



SYLLABUS OF THE EDUCATIONAL COMPONENT CLINICAL ANATOMY AND OPERATIVE SURGERY

Speciality: **222 «Medicine»**

Educational and professional program: **Medicine**

Component code in the educational program: **MC 20**

Higher education level: **second (master's degree)**

Form of education: **full-time**

Year of study: **2**

Semester(s): **III, IV**

Type of educational component: **mandatory**

Academic year: **2025-2026**

Volume: **3,5 credits ECTS (105 hours)**

Training sessions: **lectures, practical classes**

Final control: **graded credit**

Prerequisites: **studied topics of MC7, MC8**

Department/Unit: **Department of Human Anatomy, Clinical Anatomy and Operative Surgery, 12Nezalezhnosti Ave.**

Head of the educational component: **Assoc. Prof. Nataliia Konoval**

Page of the educational component in the Distance Learning System of KhNMU (Moodle):

<https://distance.knmu.edu.ua/course/view.php?id=471>

DESCRIPTION OF THE EDUCATIONAL COMPONENT

Clinical Anatomy and Operative Surgery is an applied science based on the integration of theoretical knowledge and research methods of human anatomy with both classical and modern clinical research techniques. The course focuses on the topography of internal organs and structures, providing a morphological rationale for surgical approaches and the techniques of operative interventions aimed at the elimination or correction of surgical pathologies.

The educational component "Clinical Anatomy and Operative Surgery" is taught to second-year medical students over the course of one semester, with a total workload of 3.5 ECTS credits (105 hours), including 48 in-class (contact) hours and 57 hours of student self-study (independent work).

PURPOSE OF THE COURSE: To acquire systematic knowledge of human body structure across various anatomical regions and to develop practical skills in performing topographic-anatomical surgical approaches and operative techniques, while familiarizing students with the fundamental principles of surgical treatment methods.

LEARNING OUTCOMES:

Upon completion of the course, the student should be able to demonstrate knowledge of:

- The general principles of the layered structure of the human body;
- Clinical anatomy of specific body regions;
- Clinical anatomy of internal organs;
- Clinical anatomy of fascial spaces and neurovascular bundles;
- Clinical anatomy of the skull and vertebral column;
- Clinical anatomy of the upper and lower limbs;
- Collateral circulation in cases of major vessel occlusion;
- Intrasystemic and intersystemic arterial anastomoses;
- Intrasystemic and intersystemic venous anastomoses;
- Age-related and individual variations in the structure, shape, topography, and syntopy of internal organs and other anatomical structures;
- Fundamental principles and techniques of using surgical instruments;
- Principles of primary surgical debridement of wounds;
- Main stages of basic operative interventions;

- Principles of performing major surgical procedures.

CONTENT OF THE EDUCATIONAL COMPONENT

List of lecture topics (12 hours):

1. Introduction to Clinical Anatomy and Operative Surgery.
2. Clinical Anatomy and Operative Surgery of the Neurocranium and Viscerocranium (Cranial and Facial Regions of the Head).
3. Clinical Anatomy and Operative Surgery of the Neck Regions, Cervical Organs, and Chest Wall.
4. Clinical Anatomy and Operative Surgery of the Lungs, Mediastinal Organs, Heart, and Pericardium.
5. Clinical Anatomy and Operative Surgery of the Anterolateral Abdominal Wall and Abdominal Organs.
6. Laparotomy. Intestinal Suture. Anastomoses.

List of topics of practical / laboratory classes / seminars (36 hours):

1. Introduction to Clinical Anatomy and Operative Surgery. Surgical Instruments and Stapling Devices. Basic Surgical Techniques.
2. Clinical Anatomy and Operative Surgery of the Cranial Regions and Endocranial Contents.
3. Clinical Anatomy of the Facial Region. Operations for Pyogenic and Inflammatory Processes of the face.
4. Clinical Anatomy of the Neck Regions. Triangles, Fasciae, and Fascial Spaces of the neck. Exposure and Ligation of the External and Common Carotid Arteries.
5. Clinical Anatomy and Operative Surgery of the Cervical Organs. Tracheostomy.
6. Clinical Anatomy and Operative Surgery of the Chest Wall and the Mammary Gland.
7. Clinical Anatomy and Operative Surgery of the Lungs, Pleura, Organs of the Anterior and Posterior Mediastinum, Heart, and Pericardium.
8. Clinical Anatomy and Operative Surgery of the Anterolateral Abdominal Wall. Surgical Anatomy and Operative Treatment of Inguinal, Femoral, Umbilical, and Linea Alba Hernias.
9. Clinical Anatomy of the Supracolic and Infracolic Compartments of the Abdominal Cavity.
10. Operations on the Abdominal Organs. Intestinal Suture. Bowel Resection.
11. Appendectomy. Operations on the Large Intestine (Colon).
12. Operations on the Stomach.
13. Operations on the Liver, Gallbladder, Biliary Tract, and Pancreas.
14. Clinical Anatomy and Operative Surgery of the Lumbar Region.
15. Clinical Anatomy and Operative Surgery of the Pelvic Walls and Pelvic Organs.
16. Clinical Anatomy and Operative Surgery of the Upper Limb.
17. Clinical Anatomy and Operative Surgery of the Lower Limb.

List of topics of independent work of the student (57hours)

1. Clinical Anatomy of Peritoneal Structures.
2. Topographic Rationale for the Surgical Treatment of Pancreonecrosis.
3. Clinical Anatomy of the Liver.
4. Clinical Anatomy of the Cervical Fasciae and Fascial Spaces of the Neck.
5. Clinical Anatomy of the Sternocleidomastoid Region.
6. Catheterization of the Subclavian Vein.
7. Congenital Heart Defects. Endovascular Treatment Methods.
8. Lung Resection.
9. Laparoscopic Methods for Hernia Repair, Cholecystectomy, and Appendectomy.
10. Chest Trauma (Thoracic Injuries).
11. Modern Methods of Hernia Repair (Hernioplasty).

12. Pneumothorax.
13. Cardiac Surgery (Extracorporeal Circulation / Cardiopulmonary Bypass).
14. Operations on the Facial Region of the Head.
15. Tracheal Intubation.
16. Incisional (Postoperative) Hernias.
17. Amputations and Disarticulations of the Limbs. Principles of Joint Punctures, Arthrotomies, Resections, Arthroplasty, and Arthrodesis. Bone Surgery. Principles of Extramedullary and Intramedullary Osteosynthesis.

The IWS is aimed at deepening and consolidating the theoretical knowledge gained during classroom training and contributing to the formation of professional competencies. The results of the IWS are subject to control and are included in the final control of knowledge.

Consultations: offline/online, according to the schedule of the department or by pre-registration, indicating the method of registration.

Teaching methods: lectures, practical exercises and hands-on training, case-based learning, situational problem-solving, and the standardized patient method.

EVALUATION

Current Learning Activities (CLA) are assessed in accordance with the KhNMU Instructions for Evaluating Educational Activities (<https://knmu.edu.ua/documents/normatyvni-dokumenty-navchalnogo-proczesu>), with grades for practical sessions or final modules ranging from 2 to 5 points. Late submissions of assignments without a valid excuse will result in a grade reduction proportional to the length of the delay, while all assignments are reviewed within 24 hours and recorded in the electronic gradebook. Unsatisfactory grades must be retaken according to the KhNMU Regulations on Making Up Missed or Failed Classes (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_vidprac_zaniat.pdf); at the end of the semester, the arithmetic mean of the CLA is converted into a multi-point scale (70–120 points) based on the conversion table provided in the evaluation instructions.

Individual tasks (IT) are evaluated up to 10 points.

Final control. To be eligible for the Final Examination (FE), a student must accumulate at least 70 points for Current Learning Activities (CLA). The FE consists of 5 components: a clinical case study, three theoretical questions, and a practical skill evaluation.

Grade in subject (GS) is calculated as the sum of the Current Learning Activities score and the Final Examination score ($GD = CLA + FE$).

Appealing the results of the final control is carried out in accordance with the procedure established in KhNMU (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_apel_kontrol.pdf).

POLICIES OF THE EDUCATIONAL COMPONENT

Recommendations for working on the course:

Attending classes. Attendance at lectures and practical sessions is mandatory; students are required to wear a white medical coat during offline classes. Students arriving more than 5 minutes late may be denied entry to the session, and any missed classes must be made up in accordance with the KhNMU Regulations on the Procedure for Students Making Up Educational Sessions (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_vidprac_zaniat.pdf).

Academic integrity. KhNMU stands on the positions of zero tolerance to manifestations of academic dishonesty. Any violations of the principles of academic integrity entail responsibility in accordance with the procedure established by KhNMU (https://knmu.edu.ua/wp-content/uploads/2021/05/polog_ad-1.pdf).

Use of electronic gadgets and artificial intelligence tools is permitted only with the explicit consent of the instructor.

Policy on persons with special educational needs. Students with special educational needs are required to contact the instructor to develop an individual learning trajectory.

Teacher Response Time: 24 hours.

Technical requirements for the course:

- access to a computer, laptop, tablet or smartphone
- corporate Google account with your own photo
- skills in working with Google Workspace (Google Meet, Docs, Sheets, Slides, Forms) and Moodle
- *other requirements of the department*

Technical support: ASM (ev.shevtsov@knmu.edu.ua), Google (tehotdelknmu@gmail.com), Moodle (al.korol@knmu.edu.ua)

RECOMMENDED SOURCES

1. **Agur, A. M. R., & Dalley, A. F. (2024).** *Grant's Atlas of Anatomy*. 16th ed. Philadelphia: Wolters Kluwer. 896 p.
2. **Drake, R. L., Vogl, A. W., & Mitchell, A. W. M. (2023).** *Gray's Anatomy for Students*. 5th ed. Philadelphia: Elsevier. 1184 p.
3. **Norton, J. A., et al. (2024).** *Surgery: Basic Science and Clinical Evidence*. 3rd ed. New York: Springer.
4. **Hansen, J. T. (2022).** *Netter's Clinical Anatomy*. 5th ed. Philadelphia: Elsevier. 608 p.
5. **Lumley, J. S. P., et al. (2023).** *Surface Anatomy: The Anatomical Basis of Clinical Examination*. 6th ed. Edinburgh: Elsevier. 144 p.

Head of the Department of Human Anatomy,
Clinical Anatomy, and Operative Surgery _____

Ihor Kolisnyk