of pain, character and radiation of pain, increasing of pain by movement and respiration, frequency and character of vomit, constipation and diarrhea. Conception and causes of visceral and somatic pain. Inspection of patient with acute abdomen: attitude in bed, skin color, symmetric and asymmetric distension of abdomen, movement on respiration and other. Method of abdominal palpation in case of acute abdomen. Main symptoms during palpation in acute abdomen: tenderness, "board-like" abdomen, pain, skin hyperesthesia, peritoneal irritation (Blumberg’s sign). Determination of psoas symptom (Cope’s sign). Technique of bimanual palpation of the loins. Percussion in case of acute abdomen: disappearance of liver dullness and determination of free fluid in abdominal cavity. Points of auscultation of intestinal sounds and aortic bruits. Technique of rectal examination in patients with acute abdomen, main pathological findings. Instrumental diagnosis in case of acute abdomen.</p> <p>2 Semiology of acute inflammatory peritoneal diseases: complaints, history, physical examination. Semiology of hollow viscus perforation into abdominal cavity: complaints, history, physical examination. Semiology of intraperitoneal hemorrhage: complaints, history, physical examination. Semiology of acute intestinal obstruction: complaints, history, physical examination. Semiology of strangulating abdominal hernia: complaints, history, physical examination.</p> |
| <b>Theme 21. Semiology of trauma</b>   |   |
| <ul style="list-style-type: none"> <li>• To define the definition of trauma</li> <li>• To know the classification of trauma</li> <li>• To demonstrate the clinical examination of patients with trauma</li> <li>• To apply methods of</li> </ul>   | <p>1 Definition of trauma. Conception of “gold hour” in medical care of patient with traumatic injuries. Penetrating and blunt trauma. Classification of trauma: according to character of the damage agent and conditions of trauma. Definition of isolated, multiple, associated and combined trauma. Traumatic disease: periods and particularities.</p> <p>2 General semiology of head injuries. Primary and secondary brain injury in head trauma. Clinical examination of patients with head injury. Glasgow Coma Scale in evaluation of severity of neurologic coma. Semiology of special types of head trauma:</p>  |



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| <p>treatment of patients with trauma</p>  | <p>skull fractures, concussion, diffuse axonal injury, cerebral contusion, cerebral compression (epidural, subdural and intracerebral hematoma). Methods of instrumental diagnosis in head trauma.</p> <p>3 Clinical examination of patients with chest injuries. Semiology of chest injury: rib and sternal fractures. Definition of flail chest. Semiology of pleural space injuries: simple pneumothorax, tension pneumothorax, open pneumothorax, hemothorax. Definition of caked or clotted hemothorax. Semiology of pulmonary parenchymal injuries: pulmonary contusion, pulmonary laceration, pulmonary hematoma, traumatic pulmonary pneumatocele. Semiology of mediastinal injuries: tracheobronchial injuries, cardiac tamponade, traumatic aortic rupture, traumatic diaphragmatic hernia, esophageal injury. Classic Beck's triad in case of cardiac tamponade. Instrumental methods of diagnosis of chest injuries.</p> <p>4 Abdominal trauma: classification, main clinical syndromes. Semiology of abdominal wall injury: contusion, hematoma, muscles rupture. Semiology of abdominal trauma with hemorrhagic syndrome (rupture of solid organs). Semiology of abdominal trauma with peritoneal syndrome (rupture of hollow viscus). Instrumental methods of diagnosis and laboratory tests in case of abdominal trauma.</p>   |
| <p><b>Theme 22. Semiology of peripheral blood vessels</b></p>   |  |
| <ul style="list-style-type: none"> <li>• To define the definition of acute and chronic insufficiency of arterial and venous peripheral vessels</li> <li>• To know the classification of surgical diseases of peripheral vessels</li> <li>• To demonstrate the clinical examination of patients with surgical diseases of peripheral vessels</li> <li>• To apply methods of additional investigation of patients with surgical diseases of peripheral vessels</li> </ul> | <p>1 Basic syndromes of peripheral vascular diseases: acute arterial insufficiency, chronic arterial insufficiency, aneurisms of peripheral arteries, chronic venous insufficiency, acute superficial and deep veins thrombosis, lymphedema. Common semiology of peripheral vascular diseases.</p> <p>2 Patient complaints and history of disease in case of arterial pathology of extremities. Intermittent claudication. Examination of patients with diseases of peripheral arteries: determination of arterial pulse, assessment of sensory changes and restrictions of mobility in extremity, symptom of plantar ischemia (Oppel), points suitable for auscultation of arteries. Adson's test. Clinical estimation of the level of arterial occlusion and degree of extremity ischemia. Semiology of acute arterial insufficiency (acute ischemia) of extremities. Semiology of chronic arterial insufficiency (chronic ischemia) of extremities. Semiology of aneurisms of peripheral arteries.</p> <p>3 Patient complaints and history of disease in case of venous pathology of extremities. Technique of examination of patients with chronic venous insufficiency: functional tests (Delbet-Perthes, Trendelenburg), determination of incompetent perforator veins by palpation. Semiology of chronic venous insufficiency (varicose veins, postthrombotic syndrome). Local signs of venous ulcer. Technique of examination of patients with acute venous thrombosis. Homans' sign. Semiology of acute deep vein thrombosis. Conception of "phlegmasia cerulea dolens". Semiology of acute superficial vein thrombosis. Semiology of lymphedema. Stemmer's sign. Vascular imaging.</p> |
| <p><b>Theme 23. Necrosis and gangrene</b></p>   |  |
| <ul style="list-style-type: none"> <li>• To define the definition of necrosis</li> <li>• To know the classification of necrosis</li> <li>• To demonstrate the clinical examination of patients with necrosis</li> <li>• To apply methods local and general</li> </ul>   | <p>1 Necrosis: conception, classification according to genesis and clinical manifestations. Environmental conditions and pathological conditions, which can contribute to development of necrosis. Definition of gangrene. Semiology of dry gangrene of extremity. Semiology of damp gangrene of extremity. Clinical and morphological features of necrosis in diabetic foot.</p> <p>2 Principles of local and general treatment of dry and damp gangrene. Conception of trophic ulcer. Causes, semiology of ischemic, venous and neuropathic ulcers. Principles of treatment of trophic ulcers. Fistulas: definition, classification, semiology, principles of diagnosis and treatment.</p>   |



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| treatment of patients with necrosis   |  |
| <b>Theme 24. Diabetic foot: surgical aspects</b>  |  |
| <ul style="list-style-type: none"><li>• To define the definition of diabetic foot</li><li>• To know the classification of diabetic foot</li><li>• To demonstrate the local disorder in case of diabetic foot</li><li>• To apply methods clinical examination of patients with diabetic foot</li></ul>       | <p>1 Definition of diabetic foot syndrome. Epidemiology of surgical complications of diabetes mellitus. Pathophysiology of diabetic foot: arterial disease, somatic and autonomic neuropathy. Neuropathic, ischemic and neuroischemic forms of diabetic foot. Biomechanical aspects of foot ulcer formation. Principles of clinical examination of a patient with diabetic foot: inspection of the foot for ulcers, gangrene and deformation, assessment of plantar sensory function (Semmes – Weinstein test, „tip-term” test), determination of pulse at the plantar arteries. Diagnostic methods for diabetic foot syndrome: ankle-brachial Doppler index, photoplethysmography for toe systolic pressure, transcutan oxymetry, duplex ultrasound, angiography, CT, MRI. Peculiarities of diabetic foot infection: role of immune dysfunction, pathogenic microorganisms, clinical signs. Diagnostic methods for foot infections: probing, needle aspiration, medical imaging (radiography, CT, MRI), laboratory tests. Classification of diabetic foot infection according to the deepness and severity of septic process. Classifications of diabetic foot syndrome: Wagner, from University of Texas, S(AD)SAD. Principles of treatment: correction of ischemia, control of infection, amputations, plastic and reconstructive surgery. Prophylactic measures for diabetic foot.</p> |
| <b>Theme 25. Transplantology</b>  |  |
| <ul style="list-style-type: none"><li>• To define the definition of different type of transplantation</li><li>• To know the classification of transplantation</li><li>• To demonstrate the conception of host rejection</li><li>• To apply methods for prevention of rejection in transplantation</li></ul> | <p>Fundamentals of transplantology: conception, terminology, classification. Problems of donors in transplantology: transplantology of organs from alive donors and dead bodies. The rules of organ extirpation. Conception of tissular transplantation. Problems of compatibility in transplantology: compatibility according to ABO system and HLA system. Conception of host reaction in transplantation. Methods of prolongation of functional capacity of transplanted organs: selection of recipient, immunosuppression. Progress of contemporary medicine in transplantation of heart, kidney, lung, liver and other organs. Perspectives in transplantology.</p>   |

### VI. PROFESSIONAL (SPECIFIC (SC)) AND TRANSVERSAL (TC) COMPETENCES AND STUDY FINDINGS

#### ✓ Professional (specific) (SC) competences

- ✓ Knowledge, understanding and using of specific terms appropriate for general surgery and semiology;
- ✓ Knowledge and understanding the organization of surgical employment in Republic of Moldova and autochthonous surgical schools;
- ✓ Promotion of ethical principles in health care of surgical patients;
- ✓ Knowledge of asepsis and antisepsis in surgery in order to prevent and treat surgical infections;
- ✓ Knowledge in examination of a surgical patient with the use of both physical inspection and a number of additional noninvasive and invasive methods;
- ✓ Knowledge in preparing of patients for the surgery and their management in postoperative period;



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- ✓ Knowledge in technics of determination of blood groups and interpretation of results;
- ✓ Explication of the basic surgical syndromes: inflammatory, ischemic, necrotic, hemorrhagic, traumatic, tumoral, and their semiology and performing of differentiate diagnosis of these;
- ✓ Solution of situational problems and formulation of conclusions.
  
- ✓ **Transversal competences (TC)**
  - ✓ Improving of decision-making autonomy;
  - ✓ Formation of personal attitude;
  - ✓ Ability of social interaction, group work with different roles;
  - ✓ Framing in interdisciplinary projects, extracurricular activities;
  - ✓ Improving digital skills;
  - ✓ Developing different learning techniques;
  - ✓ Selection of digital materials, critical analysis and conclusions;
  - ✓ Presentation of individual scientific projects.
  
- ✓ **Study findings**
  - ✓ To assimilate theoretical and practical bases of asepsis and antisepsis in prevention and treatment of surgical infections;
  - ✓ To perform clinical examination of a patient with surgical pathology and reflecting the findings into academic history of diseases;
  - ✓ To use principles in diagnosis of syndromes in general surgery: inflammatory, hemorrhagic, necrotic, ischemic, occlusive and traumatic;
  - ✓ To make assessment of hemodynamic parameters in bleeding and applying techniques of temporary and definitive artificial hemostasis;
  - ✓ To distinguish the phase of wounds healing and apply suitable treatment of these;
  - ✓ To perform minor surgical procedures according to competence of integrated knowledge;
  - ✓ To assimilate the theoretical basis of desmurgy;
  - ✓ To integrate acquired knowledge in their further practical application;
  - ✓ To be competent to use the knowledge and methodology of general surgery and semiology in the ability to explain the nature of physiological or pathological processes in surgery;
  - ✓ To be able for implementation of the knowledge gained in the research activity;
  - ✓ To be competent to use critical and reliable scientific information obtained using the new information and communication technologies.

**Note. Study findings** (are deduced from the professional competencies and formative valences of the informational content of the discipline).

### VII. STUDENT'S SELF-TRAINING

| No. | Expected product                         | Implementation strategies  | Assessment criteria   | Implementation terms        |
|-----|--|--|---|-----------------------------|
| 1.  | Working with the sources of information: | Careful reading of lecture and (or) material from book, relating to the topic.<br>Reading of the questions, which needs to be clarified.<br>To familiarize with the additional sources of information, regarding to the topic.<br>Generalize the information and to make the conclusions regarding | The ability of catching of main information: interpretive ability, capacity of working. | During the both of semester |



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|    |   | to the topic.  |   |                             |
| 2. | Working with on-line materials            | On-line auto evaluation, to see the didactic materials on-line and from the site of general surgery department; to express herself opinions on the forum and chat.   | The number and duration of entering on the site of our department and the result of auto-evaluations.   | During the both of semester |
| 3. | Preparing and presentation of information | Choosing of the topic of research, planning, and timing.<br>Determining of components of project or presentation: the name of theme, aim, result, conclusions, practical benefit, and bibliography.<br>The reference from the colleges and teachers. | The work capacity, grade of penetration in to the project, the level of scientific explanation, the quality of the conclusions, elements of creativity, the making of personal attitude, consistency of exposure and scientific coherence, graphic. | During the second semester  |

### VIII. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

- **Teaching and learning methods used**

Discipline of General Surgery and Semiology is a subject where methods of teaching and learning consist of lectures in university halls, and practical work in Surgery Clinic. Courses are aimed to elucidate the material in the context of contemporary requirements; they follow to clear up the fundamental problems in various topics of general surgery, which are permanently updating. Additionally, there are lectures in the form of films for distance learning, that allow students to return to not completely understood places from the lecture. E-lectures are posted on the web-page of Department of General Surgery and Semiology in the section "Info students". Practical lessons are spent in that way that theoretical material presented in lectures and bibliography updated are demonstrated in concrete practical activities. This is the most obvious way to motivate students to learn. Practical work is spent in discussion and the less understood topic for students is explained by teacher.

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

„Brainstorming”, „Multi-voting”; „conference”; „team interview”; „clinical case”; „the techniques focus-group”.

- **Methods of assessment (including the method of final mark calculation)**

**Current** - ongoing verifying, clinical problems, clinical history, current test-control.

**Final** - complex examination including two steps: control test and oral exam. The annual mark that values 0.5 from the final mark is composed of 0.3 from annual mark and 0.2 for practical skills. This requires assessment of practical skills knowledge not at the end of second semester, but just during the study. So, examination mark summarizes the 0.3 from annual mark, 0.2 from the practical skills, 0.2 from test-control, and 0.3 from mark of oral theoretical answer.

In accordance with the "**Regulation on the organization of studies in higher education under the National Study Credit System**" approved by order of the Ministry of Education of the Republic of Moldova No. 726 of 20 September 2010 and Decision of the Central Medical





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Council of University "Nicolae Testemitanu" of 5 November 2010 for the session of 2011-2012 academic year, the following factors are approved:

### **Clinical disciplines:**

Annual Average – coefficient 0.5;  
Oral examination - coefficient 0.3;  
Multiple-choice test - coefficient 0.2.

### **At the clinical disciplines annual average mark consists of:**

The actual annual average - coefficient 0.3;  
Practical skills - coefficient 0.2.

Each component is assessed with grades from 10 to 1 with decimals and hundredths. The final mark is the weighted sum of current assessments and final examination and assessed with grades from 10 to 1 decimals rounded to 0.5.

### **Method of mark rounding at different assessment stages**

| Intermediate marks scale (annual average, marks from the examination stages) | National Assessment System | ECTS Equivalent |
|--|----------------------------|-----------------|
| <b>1,00-3,00</b>   | <b>2</b>                   | <b>F</b>        |
| <b>3,01-4,99</b>   | <b>4</b>                   | <b>FX</b>       |
| <b>5,00</b>  | <b>5</b>                   | <b>E</b>        |
| <b>5,01-5,50</b>   | <b>5,5</b>                 |                 |
| <b>5,51-6,0</b>  | <b>6</b>                   |                 |
| <b>6,01-6,50</b>   | <b>6,5</b>                 | <b>D</b>        |
| <b>6,51-7,00</b>   | <b>7</b>                   |                 |
| <b>7,01-7,50</b>   | <b>7,5</b>                 | <b>C</b>        |
| <b>7,51-8,00</b>   | <b>8</b>                   |                 |
| <b>8,01-8,50</b>   | <b>8,5</b>                 | <b>B</b>        |
| <b>8,51-8,00</b>   | <b>9</b>                   |                 |
| <b>9,01-9,50</b>   | <b>9,5</b>                 | <b>A</b>        |
| <b>9,51-10,0</b>   | <b>10</b>                  |                 |

The average annual mark and the marks of all stages of final examination (computer assisted, test, oral) - are expressed in numbers according to the mark scale (according to the table), and the final mark obtained is expressed in number with two decimals, which is transferred to student's record-book.

*Absence on examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.*

## **IX. RECOMMENDED LITERATURE:**

### **A. Compulsory:**

| <b>Nr</b> | <b>Source</b>   | <b>Ex</b> |
|-----------|---|-----------|
| 1         | Guțu E, Casian D, Iacob V, Culiuc V. General Surgery and Semiology. Lecture support for the 3 <sup>rd</sup> -year students, faculty of Medicine nr.2. 2 <sup>nd</sup> edition. Chișinău: CEP Medicina; 2017. 127 p. | 300       |
| 2         | Gostishcev V. General surgery. Moscow: Goetar-Media; 2003. 219 p.   | 49        |



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|   |  |    |
|---|--|----|
| 3 | Guțu E, Iacob V, Casian D, Cristalov G. Dressings and Bandages. Methodical recommendation. Kishinev: CEP Medicina; 2006. 29 p. (also placed in pdf format on web-page of Department) | 35 |
|---|--|----|

### *B. Additional*

| <b>Nr</b> | <b>Source</b>  | <b>Ex</b> |
|-----------|--|-----------|
| 1         | Sabiston Textbook of Surgery. The Biological Basis of Modern Surgical Practice. 18-th ed. Philadelphia: WB Saunders; 2007. 2100 p. | 4*        |
| 2         | Bates B. A Guide to Physical Examination and History Taking. 5-th ed. Philadelphia: JB Lippincott; 1991. 714 p.                    | 1*        |
| 3         | Greenfield LJ, ed. Surgery: Scientific Principles and Practice. 2 <sup>nd</sup> ed. Philadelphia: Lippincott-Raven; 1997. 2238 p.  | 1*        |

\*- free internet access