

**Topic Plan of Practical Classes on Clinical Anatomy and Operative Surgery
for Students of International Faculty**

№	The topics of practical classes	The studying questions	The list of practical skills
1.	Surgical instruments, sutures and dressings. Primary surgical treatment of penetrating and non-penetrating injuries of the cerebral part of the head. Surgical anatomy of the inner base of the skull.	The subject and tasks of topographical anatomy and operative surgery. Acquaintance with the departments of the chair. Arrangement and equipment of operating department. Classification of surgical operations. Groups of surgical instruments. Technique of disconnection and connection of soft tissues. Topographical anatomy of fronto-parieto-occipital region of head. Blood supply of brain, venous outflow. Non penetrating and penetrating skull injury. Primary surgical processing wounds of brain department of the head. Base of the skull. Meninges of brain. Topographical anatomy of anterior, middle and posterior cranial fosses. Localization of cranial nerves, vessels of base of brain. Blood supply of brain. Intermeningeal spaces. Sinuses of dura mater of brain. The sinuses of the hard brain covering and their connections with veins of the face and vault of the skull. Special surgical instruments.	1. Ownership by technique of disconnection and connection of the tissues. 2. Correct using of surgical instruments. Tying of surgical knots. 3. Preparation layer- by-layer of studying regions. 4. Finding places of way out of cranial nerves on skull.
2.	Clinical anatomy of the temporal area and the area of the mastoid process. Anthrotomy, bone-plastic and decompression trepanation of the skull.	Topographical anatomy of temporal of head. Kronlein-Brysov's scheme. Decompressive and osteoplastic trepanation of the skull. Trepanation of the skull. Anthrotomy (mastoidotomy). Special surgical instruments. Decompression trepanation: indications, technology of the execution, special toolbox. Special surgical instruments.	1. Executing of some stages trepanation of the skull.

3.	Clinical anatomy of the lateral part of the face. Anesthesia of the trigeminal nerve branches. Operations for chronic frontitis and sinusitis.	Topographical anatomy of lateral region of face. The face department of the head: borders, division by area, blood supply, venous and lymphatic outflow, innervation. Facial nerve, its branches. Parotid salivary gland. The topographical anatomy of parotidea-chewing area: borders, layers, vessels, nerves. Parotid Masseteric Region (Regio Parotidomassetericae) Cheek region (Regio Buccales) Connections of fat tissue spaces of head. The topographical anatomy of the deep area of the face: fat tissue space, vessels, nerves, venous net and their connections with sinuses of the hard brain covering and veins of the face. Temporal Pterygoid space(Spatium temporopterygoidea). The maxillary artery. The pterygoid venous plexus. The mandibular nerve. Pterygopalatine Fossa. Accessory cavities of nose. Fronto- and maxillary sinusotomy. Special surgical instruments.	1. On one's own preparation of regions. 2. Incisions at phlegmon of lateral region of face. 3. Executing of some stages of fronto- and maxillary sinusotomy.
4.	Borders, fascias, fatty spaces of the neck, division into triangles. Topographic anatomy of submandibular and carotid triangles of the neck.	Topographical anatomy of triangles, fasciae, fat tissue spaces of the neck. Submandibular (digastric) triangle. Carotid triangle.	1. On one's own preparation of regions.
5.	Clinical anatomy of the sternocleidomastoid area and the lateral triangle of the neck. Vago-sympathetic blockade by Vyshnevsky. Surgical interventions on the neck organs.	Topography of base vascular-nerve bundle of the neck. Cervical and Brachial Plexus Blocks. Vago-sympathetic novocaine blockade by Vishnevskiy. Incisions at phlegmon of the neck. Topographical anatomy of larynx, trachea, pharynx, esophagus. Thyroid gland. Conicotomy. Tracheostomy. Surgical accesses to esophagus. Resection of thyroid gland by Nikolaev.	1. Vagosympathetic novocaine blockade by Vishnevskiy. 2. Executing of tracheostomy. 3. On one's own executing of typical operations on neck.
6.	Surgical anatomy of the subclavian area, breast, chest wall, pleura and diaphragm. Puncture of the pleural cavity. Primary surgical treatment of penetrating chest wall injuries.	The topographical anatomy subclavian region. Subclavian vein puncture. The mammary glands: structure, topography, blood supply, venous and lymphatic outflow, innervations. The motivation of dissection by mastitis. Operations on the mastitis's, nonmalignant tumors and cancer of the breast. The topographical anatomy of the thorax: borders, orientation lines. The thoracic wall: layers, intercostal space. The intercostals space and its contains. The cavity of the thorax. Pleural and pericardial cavities, interpleural areas (triangles). The topographer-anatomical motivation of pleural puncture. The diaphragm: parts, weak places, blood supply, venous and lymphatic outflow, innervations. Pleural puncture. Resection of the rib: indications, contraindications and technique. The preventive surgical processing of penetrating and not penetrating thoracic wounds complicated with the fractures of the ribs, pneumo- and hemothorax.	1. Preparation of regions; 2. Subclavian vein puncture. 3. Operations on the mastitis's. 4. Pleural puncture; 5. Resection of the rib.

7.	The mediastinum and its departments. Surgical anatomy of the lungs. Heart and pericardial surgery.	<p>Mediastinum: classifications, divisions, the contents. Surgical anatomy of the organs of anterior mediastinum: the great vessels, thymus, diaphragmatic nerves. Trachea. The ascending aorta and aortic arch. The lungs: holotomy, skeletopy, syntopy. The topography of lung's roots, lobes, segments; vascularization, venous and lymphatic outflow, innervations.</p> <p>Operations on the lungs and mediastinum: the accesses, its topographic anatomy's basing and clinical estimation. Pulmonectomy, lobectomy, segmental resection.</p> <p>The puncture of the pericardial cavity. Operations on the heart and great vessels. The common principles of operations on the congenital and acquired vices of the heart. The mitral commissurotomy. The operative accesses to the heart. The technique of the stitches of the heart wound. The heart-lung-apparatus: the main modules, the principles of work, the functional estimation and demands to it. The aorto-coronal bypass.</p>	<ol style="list-style-type: none"> 1. Preparation of anterior mediastinum; 2. Operations on the lungs and mediastinum. 3. Preparation of posterior mediastinum; 4. Puncture of the pericardial cavity.
8.	Surgical anatomy of the posterior mediastinum. Esophageal surgery.	The organs of posterior mediastinum: esophagus, descending thoracic aorta, azygos and hemiazygos veins, ductus thoracicus, vagus and splanchnicus nerves, sympathetic trunks. Esophagotomy, the resection and plastics of the esophagus. The surgical treatment of the atresia of the gullet.	1. Operations on the esophagus and posterior mediastinum.
9.	Surgical anatomy of the anterolateral abdominal wall. Surgical treatment of umbilical hernias and hernias of the white line of the abdomen. Surgical anatomy and surgical treatment of inguinal hernias.	<p>Antero-lateral abdominal wall. Orientation lines. The division into areas. The projection of organs of abdominal cavity; vascularization, innervations, layers, weak places. The topography of umbilical region and white line.</p> <p>The operative accesses to the peritoneal cavity's organs: the demands, classification, different types of the laparotomy. The laparocentesis, laparoscopy, laparostomy. The surgical treatment of the umbilical hernias and hernias of white line. The features of herniotomy in child. The strangulated and sliding hernias.</p> <p>The inguinal region, triangle, space. The inguinal canal: walls, contains, rings. The spermatic cord. The abdominal hernias. Classification of hernias. Meaning of congenital, retrograde, sliding and strangulated hernias. The hernias elements. The surgical treatment of the inguinal hernias.</p>	<ol style="list-style-type: none"> 1. Preparation of antero-lateral abdominal wall regions; 2. Performance of laparotomy; 3. The surgical treatment of the herniotomy. 4. The surgical treatment of the herniotomy.
10.	Clinical anatomy and operative surgery of the peritoneum and organs of the upper abdominal cavity.	<p>The abdominal cavity, the peritoneal cavity. The peritoneum, variants of covering of the organs by the peritoneum. The levels of the abdominal cavity, their borders. The hepatic, pregastric and omental bursa, their connections. The ways of enlargement of the pus. The small omentum, its contents. Topography of large omentum. The ligaments, recessuses, channels, sinuses and other derivations of peritoneum. The connections of lower floor of the peritoneal cavity with the upper floor and with cavity of pelvis.</p> <p>The topographic anatomy of liver, pancreas, spleen. Structure, ligaments, holotomy, skeletopy, syntopy,</p>	<ol style="list-style-type: none"> 1. Preparation of peritoneum and its derivations; 2. A finding on the corpse of mesenterial sinus, channels. 3. Preparations of hepatoduodenal ligament. 4. Performance of haemostatic sutures of liver.

		<p>blood supply, innervations, lymphatic outflow. The topographic anatomy of the gall bladder and the bile ducts.</p> <p>The temporary and definitive hemostatic methods of liver bleedings. The stitches of Kuznetsov-Pensky. The splenectomy. The common principles of performance of the operations on the pancreas. The operations on the gall bladder and the bile ducts: the cholecystectomy, the cholecystostomy, the external and internal drainage of the common bile duct (the choledochostomy).</p>	<p>5. Performance on the corps of the cholecistostomy, cholecistectomy, the splenectomy.</p>
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11.	<p>Clinical anatomy and operative surgery of the stomach and lower abdominal organs.</p>	<p>The topographic anatomy of small intestine. Differential signs between ileum and jejunum. Structure, holotopy, skeletopy, syntopy, blood supply, innervations, lymphatic outflow. Blood supply, innervations of great intestine, lymphatic outflow.</p> <p>The intestinal stitches: the demands to them, the classification and the operative technique. The different types of intestinal anastomosis. The palliative and radical operations on the small intestine.</p> <p>The topographic anatomy of great intestine. Structure, holotopy, skeletopy, syntopy, blood supply, innervations, lymphatic outflow. The top. anatomy of ileocecal angle, appendix, great intestine. Differential signs between small and great intestine. Variability of ileocecal angle and appendix. Blood supply, innervations of great intestine, lymphatic outflow.</p> <p>Operations on the great intestine. The appendectomy: the kinds, the technique of performing. The palliative and radical operations on the great intestine: the colotomy, the colostomy (the ceco-, transverse- and sigmoidostomy). The operation of performing the preternatural anus (uni- or bi-shaft one).</p> <p>The topographic anatomy of stomach and duodenum: holotopy, skeletopy, syntopy, ligaments, blood supply, innervations, lymphatic outflow.</p> <p>The palliative and radical operations on the stomach: the gastrotomy and the gastrostomy. The resection of the stomach: the classification and the technique of performing. The organretentive operations on the stomach (the vagotomy: the truncular, the selective and the proximal selective ones). The drainage and reconstructive operations on the stomach.</p>	<p>1. Performance of the small bowel resection and the different kinds of the entero-entero anastomy (end-to-end, end-to-side, side-to-side);</p> <p>2. Performance of the colotomy, cecotomy.</p> <p>3. Performance of gastrostomy;</p> <p>4. Performance of the resection of the stomach;</p> <p>5. Performance on the corps of the gastroenteroanastomy.</p>
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12.	Clinical anatomy of the lumbar region, spine, spinal cord and retroperitoneal space. Operations on the spine, kidneys and ureters.	Lumbar area: borders, layers, weak places, blood supply, innervations, weak places. Fascia and fat layers of the retroperitoneal space. Vertebral column, its flexures, ligaments. Contents of the vertebral channel: spinal cord, its envelopes, intermeningeal spaces. Epidural venous plexuses. The paranephral Novocain blockade after A.V.Vishnevsky. Topographo-anatomic substantiation of the paranephral novocain blockade. Lumbar puncture. An anatomic substantiation of engineering of epidural and subdural anesthesia. The operations on the vertebral column: the opening of the vertebral canal (laminectomy). Topography of kidneys, ureters, suprarenal gland, abdominal aorta, vena cava inferior, nervous plexuses. Structure, holotopy, skeletopy, syntopy, blood supply, innervations of kidneys, suprarenal gland and ureters, lymphatic outflow. Capsules of kidney, fixating apparatus. Branches of abdominal aorta, tributaries of vena cava inferior. Lumbar plexus. The operative accesses to the kidneys and ureters. The resection of the kidney, the nephrectomy. The common principles of the plastics operations on the ureters. The stitches of the ureter.	<ol style="list-style-type: none"> 1. Preparation of lumbar area. 2. Performance of paranephral Novocain blockade. 3. Performance of operative accesses to the kidneys; 4. Performance of the nephrectomy 5. Preparation of pelvic vessels and nerves; 6. Performance of the dissections by paraproctitis.
13.	Clinical anatomy and operative surgery of the pelvis.	Pelvis: orientates, borders. Bone basis of pelvis, ligaments, parietal and visceral muscles, fascias. Fat layers (spaces) and their communication with other areas. Division of pelvis into floors. A course of peritoneum in man's and female pelvis. Internal iliac artery, its branches, venous and nervous plexuses, lymphatic outflow. Diaphragm of pelvis: urogenital and anal. Topography of man's and female perineum. Blood supply, innervations. The Alcock channel. Ischiorectal fossa. The topographic anatomy of scrotum and testicles. The drainage of the pelvic fat spaces after the McWorter and after P.A.Kupriyanov. The blockade of the pelvic nerves after Shkolnikov-Selivanov. The common principles of operations on phimosis, paraphimosis, cryptorchidism. The Vinkelmann's operation on hydrocele. Topography of urinary bladder, urethers. Topography of prostate, vesica seminalis and spermatic duct. Uterus (metra), uteral tube, ovaries, ligaments, vessels and nerves. Rectum: parts, covering by peritoneum, sphincters, blood supply, innervation, venous and lymphatic outflows. The operative accesses to the pelvic organs. The puncture, opening and drainage of urinary bladder (sectio alta). The operations on extra-uterine (or abdominal) pregnancy. The puncture of the Douglas's depression (excavatio rectouterina). The operation of removing of the prostate (adenomectomy or prostatectomy). Rectopexy. Surgical treatment of hemorrhoid, paraproctitis and tumors of rectum.	<ol style="list-style-type: none"> 1. Preparation of pelvic organs; 2. Performance of the operations on uterine tube

14.	Clinical anatomy and operative surgery of the gluteal region, hip joint and thigh.	<p>The topographical anatomy of gluteus area: borders, layers, vessels, nerves. Injury to superior gluteal nerve. The superior and inferior gluteal veins and arteries. The topographical anatomy of the back area of thigh: borders, layers, vessels, nerves. The topographical anatomy of hip joint: construction, the form, volume of the motion, ligaments. The incisions at phlegmons of hip joint. The puncture of hip joint. The indications, technology of the execution. The accesses to Sciatic Nerve.</p> <p>The topographical anatomy of lower limb: division on area, the sources of blood supply and innervation. Venous and lymphatic outflow. The topographical anatomy of the front area of thigh: borders, layers, vessels, nerves. The borders, bottom and vascular bunch of the hip triangle. Muscular and vessel lacunas, their walls and contents. The topographical anatomy of the hip channel: walls, holes, the contents. The bringing channel: walls, holes, the contents. The determination of the hernia. The elements of the hernia. The classification of the hernias. Herniotomy by Bassini. The advantages and defects. The technology of the execution. The operations at groin hernia. The technology of the execution (by Bassini, Rudzhi- Parlavechcho).</p>	<ol style="list-style-type: none"> 1. Preparation of gluteus area vessels and nerves. 2. The puncture of hip joint. 3. The accesses to Sciatic Nerve. 4. Preparation of the front area of thigh. 5. Performance of the operations at groin hernia. The technology of the execution (by Bassini, Rudzhi – Parlavechcho).
15.	Clinical anatomy and operative surgery of the knee, knee joint, lower leg, retromalleolar medial region and foot.	<p>The topographical anatomy of the front area of the knee: borders, layers. The topographical anatomy of the knee joint: construction, the form, volume of the motion, ligaments. The topographical anatomy of the back area of the knee: borders, layers. The topographical anatomy of popliteal fosse, her contents. The arterial network of the knee joint. Cruro-popliteal channel: walls, holes and contents. Arthrotomy of the knee joint. The indications, accesses, technology of the execution. The resection of the knee joint by Tekstor. The indications, technology of the execution. The resection of the knee joint by Kornev. The indications, technology of the execution. Superior and inferior muscular-peroneal canals. Topographical anatomy of ankle joint Topography of foot. Incisions at phlegmon of leg and foot. Projection of vessels and nerves, accesses to them.</p>	<ol style="list-style-type: none"> 1. Preparation of the of popliteal fosse. 2. Performance of the resection of the knee joint by Tekstor and by Kornev. Accesses to vessels and nerves.
16.	Clinical anatomy and operative surgery of the scapular region, axillary region, deltoid region, arm region and shoulder joint.	<p>Topographical anatomy of scapular, axillary's, deltoid, subclavian, arm regions. Trilateral and quadrilateral foramens. Canal of radial nerve. Scapular arterial network. Ways spreading of phlegmon. Incisions at phlegmon of region above upper arm and shoulder region. Projection lines of vessels and nerves, accesses to them. Resection of shoulder joint after Langenbeck and Chaclin.</p>	<ol style="list-style-type: none"> 1. On one's own preparation of regions. 2. Accesses to vessels and nerves of region above upper arm and shoulder region.

17.	<p>Clinical anatomy and operative surgery of the regions of elbow, forearm, wrist and hand. Vessels operations. Amputations and disarticulations.</p>	<p>Topographical anatomy of elbow region, regions of forearm, hand and fingers. Grooves, canals and fat tissue layers of this regions. Arterial network of elbow joint. Ways spreading of purulent processes. Relationships of elements of neurovascular bundles. Projection of vessels and nerves, accesses to them.</p> <p>Operations at phlegmon of hand and fingers. Puncture and arthrotomy of elbow joint. Puncture of wrist joint. Suture of vessels, nerves, tendons. Ligation arteries «on length». Conception of collateral and reduced blood supply. Operative treatment of varicose veins of lower extremities.</p> <p>Common principles, stages of amputations and disarticulations. Estimation length of skin flaps at amputation. Amputation of arm. Amputation of forearm. Technique of disarticulation of phalanx and fingers. Threemoment amputation by Pirogov. Bone-plastic amputation of thigh by Gritti-Shimanovsky. Bone-plastic amputation of leg by Pirogov. Amputation of leg on length. Amputation of foot by Sharp. Disarticulation of foot by Lisfranc and Shopar. Disarticulation of fingers of foot by Garanzho. Puncture and arthrotomy of hip joint. Puncture, arthrotomy, resection of knee joint. Puncture, arthrotomy, resection of the ankle joint.</p>	<p>1. On one's own preparation of regions. Incisions at phlegmon of hand.</p> <p>2. Accesses to vessels and nerves.</p> <p>3. Accesses to vessels and nerves.</p> <p>4. Performing some stages of amputations and disarticulations of upper limb. Executing of some stages of amputations and disarticulations on lower extremity.</p> <p>5. Surgical operations on joints of lower extremities.</p>
18.	<p>Differentiated test in the discipline "Clinical Anatomy and Operative Surgery"</p>	<p>Answering the questions, students on the physical body demonstrate applied aspects of clinical anatomy, techniques of surgical interventions, knowledge of surgical instruments and the ability to use them.</p>	