

INTERNATIONAL HIGHER SCHOOL OF MEDICINE

Department of Surgical diseases

SYLLABUS

General surgery

2025-2026 academic year

for students of medical faculty

2 course 5 semester, groups 1-40

2 credits (60 h, including auditorial 36 h, independent work – 24 h)

Lecturer: **Salieva Bermet Rachimberdievna**

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Zoom

Venue:

**Practical
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Venue: National Hospital I.K. Akhunbaev clinic, Togolok Moldo str. 1/13, Department of Surgical diseases

The Syllabus is considered

at the meeting of the department of surgical diseases

Protocol № 5 dated 16th January 2026

Head of the department  Ermekov T.A.

Course Objective: formation of competences of foreign students in the specialty «General surgery», study of theoretical foundations and practical skills of propedeutic surgery, training of a specialist for primary examination of a surgical patient, rendering first aid as part of the duties of the doctor specialty «General Medicine» with the English language of instruction.

After study of the discipline the student must:

Knowledge:

- A medical history diagram that determines the sequence of examining the patient using physical, clinical, laboratory, functional and instrumental methods;
- goals and objectives, principles and methods of conducting aseptic and antiseptic surgery;
- a set of methods and methods of work aimed at preventing infection in the wound, the patient's body, creating microbial, sterile conditions for surgery;
- a system of measures aimed at the destruction of microorganisms in the wound, pathological hearth, organs and tissues, as well as in the body of the patient as a whole;
- patterns of functional of individual organs and systems, mechanisms of development of the main symptoms and syndromes, as well as methods for their identification

Skill:

- Collect the necessary information, carefully and competently describe all sections of the «students» medical history, recording all necessary data, reflecting the course of clinical thinking in the process of making a diagnosis and choosing treatment tactics;
- Choose and apply different methods of aseptic and antiseptic, according to the goals and objectives of the profession;
- Identify the main symptoms using physical examination methods and group them into syndromes based on knowledge of the anatomical and physiological characteristics and patterns of functioning of organs and systems

Attitude:

- Demonstrate practical skills in collecting patient complaints, his medical history, conducting a physical examination in accordance with the medical history chart at the patients' bedside;
- Skill in determining the purpose of medical products, their scope of application and the algorithm for their use in the provision of medical care
- Skills of physical examination of patients aimed at identifying the main pathological symptoms for the purpose of reliable diagnosis of the diseases.

Pre-requisites.

- Anatomy (macro-microanatomy)
- Topographical anatomy
- Normal Physiology
- Biochemistry
- Latin

Post-requisites.

- Therapeutic disciplines
- Obstetric-gynecological disciplines
- Surgical disciplines
- Pediatric disciplines
- Traumatology, Orthopaedics and Disastrous Surgery
- Anesthesiology, Intensive Care, Emergency Conditions

THEMATIC PLAN OF LECTURES

№	Theme of lecture	Hours
1.	Systemic response to surgical injury and stress.	2
2.	Shock and critical conditions in surgical practice.	2
3.	Wound healing, infection and inflammation in surgery.	2
4.	Pain management and perioperative support.	2
5.	Tissue engineering and regenerative medicine in surgery.	2
6.	Innovative and minimally invasive surgical technologies.	2
	Total hours:	12

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours
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1.	Clinical manifestations of the Systemic response to trauma.	2
2.	Shock: classification, severity, management.	2
3.	Wounds, healing and tissue repair.	2
4.	Surgical infection.	2
5.	Surgical treatment of tropical infections and infestations.	2
6.	Control Unit #1	2
7.	Pain management in surgical patients.	2
8.	Nutrition and fluid therapy.	2
9.	Tissue engineering and regeneration.	2
10.	Fundamentals of laparoscopic surgery.	2
11.	Fundamentals of robotic surgery.	2
12.	Control Unit #2	2
	Total hours:	24

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

Unit №	Theme of independent work	Hours
Unit 1. Fundamentals of the Surgical Pathophysiology and Patient Care		12
1.	Phases of Metabolic Response to Injury and Their Clinical Significance.	2
2.	Assessment of Severity of Shock Using Clinical and Laboratory Parameters.	2
3.	Modern Concepts of Wound Healing: Cellular and Molecular Mechanisms.	2
4.	Pathogenesis and Prevention of Surgical Site Infections.	2
5.	Tropical Infections and Infestations Relevant to Surgical Practice.	2
6.	Principles of Multimodal Pain Management in Surgical Patients.	2
Unit 2. Modern Surgical Technologies and Regenerative Approaches		12
7.	Basics of enteral and parenteral nutrition in surgical patients.	2
8.	Fundamentals of fluid therapy and electrolyte balance in surgery.	2
9.	Scientific basis of Tissue Engineering and regenerative medicine in Modern Surgery.	2
10.	Fundamental Principles of Laparoscopic Surgery and Patient Safety.	2
11.	Fundamentals of Robotic Surgery and modern surgical platforms.	2
12.	Current innovations and minimally invasive technologies in surgery.	2
Total		24

Recommended reading for the discipline:

Basic:

1. «Bailey and love short practice of surgery Vol.1-27th ed» Williams N.S. 2017
2. «Schwartz's Principles of Surgery, 11th ed.» F. Charles Brunicaudi et al.. 2019
3. «Manipal Manual of Clinical Methods in Surgery, 1st ed.» Rajagopal K. Shenoy 2019

Additional:

1. «Mulholland & Greenfield's Surgery: Scientific Principles & Practice, 7th ed.» Justin B. Dimick et al. 2021

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):

current score - 40 points

independent work - 20 points

control score (final assessment of knowledge per unit) - 40 points

Maximum score - 100 (40+20+40)

Grading system for student's achievements

Grading criteria per discipline				
Maximum score	Intervals			
	«unsatisfactory»	«satisfactory»	«good»	«excellent»
Current control - 40	0-23	24-30	31-35	36-40
Interval description	Exposed for poor learning. The unsatisfactory answer shows that the student is familiar with the educational material, but does not distinguish the basic provisions that make material mistakes that distort the meaning of the studied. It conveys the information that he remembered with words of a teacher or from a textbook, but which logically is not processed in his mind, not brought into the system of scientific provisions, arguments.	Displayed if student applies correctly specific terminology, knows the basic, essential provisions of the training material, but does not know how to explain them, allows individual errors and inaccuracies in the content of knowledge and the form of construction of the answer.	It is put forward for the correct assimilation of the software material, but there are inaccuracies and minor errors, both in the content and in the form of the answer.	It is for a deep understanding of the educational material, for the ability to independently explain the studied provisions, for a logical correctly constructed answer, when the student does not tolerate mistakes and is able to integrate the acquired knowledge with knowledge on related academic disciplines.
Independent work - 20	0-11	12-15	16-17	18-20
Interval description	Independent work is not completed or completed partially. The student demonstrates poor understanding of the topic, makes significant errors, and does not meet content or quality requirements.	Independent work is completed partially. The material is presented superficially, with substantial inaccuracies and limited use of relevant sources.	Independent work is completed in full. The main issues are addressed, though minor inaccuracies and insufficient depth of analysis are present.	Independent work is completed fully and at a high quality. The material is logically structured, supported by relevant and up-to-date sources, and demonstrates solid understanding and analytical skills.
Control work (module) - 40	0-23	24-30	31-35	36-40
Interval description	Modular control is failed. The student demonstrates insufficient theoretical knowledge and practical skills, makes major errors in test tasks and practical performance, and is unable to analyze clinical situations.	Partial achievement of learning outcomes. Test results contain significant errors, practical skills are insufficiently developed, procedural algorithms are violated, and continuous instructor assistance is required.	Satisfactory achievement of learning outcomes. Most test tasks are completed correctly, practical skills are generally formed, with minor inaccuracies that do not significantly affect performance.	Full achievement of learning outcomes. The student demonstrates strong theoretical knowledge and confident practical skills, correctly analyzes clinical scenarios, and follows clinical algorithms and safety principles.

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).

- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-10 points.

Academic Ethics Policy.

- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-10 points.

Guidelines for the lessons of the discipline

UNIT №1 « Fundamentals of the surgical pathophysiology and Patient Care»

Content of Unit № 1

Key questions covered in Lecture №1: Systemic Response to Surgical Injury and Stress.

1. What is the systemic response of the body to surgical injury and stress?
2. Which metabolic and hormonal changes occur after trauma?
3. How does surgical stress affect organ systems and homeostasis?
4. What factors influence the severity of the stress response?

Key questions covered in Practice classes №1: Clinical Manifestations of the Systemic Response to Trauma

1. What are the main phases of the metabolic response to injury?
2. How do catabolism and energy expenditure change after trauma?
3. What clinical signs indicate an abnormal metabolic response?
4. How can metabolic disturbances be assessed and corrected in surgical patients?

Recommended reading for the class:

[1] PP 2-11

Key questions covered in Lecture №2: Shock and Critical Conditions in Surgical Practice.

1. What is shock and how is it classified in surgical practice?
2. What are the main pathophysiological mechanisms of shock?
3. How does shock affect vital organs and systems?
4. What factors determine the severity of shock?

Key questions covered in Practice classes №2: Shock: Classification, Severity, and Management.

1. How are different types of shock clinically distinguished?
2. How is the severity of shock assessed?
3. What are the basic principles of initial shock management?
4. How is treatment effectiveness monitored in shock patients?

Recommended reading for the class

[1] PP 12-23

Key questions covered in Lecture №3: Principles of Wound Healing and Tissue Repair.

1. What are the main phases of wound healing?

2. Which cellular and molecular mechanisms regulate tissue repair?
3. What factors impair normal wound healing?
4. How does tissue repair differ in acute and chronic wounds?

Key questions covered in Practice classes №3: Wounds: Healing and Tissue Repair.

1. How are wounds classified in surgical practice?
2. How can wound healing progress be clinically assessed?
3. What signs indicate delayed or complicated wound healing?
4. What basic measures promote optimal wound repair?

Recommended reading for the class

[1] PP 24-32

Key questions covered in Lecture classes №4: Infection and Inflammation in Surgery.

1. What is the role of inflammation in surgical infections?
2. How do surgical infections develop and spread?
3. What are the common pathogens in surgical infections?
4. How can surgical infections be prevented?

Key questions covered in Practice classes №4: Surgical Infection.

1. What clinical signs suggest a surgical site infection?
2. How are surgical infections classified?
3. What principles guide the prevention of surgical infections?
4. How are infectious complications monitored in surgical patients?

Recommended reading for the class

[1] PP 42-56

Key questions covered in Practice classes №5: Surgical treatment of tropical Infections and Infestations.

1. Which tropical infections are most relevant to surgery?
2. What are the key clinical features of tropical infestations?
3. How can these conditions be recognized in surgical patients?
4. What basic preventive strategies reduce infection risk?

Recommended reading for the class

[1] PP 57-83

Key questions covered in Lecture classes №5: Pain Management and Perioperative Support.

1. Why is pain control essential in surgical patients?
2. What are the main mechanisms of surgical pain?
3. What factors influence perioperative pain response?
4. How does pain affect recovery after surgery?

Key questions covered in Practice classes №6: Pain Management.

1. How is pain assessed in surgical patients?
2. What basic methods of pain management are used in surgery?
3. What are the risks of inadequate pain control?
4. How is pain management effectiveness evaluated?

Recommended reading for the class

[1] PP 269-277

Key questions covered in Practice classes №7: Nutrition and Fluid Therapy.

1. How is nutritional status assessed in surgical patients?

2. What are the basic principles of fluid therapy?
3. What complications arise from fluid imbalance?
4. How is therapy adjusted based on patient condition?

Recommended reading for the class

[1] PP 278-290

Content of UNIT 2 «Modern Surgical Technologies and Regenerative Approaches»

Key questions covered in Lecture classes №6: Innovative and Minimally Invasive Surgical Technologies.

1. What defines minimally invasive surgery?
2. How do innovative technologies improve surgical outcomes?
3. What are the general advantages and limitations of MIS?
4. How do new technologies influence patient recovery?

Key questions covered in Practice classes №8: Tissue Engineering and Regeneration.

1. What is tissue engineering in surgical practice?
2. How does regeneration differ from tissue repair?
3. What clinical applications exist for regenerative techniques?
4. What limitations affect regenerative therapies?

Recommended reading for the class

[1] PP 33-41

Key questions covered in Practice classes №9: Fundamentals of Laparoscopic Surgery.

1. What equipment is essential for laparoscopic surgery?
2. How is pneumoperitoneum created and maintained?
3. What safety principles are critical in laparoscopy?
4. What complications may occur during laparoscopic procedures?

Recommended reading for the class

[1] PP 105-119

Key questions covered in Practice classes №10: Fundamentals of Robotic Surgery.

1. What are the main components of a robotic surgical system?
2. What procedures commonly use robotic assistance?
3. What safety principles apply to robotic surgery?
4. What ethical and economic considerations affect its use?

Recommended reading for the class

[1] PP 105-119

Methodological instructions for the implementation of independent work on the discipline

Student must choose and prepare a presentation on one of the following topics:

Unit №	Theme of independent work	Instructions
Unit 1. Fundamentals of the surgical pathophysiology and Patient Care		
1.	Interpretation of signs of hypermetabolism; assessment of postoperative catabolism	Prepare a chart or diagram illustrating the phases of metabolic response to injury with brief clinical explanations.
2.	Measurement of hemodynamic parameters; calculation of the shock index; interpretation of lactate and acid-base balance	Develop a comparative chart or table and clinical algorithm summarizing clinical

		signs and laboratory indicators used to assess shock severity.
3.	Determination of the stage of the wound healing process; selection of local treatment	Prepare a presentation (slides) explaining the key cellular and molecular mechanisms of wound healing.
4.	Surgical site infections	Create a visual algorithm or poster outlining mechanisms of infection development and preventive strategies.
5.	Recognition of parasitic diseases with surgical complications	Prepare an illustrated chart summarizing epidemiology, clinical manifestations, and surgical relevance of major tropical infections.
6.	Multimodal analgesia in surgery	Develop a schematic diagram demonstrating components of multimodal analgesia and perioperative optimization strategies.
Unit 2. Modern Surgical Technologies and Regenerative Approaches		
7.	Enteral and parenteral nutrition of surgical patients	Prepare a comparative table outlining indications, contraindications, advantages, and potential complications of nutritional support methods.
8.	Infusion therapy and correction of electrolyte disturbances	Create a clinical flowchart demonstrating assessment of fluid deficits and principles of perioperative fluid management.
9.	Regenerative technology in surgery	Prepare a presentation describing stem cells, scaffolds, growth factors, and their applications in surgery.
10.	Analysis of the effectiveness of innovative technologies	Develop a presentation covering patient selection, equipment basics, pneumoperitoneum physiology, and safety standards.
11.	Analysis of advantages and limitations of technologies	Prepare a poster or slide presentation explaining robotic system components, advantages, and limitations.
12.	Innovative and minimally invasive technologies in surgery	Prepare an analytical summary or presentation reviewing emerging surgical technologies and their clinical impact.