

Federal State Budgetary Educational Institution of Higher Education  
"Privolzhsky Research Medical University"  
Ministry of Health of the Russian Federation



## WORKING PROGRAM

Name of the academic discipline: - **EXPERIMENTAL SURGERY**

Direction of training (specialty) - **31.05.01 GENERAL MEDICINE**

Qualification - **GENERAL PRACTITIONER**

Department: **GENERAL, OPERATIVE SURGERY AND TOPOGRAPHIC ANATOMY named after A.I. KOZHEVNIKOV**

Mode of study: **FULL-TIME**

Labor intensity of the academic discipline: **36 academic hours**

Nizhny Novgorod  
2021

The working program has been developed in accordance with the Federal State Educational Standard for specialty 31.05.01 GENERAL MEDICINE approved by Order of the Ministry of Science and Higher Education of the Russian Federation No. 988 of August 12, 2020.

**Developers of the work program:**

Gorbunova L.I., Senior Lecturer of the Department of General, Operative Surgery and Topographic Anatomy named after A.I. Kozhevnikov

**Reviewers:**

1. Mikhailichenko V.Yu. - Head of the Department of General Surgery of the S.I. Georgievsky Medical Academy of the Federal State Educational Institution of Higher Education "V.I. Vernadsky KFU", Professor, MD.
2. Medvedev A.P. - Professor of the Department of Hospital Surgery named after B.A. Korolev of the Federal State Budgetary Educational Institution "PRMU" of the Ministry of Health of Russia, Professor, MD.

The working program was reviewed and approved at the meeting of the Department of General, Operative Surgery and Topographic Anatomy named after A.I. Kozhevnikov dated 01 June 2021 Protocol No. \_\_\_\_\_

Head of the Department of General, Operative Surgery and Topographic Anatomy named after A.I. Kozhevnikov,  
Professor, MD.

01 June 2021

  
(signature)

Bazaev A.V.

AGREED

Deputy Head of EMA ph.d. of biology   
(signature) Lovtsova L.V.

01 June 2021

## **1. The purpose and objectives of mastering the academic discipline "Experimental surgery" (hereinafter – the discipline):**

1.1. The purpose of mastering the discipline: the development of the discipline is aimed at the formation of students' relevant competencies: **UC-1; GPC-4; GPC-10; PC-7;**

It is known that almost all the achievements of modern medicine in one way or another depended on the success of experimental surgery. And today, when new knowledge about the functioning of the body, about the development of various diseases is obtained using mathematical modeling and computers, it is still impossible to do without experimental research.

This is explained by the fact that without an experiment, without modeling pathological conditions on a living organism, it is impossible to understand the development of diseases, to study compensatory and adaptive mechanisms that develop in the body during the disease. Assessing the significance of the experiment, the outstanding Russian physiologist, Nobel Prize laureate I.P. Pavlov wrote: "Full knowledge of the mechanism of the painful process from the beginning to the end is obtained only from the hands of the experimenter."

### **1.2. Tasks of the discipline:**

**Tasks of teaching experimental surgery:** In the process of teaching the course of experimental surgery, the main task is to prepare students on experimental surgery to the extent necessary for the work of a doctor. To teach students the basic methods of treatment of the most typical, classical individual nosological forms of surgical diseases. To teach the diagnosis of urgent diseases and conditions in surgery, as well as first aid in surgical pathology. When conducting practical classes, students should be taught independent creative work on a book, textbooks. Actively contribute to the acquisition of practical skills in the aspect of diagnostic methods, indications for operations, a surgical treatment plan, taking into account further training and professional activity in working conditions in practical healthcare institutions.

### **As a result of completing the discipline, the student should:**

#### **Know:**

- theoretical and methodological foundations of surgery, for work on diagnosis, for improving existing and developing new methods of diagnosis and treatment;

- methodological principles of the study of living systems, including the principles of theory and practice of planning a biomedical experiment, its technical support;

- qualitative and quantitative differences between health and disease, etiology, pathogenesis and clinic of the most common surgical diseases, principles of their prevention, treatment;

- general patterns of violations of the functions of body systems and methodological approaches for conducting scientific experiments and clinical diagnostics;
- principles of work organization and safety rules when working with medical instruments and equipment.

**Be able to:**

- provide emergency medical care in acute surgical conditions;
- perform general medical manipulations: stopping bleeding, injecting drugs, local anesthesia, using general and special surgical instruments; perform primary surgical treatment of the wound; layer-by-layer separation of soft tissues, skin, subcutaneous tissue, fascia, muscles, parietal peritoneum;
- in order to study the nature and mechanisms of pathological processes, formulate a research task, adequately select an object and use modern physico-chemical, biochemical and biomedical research methods;
- master the methods of experimental surgery (general anesthesia technique, the main types of surgical operations used to study physiology and modeling of pathological processes);

**Possess:**

- general surgical instruments;
- skills of layer-by-layer separation of soft tissues; skin; subcutaneous tissue; fascia; muscles;
- skills to sew up the wound in layers: suture the skin, muscles, parenchymal organs.
- the technique of applying a simple nodal seam and a continuous winding seam;
- the technique of applying knots by hands and with the help of tools (tie a simple knot, a sea knot, a double surgical knot);
- the technique of stopping bleeding in the wound (ligation of the vessel in the wound under the clamp);
- expose large arteries, bind a blood vessel;
- suture the wound of the stomach and intestines;

**2. Position of the academic discipline in the structure of the General Educational Program of Higher Education (GEP HE) of the organization.**

2.1. The discipline "Experimental surgery" refers to the part formed by the participants of the educational relations of Block 1 of GEP HE. The discipline is taught in VI semester/3rd year of study.

**2.2. The following knowledge, skills and abilities formed by previous academic disciplines are required for mastering the discipline:**

- in the cycle of humanities, social and economic disciplines, including: philosophy, bioethics, psychology and pedagogy, history of medicine, Latin language;
- in the cycle of mathematical, natural science disciplines, including: physics and mathematics; medical informatics; chemistry; biology; biochemistry; anatomy; normal physiology; microbiology, virology; immunology, topographic anatomy and operative surgery.
- in the cycle of professional disciplines, including: hygiene; propaedeutics of internal diseases; dermatovenerology; general surgery; radiation diagnostics; life safety, disaster medicine;

### ***Knowledge:***

The influence of the environment on human health, the history of finding effective means of treatment and prevention, the formation and development of medical science.

The doctrine of a healthy lifestyle, the doctor-patient relationship, outstanding figures of medicine, outstanding medical discoveries, the influence of humanistic ideas on medicine.

Moral and ethical norms, rules and principles of professional medical behavior, the rights of the patient and the doctor, the ethical foundations of modern medical legislation.

Basic medical terminology in Latin.

The basic laws of physics, physical phenomena and patterns underlying the processes occurring in the human body.

The physico-chemical essence of the processes occurring in a living organism at the molecular, cellular, tissue and organ levels.

The main patterns of development and vital activity of the organism based on the structural organization of cells, tissues and organs, histofunctional features of tissue elements, methods of their research.

### ***Competence:***

Be able to build and maintain working relationships with other members of the team.

Use educational, scientific, popular science literature, the Internet for professional activities.

To give a histophysiological assessment of the state of various cellular, tissue and organic structures.

### ***Skills:***

Skills of presenting an independent point of view, analysis and logical thinking, public speech, moral and ethical argumentation, conducting discussions and round tables, principles of medical deontology and medical ethics

Skills of reading and writing in Latin clinical terms.

Skills of using medical-anatomical conceptual apparatus.

### ***2.3. Mastering the discipline is required for forming the following knowledge, skills and abilities for subsequent academic disciplines:***

It is a precursor to the study of disciplines:

- pathological anatomy; -clinical pathological anatomy; -neurology; -neurosurgery; -otorhinolaryngology; -ophthalmology; -forensic medicine; -obstetrics and gynecology; -pediatrics; -radiation diagnostics; -occupational diseases; -endocrinology; hospital therapy; -faculty therapy; -polyclinic therapy; -anesthesiology, intensive care; -faculty surgery; - urology; -hospital surgery; -pediatric surgery; -dentistry; -oncology; -radiation therapy; -traumatology, orthopedics

**Know:**

Safety regulations and rules of work in physical, chemical, biological laboratories with reagents, devices, animals (working with tools)

The main patterns of development and vital activity of the body based on the structural organization of cells, tissues and organs, histofunctional features of tissue elements, methods of their research.

The structure, topography and development of cells, organs and systems of the body in interaction with their function in norm and pathology, features of the organizational and population levels of the organization of life.

The functional systems of the body, their regulation and self-regulation when exposed to the external environment are normal and pathological.

Theoretical foundations of computer science, collection, storage, search, processing, transformation, dissemination of information in medical and biological systems, use of information computer systems in medicine and healthcare.

**Be able to:**

Palpate the main bone landmarks, outline the topographic contours of organs and the main vascular and nerve trunks.

Use educational, scientific, popular science literature, the Internet for professional activities.

To give a histophysiological assessment of the state of various cellular, tissue and organ structures.

**Possess:**

Possess the simplest medical instruments (scalpel, tweezers, probe, clamps, expander, etc.)

Skills in using medical-anatomical conceptual apparatus.

### 3. Deliverables of mastering the academic discipline and metrics of competence acquisition

Mastering the discipline aims at acquiring the following universal (UC) or/and general professional (GPC) or/and professional (PC) competencies

№	Competence code	The content of the competence (or its part)	Code and name of the competence acquisition metric	As a result of mastering the discipline, the students should:		
				know	be able to	possess
1.	UC-1	Is able to carry out a critical analysis of problem situations based on a systematic approach, to develop a strategy of actions	IUC 1.1 Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis  IUC 1.2 is able to: acquire new knowledge based on analysis, synthesis, etc.; collect data on complex scientific problems related to the professional field; search for information and solutions based on actions, experiment and experience	Methodology of abstract thinking for the systematization of pathological processes, the construction of cause-and-effect relationships; - principles of analysis of the elements of the received information (identified symptoms, syndromes, pathological changes) as a result of examination of the patient on the basis of modern ideas about the relationship of functional systems of the body.	Analyze the symptoms and syndromes identified as a result of the patient's examination;	Methodology of synthesis of the received information (identified symptoms, syndromes, pathological changes) for diagnosis and treatment selection;
2.	GPC-4	Is able to use medical devices provided for by the procedure for providing medical care, as well as to conduct examinations of the patient in order to establish a diagnosis	IGPC 4.1 Knows the methodology of collecting anamnesis of life and diseases, complaints from patients (their legal representatives); the methodology of examination and physical examination; clinical picture, methods of diagnosis of the most common diseases; methods of laboratory and instrumental studies to assess the state of health, medical	appointments of medical instruments, rules and techniques for working with general surgical instruments.	- to identify cause-and-effect relationships of the development of pathological processes for the diagnosis and preparation of the patient's treatment program;	The simplest medical instruments

			indications for research, rules for interpreting their results; international statistical classification of diseases and health-related problems; conditions requiring urgent medical care; the procedure for the use of medical devices in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, assistance taking into account the standards of medical care		
3.	GPC-10	Is able to solve standard tasks of professional activity using information, bibliographic resources, medical and biological terminology, information and communication technologies, taking into account the basic requirements of information security	IGPC 10.2 is able to: apply modern information and communication technologies to solve the tasks of professional activity; carry out an effective search for information necessary to solve the tasks of professional activity using reference systems and professional databases; use modern medical and biological terminology; master and apply modern information and communication technologies in professional activity, taking into account the basic requirements of information security	Theoretical foundations of computer science, collection, storage, search, processing, transformation, dissemination of information in medical and biological systems, the use of information computer systems in medicine and healthcare.	Is able to: apply modern information and communication technologies to solve the tasks of professional activity; carry out an effective search for information necessary to solve the tasks of professional activity using reference systems and professional databases; use modern medical and biological terminology; master and apply modern information and communication technologies in professional activity, taking

					into account the basic requirements of information security	
4.	PC-7	Capable of assessing the clinical picture of diseases and conditions requiring emergency, emergency and palliative care for children	<p>IPC 7.1 Knows:</p> <ul style="list-style-type: none"> <li>- The clinical picture of diseases and conditions requiring emergency care for children</li> <li>- The clinical picture of diseases and conditions requiring emergency care for children</li> <li>- The clinical picture of diseases and conditions requiring palliative care for children</li> </ul> <p>IPC 7.2 is able to:</p> <ul style="list-style-type: none"> <li>- Evaluate the clinical picture of diseases and conditions requiring emergency care for children</li> <li>- Evaluate the clinical picture of diseases and conditions requiring emergency care for children</li> <li>- Evaluate the clinical picture of diseases and conditions requiring palliative care for children</li> </ul>	Principles and methods of first surgical care and emergency conditions.	Identify life-threatening disorders and provide first aid to victims in emergency situations in the affected areas, in emergency situations.	The basics of surgical medical measures to provide first aid in urgent and life-threatening conditions

#### **4. Sections of the academic discipline and competencies that are formed when mastering them**

No	Competence code	Section name of the discipline	The content of the section in teaching units
1.	UC-1; GPC-4; GPC-10; PC-7;	Introduction. The subject and objectives of experimental surgery.	1. The subject and objectives of the discipline.
2.	UC-1; GPC-4; GPC-10; PC-7;	Surgical instruments. The technique of applying surgical sutures and tying knots.	1. Tools and the ability to use them. 2. Nodes. 3. Seams.
3.	UC-1; GPC-4; GPC-10; PC-7;	Organization of work in the experimental operating room.	Preparation of the animal for surgery. The main stages of the operation.
4.	UC-1; GPC-4; GPC-10; PC-7;	Modeling of circulatory disorders.	A model of circulatory hypoxia. A model of respiratory hypoxia.
5.	UC-1; GPC-4; GPC-10; PC-7;	Laparotomy	Technique and stages of the operation.
6.	UC-1; GPC-4; GPC-10; PC-7;	Experimental transplantology.	General principles of organ and tissue transplantation. Dermatoplasty.

#### **5. Volume of the academic discipline and types of academic work**

##### **5.1. Distribution of labor intensity of discipline and types of academic work by semesters:**

Type of educational work	Labor intensity		Labor intensity (AH) in semesters
	volume in credit units (CU)	volume in academic hours (AH)	
			6
Classroom work, including	<b>0.6</b>	<b>22</b>	<b>22</b>
Lectures (L)	0.1	4	4
Laboratory practicum (LP)*	0.5	18	18
Student's individual work (SIW)	0.4	14	14
Mid-term assessment			
credit/exam ( <i>specify the type</i> )	1	1	1
<b>TOTAL LABOR INTENSITY</b>	<b>1</b>	<b>36</b>	<b>36</b>

#### **6. Content of the academic discipline**

##### **6.1. Sections of the discipline and types of academic work:**

No.	Name of the section of the academic	Types of academic work (in AH)	Evaluation tools

	discipline	L	LP	SIW	total	
1	Introduction. The subject and objectives of experimental surgery.	2	2		4	computer testing, essay.
2	Surgical instruments. The technique of applying surgical sutures and tying knots.		2		2	individual tasks.
3	Organization of work in the experimental operating room.	2	4	3	9	control work, interview on situational tasks, individual tasks.
4	Modeling of circulatory disorders.		5	3	8	Work in an experimental operating room, individual tasks. Essay.
5	Laparotomy.		5	5	10	Work in an experimental operating room, individual tasks. Essay.
6	Experimental transplantology.			3	3	control work, interview on situational tasks, computer testing, essay.
<b>TOTAL:</b>		4	18	14	<b>Total: 36</b>	

\* - L – lectures; LP – laboratory practicum; SIW – student's individual work.

## 6.2. Thematic schedule of educational work types:

### 6.2.1 Thematic schedule of lectures:

No.	Name of lecture topics	Volume in AH
		Semester 6
1	Introduction. The subject and objectives of experimental surgery.	2
2	Organization of work in the experimental operating room.	2
3	Experimental transplantology.	2
	<b>TOTAL (total - AH)</b>	<b>4</b>

6.2.2. The thematic plan of laboratory practicums (*if this type of classes is stipulated in the curriculum*):

### 6.2.3. Thematic plan of practicals:

No.	Name of the topics of practicals	Volume in AH
		Semester 6
1	The subject and objectives of experimental surgery. Surgical instruments. Separation and connection of tissues. Types of seams and knots.	4

2	Organization of work in the experimental operating room.	4
3	Modeling of circulatory disorders.	5
4	Laparotomy.	5
	<b>TOTAL (total - AH)</b>	<b>18</b>

6.2.4. Thematic plan of seminars (*if this type of classes is stipulated in the curriculum*):

#### 6.2.5. Types and topics of student's individual work (SIW):

No.	Types and topics of SIW	Volume in AH
		Semester 6
1	Preparation of a speech on the topics of Outstanding figures of medicine, outstanding medical discoveries, the influence of humanistic ideas on medicine.	3
2	Independent analysis of instruments "in the center of practical skills" and manipulation of basic general surgical instruments.	3
3	Preparation of reports on current topics.	6
4	Experimental transplantology	2
	<b>TOTAL (total - AH)</b>	<b>14</b>

### 7. Types of assessment formats for ongoing monitoring and mid-term assessment:

No.	Se me ste r No	Types of control	Name of section of academic discipline	Evaluation tools		
				Kinds	Number of questions in the task	Number of independent options
1	2	3	4	5	6	7
1.	6	Control of the development of the topic (control works).	1. Tasks of experimental surgery. 2. Surgical instruments. The technique of applying surgical sutures and tying knots.	Written verification work	5	5
				Individual survey	10	More than 10
2.	6	Control of the development of topics (control works).	1. Organization of work in the experimental operating room 2. Modeling of circulatory disorders. 3. Laparotomy.	Testing.	20	More than 10
				Written verification work	5	5
				Individual survey	10	More than 10

## **8. Educational, methodological and informational support for mastering the academic discipline (printed, electronic publications, the Internet and other network resources)**

### **8.1. Key literature references**

No.	Name according to bibliographic requirements	Number of copies
		In the library
1.	Topographic anatomy and operative surgery: textbook in 2 volumes/ I.I. Kagan. 2018.	1 volume – 55 2 volume – 60
2.	Operative surgery and topographic anatomy: textbook in 2 volumes/ A.V.Nikolaev. 2016.	1 volume – 90 2 volume – 90

### **8.2. Further reading:**

No.	Name according to bibliographic requirements	Number of copies
		In the library
1.	Operative surgery and topographic anatomy: textbook. G.E.Ostroverkhov, Y.M.Bomash, D.N.Lubotsky. 2005	50
2.	Fundamentals of topographic anatomy of the abdomen and abdominal surgery. G.A. Bulanov , V.Ya.Ovsyannikov. 2003.	80
3.	Text tasks. V.P.Vladimirov, I.I.Kagan 2006.	40

### **8.3. List of methodological recommendations for independent work of students:**

No.	Name according to bibliographic requirements	Number of instances
		At the department
1.	Methodological developments in experimental surgery for practical training.	10
2.	Methodological developments in operative surgery and topographic anatomy with elements of programmed control for students of the Faculty of Medicine. 2017.	25

### **8.4. Electronic educational resources for teaching academic subjects**

#### **8.4.1. Internal Electronic Library System of the University (IELSU)**

No	Name of the electronic resource	Brief description (content)	Access conditions	Number of users
1.	Internal Electronic Library System (IELS)	The works of the academic staff of the Academy: textbooks and manuals, monographs, collections of scientific papers, scientific articles, dissertations, abstracts of dissertations, patents.	from any computer located on the Internet, using an individual login and password [Electronic resource] – Access mode:	Not limited

			<a href="http://95.79.46.2/06/login.php">http://95.79.46.2/06/login.php</a>	
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#### 8.4.2. Electronic educational resources acquired by the University

<i>Nº</i>	<i>Name of the electronic resource</i>	<i>Brief description (content)</i>	<i>Access conditions</i>	<i>Number of users</i>
1.	Electronic database "Student Consultant"	Educational literature + additional materials (audio, video, interactive materials, test tasks) for higher medical and pharmaceutical education. Publications are structured by specialties and disciplines in accordance with the current Federal State Educational Standards of Higher Education.	from any computer located on the Internet, using an individual login and password [Electronic resource] – Access mode: <a href="http://www.studmedlib.ru/">http://www.studmedlib.ru/</a>	General PRMU subscription
2.	Electronic library system "Book up"	Educational and scientific medical literature of Russian publishers, including translations of foreign publications.	from any computer located on the Internet by login and password, from the computers of the academy. The subscription editions are available for reading. [Electronic resource] – Access mode: <a href="http://www.books-up.ru/">http://www.books-up.ru/</a>	General PRMU subscription
3.	"Bibliopisk"	Integrated "single window" search service for electronic catalogs, EBS and full-text databases. The results of a single search in the demo version include documents from domestic and foreign electronic libraries and databases available to the university as part of a subscription, as well as from open access	PRMU has access to the demo version of the Bibliopisk search engine: <a href="http://bibliosearch.ru/PRMU">http://bibliosearch.ru/PRMU</a> .	General PRMU subscription

		databases.		
4.	Domestic electronic periodicals	Periodicals on medical subjects and on higher school issues	- from the computers of the academy on the platform of the electronic library eLibrary.RU -journals of the publishing house "Mediasphere" - from library computers or are provided by the library at the request of the user [Electronic resource] – Access mode: <a href="https://elibrary.ru/">https://elibrary.ru/</a>	
5.	International scientometric database "Web of Science Core Collection"	Web of Science covers materials on natural, technical, social, and humanitarian sciences; takes into account the mutual citation of publications developed and provided by Thomson Reuters; has built-in capabilities for searching, analyzing, and managing bibliographic information.	Access is free from PRMU computers [Electronic resource] – Access to the resource at: <a href="http://apps.webofknowledge.com">http://apps.webofknowledge.com</a>	Access is free from PRMU computers

#### 8.4.3 Open access resources

<i>No</i>	<i>Name of the electronic resource</i>	<i>Brief description (content)</i>	<i>Access conditions</i>
1.	Federal Electronic Medical Library (FEML)	Includes electronic analogues of printed publications and original electronic publications that have no analogues recorded on other media (dissertations, abstracts, books, journals, etc.). [Electronic resource] –	from any computer located on the Internet

		Access mode: <a href="http://нэб.рф/">http://нэб.рф/</a>	
2.	Scientific Electronic Library eLIBRARY.RU	The largest Russian information portal in the field of science, technology, medicine and education, containing abstracts and full texts of scientific articles and publications. [Electronic resource] – Access mode: <a href="https://elibrary.ru/">https://elibrary.ru/</a>	from any computer located on the Internet
3.	Open Access Scientific Electronic Library CyberLeninka	Full texts of scientific articles with annotations published in scientific journals of Russia and neighboring countries. [Electronic resource] – Access mode: <a href="https://cyberleninka.ru/">https://cyberleninka.ru/</a>	from any computer located on the Internet
4.	Russian State Library (RSL)	Abstracts for which there are copyright agreements with permission for their open publication [Electronic resource] – Access mode: <a href="http://www.rsl.ru/">http://www.rsl.ru/</a>	from any computer located on the Internet
5.	Legal reference system "Consultant Plus"	Federal and regional legislation, judicial practice, financial advice, comments on legislation, etc. [Electronic resource] – Access mode: <a href="http://www.consultant.ru/">http://www.consultant.ru/</a>	from any computer located on the Internet
6.	Official website of the Ministry of Health of the Russian Federation	National clinical guidelines [Electronic resource] – Access mode: <a href="http://cr.rosminzdrav.ru">cr.rosminzdrav.ru</a> - Clinical recommendations	from any computer located on the Internet

## 9. Material and technical support for mastering an academic discipline

### 9.1. List of premises for classroom activities for the discipline

Part of the department is located at the address: 190 A. Rodionova Str.

On the ground floor of the academic building No. 4, there are 4 training operating rooms (№ 9; № 10; № 11; № 13).

Educational operating rooms are equipped with:

Furniture and demonstration equipment (plastic-coated tables, revolving stools, shadowless lamps, rack hangers, TV panel, portable personal computer (laptop), blackboard for the classroom).

A set of surgical instruments.

Simulators for mastering practical surgical skills;

- simulators for mastering the technique of tying surgical knots,
- simulators for mastering the technique of applying a vascular suture,
- simulators for mastering the technique of applying intestinal sutures,
- simulator for mastering the puncture of the shoulder joint,

- simulators for mastering the technique of cryostomy and tracheostomy,
  - simulators for mastering the technique of drainage of the pleural cavity,
  - simulator for mastering the technique of laparotomy and abdominal closure,
  - simulator for mastering plastic surgery of the inguinal hernia gate.
- A set of educational drawings and diagrams.

Siliconized anatomical preparations:

- Sagittal cut of the head.
- Upper floor of the abdominal cavity.

The room for laparoscopic and endoscopic manipulations is equipped with:

- furniture and demonstration equipment.
- a set of endoscopic instruments.
- simulators for mastering endoscopic surgical skills.

### **9.3. A set of licensed and freely distributed software, including domestic production**

<b>Item no.</b>	<b>Software</b>	<b>number of licenses</b>	<b>Type of software</b>	<b>Manufacturer</b>	<b>Number in the unified register of Russian software</b>	<b>Contract No. and date</b>
1	Wtware	100	Thin Client Operating System	Kovalev Andrey Alexandrovich	1960	2471/05-18 from 28.05.2018
2	MyOffice is Standard. A corporate user license for educational organizations, with no expiration date, with the right to receive updates for 1 year.	220	Office Application	LLC "NEW CLOUD TECHNOLOGIES"	283	without limitation, with the right to receive updates for 1 year.
3	LibreOffice		Office Application	The Document Foundation	Freely distributed software	
4	Windows 10 Education	700	Operating systems	Microsoft	Azure Dev Tools for Teaching Subscription	
5	Yandex. Browser		Browser	«Yandex»	3722	
6	Subscription to MS Office Pro for 170 PCs for FGBOU VO "PIMU" of the	170	Office Application	Microsoft		23618/HN10030 LLC "Softline Trade" from 04.12.2020

Ministry of Health of Russia				
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## 10. List of changes to the working program (to be filled out by the template)

Federal State Budgetary Educational Institution of Higher Education  
 "Privolzhsky Research Medical University"  
 Ministry of Health of the Russian Federation  
 (FSBEI HE "PRMU" of the Ministry of Health of Russia)

Department of

### **GENERAL, OPERATIVE SURGERY AND TOPOGRAPHIC ANATOMY named after A.I. KOZHEVNIKOV**

#### **CHANGE REGISTRATION SHEET**

working program for the academic discipline

#### **EXPERIMENTAL SURGERY**

Field of study / specialty / scientific specialty: **31.05.01 GENERAL MEDICINE**  
*(code, name)*

Training profile: **GENERAL PRACTITIONER**  
*(name) - for master's degree programs*

Mode of study: **FULL-TIME**  
*full-time/mixed attendance mode/extramural*

Position	Number and name of the program section	Contents of the changes made	Effective date of the changes	Contributor's signature
1				

Approved at the department meeting  
 Protocol No. \_\_\_\_ of \_\_\_\_\_ 20\_\_\_\_

Head of the Department of General, Operative Surgery and Topographic Anatomy named after A.I. Kozhevnikov, Professor, MD.

«\_\_\_\_» \_\_\_\_\_ 20\_\_\_\_. \_\_\_\_\_ Bazaev A.V.  
 (signature)