

PLAN
of Practical Classes on Topographic Anatomy and Operative
Surgery for 4th year students training in specialty «General
Medicine»
7th semester of 2026–2027 academic year

Amount of academic hours per semester – 40

Duration of one class – 5 hours

Number of classes – 8

Class № 1

Topic: Topographic anatomy of the anterolateral abdominal wall. Surgical anatomy of external abdominal hernias.

Class content:

1. Abdomen, abdominal cavity (abdominal cavity): definition of concepts, boundaries, external landmarks; abdominal walls.
2. Anterolateral abdominal wall: regions, layered structure, vessels and nerves, vascular anastomoses.
3. Projection of abdominal organs onto the anterolateral abdominal wall.
4. Linea alba of the abdomen, topographic anatomy of the umbilical region.
5. Structure of the rectus abdominis sheath.
6. Weak points of the anterolateral abdominal wall.
7. Inguinal region, inguinal space.
8. Inguinal canal, inguinal triangle (Hesselbach's triangle), umbilical folds, inguinal fossae.
9. Topography of the spermatic cord, its membranes and elements.
10. Descent of the testicles and formation of the inguinal canal.
11. Topographic and anatomical substantiation of cryptorchidism, hydrocele and spermatic cord.
12. Hernia: definition of the concept, elements (components) of a hernia, classification of hernias, stages of herniotomy.
13. Surgical anatomy of hernias: direct, oblique and congenital inguinal, umbilical, linea alba of the abdomen.

Practical skills: determination of external landmarks and boundaries of the areas of the anterolateral abdominal wall, determination of the projection of organs on the anterolateral abdominal wall.

Class № 2

Topic: Operative surgery of abdominal hernias. Topographic anatomy of the peritoneum and abdominal cavity.

Class content:

1. Stages of hernioplasty.
2. Topographic and anatomical basis and technique of performing operations for oblique inguinal hernia (plasty according to Martynov, Girard-Spasokukotsky with Kimbarovsky suture), for direct inguinal hernia (plasty according to Bassini). Plastic surgery using the Desard method. Hernioplasty using the non-tension method according to Lichtenstein.
3. Operations for umbilical hernia (plasty of hernial orifices according to Mayo, Sapezhko, Lexer; using a synthetic patch).
4. Topographic-anatomical basis of diaphragmatic hernias. Hernioplasty.
5. Femoral canal. Femoral hernias. Surgical treatment of femoral hernias (inguinal and femoral methods).
6. Laparoscopic operations for hernias (total preperitoneal hernioplasty (TEP-Totally Extraperitoneal), transabdominal preperitoneal hernioplasty (TAPP- Trans Abdominal Pre-Peritoneal)).
7. Features of surgical intervention for congenital, strangulated and sliding hernias.

8. Topographic and anatomical rationale, and technique for performing operations: testicular descent in cryptorchidism; in hydrocele (according to Winkelmann, according to Bergman).
 9. Peritoneum, peritoneal cavity. Extraperitoneal space (retroperitoneal, retropubic, retroinguinal spaces).
 10. Topography of the intra-abdominal fascia.
 11. Topography of the peritoneum: ligaments, folds, omentums, mesentery; abdominal cavity floors; lesser omentum, omental bursa, pockets (depressions) of the upper floor.
 12. Topography of the peritoneum in the lower floor of the abdominal cavity.
 13. Mesenteric sinuses, lateral canals (paracolic grooves), pockets (depressions). Abdomen, abdominal cavity (abdominal cavity): definition of concepts, boundaries, external landmarks; abdominal walls.
- Practical skills:** Surgical instruments for hernioplasty. Hernioplasty on simulators.

Class № 3

Topic: Intestinal sutures. Topographic anatomy and operative surgery of the stomach and small intestine.

Class content:

1. Intestinal sutures: infected ("dirty"), uninfected ("clean"), single-row, multi-row, interrupted, continuous, manual, mechanical.
2. Technique of intestinal sutures: interrupted sutures - Jaubert, Mateshuk; continuous sutures - simple continuous suture, inverting suture (Schmiden suture); interrupted serous-muscular suture (Lambert suture); double-row intestinal suture - serous-muscular + through suture (Albert suture).
3. Topographic anatomy of the small intestine and its mesentery. Structure of the intestinal wall
4. Access to abdominal organs during open and laparoscopic interventions.
5. Suturing intestinal wounds.
6. Intestinal resection: indications, stages of the operation (surgical access, determination of the length of the resected section and its mobilization, imposition of end-to-end and side-to-side anastomoses, suturing of the mesentery).
7. Vitelline duct, variants of its non-closure. Meckel's diverticulum. Removal of Meckel's diverticulum.
8. Topographic anatomy of the stomach.
9. Gastrostomy: tubular (according to Witzel, Kader) and labial (according to Toprover), percutaneous endoscopic, laparoscopic.
10. Gastroenterostomy. Anterior antero-colic and posterior retro-colic gastroenteroanastomosis.
11. Suturing of a perforated gastric ulcer. Gastric resection according to Bilroth I, Bilroth II, Bilroth II modified by Hofmeister-Finsterer.

Practical skills: surgical instruments for gastrointestinal tract operations. Laparotomy technology. Sutures - Jaubert, Mateshuk, Schmidt, Lambert, Albert. Application of anastomosis "end to end" and "side to side".

Class № 4

Topic: Topographic anatomy and operative surgery of the liver, gallbladder, bile ducts, pancreas and spleen.

Class content:

1. Topographic anatomy of the liver, gallbladder and extrahepatic bile ducts.
2. Topographic anatomy of the pancreas and spleen.
3. Ultrasound anatomy of the liver, gallbladder, bile ducts, pancreas, and spleen.
4. Liver resection: typical (anatomical) and atypical, liver sutures (nodular, Kuznetsov-Pensky, Oppel).

5. Liver transplantation.
 6. Gallbladder surgeries: approaches, cholecystectomy from the "neck" and "bottom".
 7. Laparoscopic cholecystectomy.
 8. Choledochotomy, papillosphincterotomy (endoscopic and transduodenal).
 9. Drainage of the common bile duct according to Kehr, Halsted-Pikovsky. Percutaneous transhepatic drainage of the bile ducts.
 10. Fundamentals of ultrasound diagnosis of gallstone disease and calculous cholecystitis.
 11. Biliodigestive anastomoses (choledochoduodenal anastomosis, hepaticoenteroanastomosis).
 12. Pancreatoduodenal resection.
 13. Surgical approaches and drainage of the omental bursa.
 14. Suturing the spleen wound. Splenectomy
- Practical skills:** consolidation of practical skills acquired in previous classes.

Class № 5

Topic: Topographic anatomy and operative surgery of the large intestines.

Final lesson on topographic anatomy and operative abdominal surgery (topics 1-5)

Class content:

1. Topographic anatomy of the colon.
2. Ultrasound anatomy of the colon and appendix.
3. Surgical approaches to the appendix (according to Volkovich-Dyakonov, Lennander, transverse), the technique of widening the wound in case of an atypical position of the appendix.
4. Appendectomy technique.
5. Laparoscopic appendectomy.
6. Ultrasound anatomy of acute appendicitis.
7. Colon resection (hemicolectomy).
8. Colostomy (on the sigmoid colon).
9. Operation of creating an artificial anus.

Practical skills: to create a set of tools for appendectomy, to consolidate practical skills acquired in previous classes.

Class № 6

Topic: Topographic anatomy and operative surgery of the lumbar region, retroperitoneal space, pelvic organs and perineum.

Class content:

1. Lumbar region: borders, external landmarks, layered structure, weak points.
2. Retroperitoneal space: borders, fascia, layers of cellular tissue, their communication with other cellular spaces.
3. Topography of the kidneys, ureters, adrenal glands.
4. Topography of the abdominal aorta.
5. Topography of the inferior vena cava. Cava-caval and portocaval anastomoses.
6. Topography of the thoracic duct and sympathetic trunk.
7. Extraperitoneal (Fedorov, Bergman-Israel) and transperitoneal approaches to the kidney.
8. Pyelotomy, nephrostomy, kidney resection, nephrectomy, kidney transplantation.
9. Ureteral suture.
10. Abdominal aortic aneurysms and principles of aneurysm surgery.
11. Ultrasound anatomy of the kidneys and the abdominal aorta.
12. Bony base of the pelvis, pelvic cavity, perineum, topographic anatomy of the external genitalia, urogenital and pelvic diaphragms, pelvic floor.
13. Fascia and cellular spaces of the pelvis.
14. Topography of the urogenital peritoneum. Floors of the pelvis.
15. Topography of the iliac vessels.
16. Topography of the pelvic organs (rectum, anal canal, bladder, ureter, prostate gland,

- urethra, uterus, uterine appendages, vagina).
17. Puncture of the bladder.
 18. Cystostomy.
 19. Suturing the bladder wound.
 20. Operations for paraproctitis, rectal fistula, hemorrhoids, rectal cancer.
 21. Caesarean section, ectopic pregnancy.
 22. Topographic and anatomical rationale for puncture of the posterior vaginal fornix, opening of pelvic abscesses through the rectum and vagina.
 23. Surgical approaches to the prostate gland (transvesical, retropubic, perineal, transurethral).
 24. Surgical interventions on the prostate gland (transvesical adenomectomy, prostatectomy, transurethral resection of the prostate gland).
 25. Principles of operations for varicose veins of the spermatic cord: Ivanisevich, endovascular and laparoscopic.
 26. Application of the e-FAST protocol during ultrasound examination of a patient with severe trauma.

Practical skills: determination of external landmarks of the lumbar region and perineal areas.

Class № 7

Topic: Development of practical skills in surgical departments of healthcare organizations.

Class content:

1. Repetition of practical skills that were covered in the departments of general surgery and operative surgery and topographic anatomy.
2. Analysis of medical records of inpatients with the study of the rules for drawing up surgical protocols.
3. Topographic and anatomical substantiation of the description of the local status.
4. Manual (hand and instrumental) technique of tying a simple, sea and surgical knot.
5. Technique of purse-string, Z-shaped sutures. Purpose of use.
6. Cutaneous and intradermal sutures. Rules for removing sutures.
7. Determine the type, purpose and other characteristics of suture material based on the notes on the packaging. Select suture material for sutures on the skin, intestine, vessels, nerves.
8. Methods and techniques for stopping arterial bleeding.
9. Analysis of medical records with specialized pathology.
10. Holo- and skeletotomy of the internal organs of the abdominal cavity when visualizing them using the X-ray method (radiographs) and by the ultrasound method (interpretation of sonograms).
11. Topographic and anatomical justification for choosing the location of the formation of artificial fistulas. Determine the type of fistula on a mannequin (tracheostomy, gastrostomy, colostomy, ileostomy, pistostomy).
12. Topographic and anatomical justification for the use of three-lumen probes to stop bleeding from varicose veins of the esophagus and stomach (Blackmore probe).
13. Be able to and know the procedure for inserting, filling and emptying the cuffs, fixing and removing the probe.
14. Know the topographic and anatomical rules that affect the duration of use of the probe.

Certification form – credit: pass/fail.

NB:

1. **Absence from class** – fail with work-off in the established manner.
2. **Classes are held at the UZ "3rd City Clinical Hospital named after E.V. Klumova"** on the basis of the Department of General Surgery in the surgical building in the office of Associate Professor Bovtyuk N.Ya. at the address: Lenin Str., 30.
3. **Mandatory dress code for attending classes:** surgical suit, hat, mask, change of

shoes, shoe covers.

4. **In the absence of uniform, the student is not allowed to attend the class.** Missing classes is considered unexcused and is subject to work-off.

5. **Self-study work:** improving practical skills.

Class № 8

Topic: Practicing practical skills in the training operating room of the department.

Final on practical skills

Class content:

Performing surgical operations and manipulations in compliance with the principles of asepsis, antisepsis and safety precautions on biological material or dummies (simulators):

- inguinal canal plastic surgery for inguinal hernias;
- application of a hemostatic clamp;
- ligation of vessels (in a wound, along the length, with suturing, using a Deschamps ligature needle);
- tissue dissection with a scalpel;
- laparotomy technique;
- intestinal sutures;
- appedectomy;
- suturing of intestinal wounds;
- application of skin sutures;
- vascular suture;

Methodological materials for classes №1–8:

- 1) ETEST (electronic educational and methodological complex) on the intranet website of BSMU if any problems arise, contact: internet@bsmu.by or the department of operative surgery and top. anat., senior lecturer N.S. Anisova, office 220
- 2) educational slides and other materials on flash drives issued for practical classes with TVs.
- 3) we recommend the website (<https://www.youtube.com>) for watching educational films on the subject.

NOTE: all classes last 5 academic hours (break – 20 minutes).

Recommended literature

Main:

1. Topographical anatomy and operative surgery: textbook for English-speaking foreign students / Tsyhykalo O. V. – 2nd ed. – Vinnytsia: Nova Kniha, 2017. – 528 p.: il.

Additional:

1. Hansen, J.T. Netter's Clinical Anatomy / Hansen, John T. – 3rd edition. - Philadelphia: Elsevier, 2014. – 546 p.: ill.
2. Netter's Surgicall Anatomy and Approaches / Netter Frank H. Philadelphia: Elsevier, 2014. – 673 p.: ill.

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and Operative Surgery

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