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**MINISTRY OF HEALTH OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY**

Department of Surgery with postgraduate education

CONFIRMED by

Vice-rector for scientific and pedagogical work
Eduard BURACHKIVSKIY

September 1, 2025



WORKING PROGRAM IN THE DISCIPLINE

OF POLYCLINIC MEDICAL PRACTICE.

«SURGERY. (THORACIC, CARDIAC, ENDOCRINE SURGERY)»

Level of higher education: second (master's degree)

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

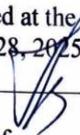
Educational and professional: Medicine

The work program is based on the educational and professional program "Medicine" for the training of specialists of the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Healthcare", approved by the Academic Council of ONMedU (protocol No. 10 dated June 27, 2024) and the educational and professional program "Medicine" for the training of specialists of the second (master's) level higher education level in the specialty I 2 "Medicine" in the field of knowledge I "Healthcare and Social Security", approved by the Academic Council of ONMedU (protocol No. 10 dated June 26, 2025)

Authors:

MD, Professor V. Grubnik, MD, Professor S. Chetverikov, Associate Professor V. Kryzhanivskiy, PhD.

The work program is approved at the meeting of the Department of Surgery
Minutes No. 1 dated August 28, 2025.

Head of the department  MD, Professor V. Grubnik

Approved by the guarantor of
the educational and professional program  Valeriia MARICHEREDA

Approved by the subject cyclical methodical commission for surgical disciplines of ONMedU
Minutes No. 1 dated "28" of August 2025.

Head of the subject cycle methodical commission for surgical disciplines
MD, Professor V. Mishchenko 

Revised and approved at the meeting of the department _____
Minutes No. ___ of "___" _____ 20__
Head of the department _____

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Minutes No. ___ of "___" _____ 20__
Head of the department _____

1. Description of the discipline

Name of indicators	Field of knowledge, speciality, specialization, level of higher education	Characteristics of the practice
The total number of: Credits of ECTS: 1,5 Hours: 45	Field of knowledge 22 "Health care"	<i>Full-time (day) study</i> <i>Compulsory educational component</i>
	Speciality 222 "Medicine"	<i>Course: 5</i>
	Level of higher education second (master's degree)	<i>Semesters IX - X</i>
		<i>Lectures (0 hours)</i>
		<i>Seminars (0 hours)</i>
		<i>Practical classes (30 hours)</i>
		<i>Laboratories (0 hours)</i>
		<i>Independent work (15 hours) including individual tasks (0 hours)</i>
		<i>Final control form- CPE</i>

Note. The hours corresponds to the educational program of the curriculum.

2. The purpose and tasks of the practice — competencies, program learning outcomes

The purpose is to master the knowledge and to form the elements of the professional competencies, methods of diagnosis, treatment and prevention of surgical diseases, primarily the most common and urgent ones and practical skills in surgery on the basis if the specialized modern scientific achievements.

The tasks of the practice are the following:

- determine methods of diagnosis, algorithm of conservative and operative treatment of surgical diseases of the digestive system, cardiovascular and respiratory systems, depending on the occurrence and occurrence of features of their clinical manifestations in outpatient department;
- learn the differential diagnosis of diseases of the organs of the abdominal cavity, extraperitoneal space and chest;
- determine the principles of postoperative treatment and rehabilitation of patients with surgical pathology;
- to identify modern methods of diagnosis and treatment, postoperative supervision and rehabilitation of surgical diseases in outpatient department ;
- learn risk factors for complications of diseases of the digestive system, cardiovascular and respiratory systems;
- interpret the results of laboratory and instrumental research of the digestive system, cardiovascular and respiratory systems;
- demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination in surgery;
- to carry out a prognosis of life and working capacity in case of surgical diseases of the digestive system, cardiovascular and respiratory systems;
- interpret the general principles of treatment, rehabilitation and prevention of the most common surgical diseases of the digestive system, cardiovascular and respiratory systems;

- demonstrate the ability to maintain medical documentation in the clinic of surgical diseases;
- provide emergency medical care for urgent diseases of the digestive system, cardiovascular and respiratory systems.

The process of studying the practice is aimed at forming elements of the following competencies:

- **General (GC):**

- GC 3. Ability to apply knowledge in practical situations

- GC 4. Knowledge and understanding of the subject area and understanding of professional activity

- GC 5. Ability to adapt and act in a new situation

- GC 6. Ability to make informed decisions

- GC 7. Ability to work in a team

- GC 12. Determination and perseverance in the tasks and responsibilities taken

- **Special (SC):**

- SC1. Ability to collect patient medical information and analyse Clinical data

- SC2. Ability to determine the required list of laboratory and instrumental studies and evaluate their results

- SC3. Ability to establish a preliminary and Clinical diagnosis of the disease

- SC4. The ability to determine the necessary mode of work and rest in the treatment and prevention of diseases

- SC5. The ability to determine the nature of nutrition in the treatment and prevention of diseases

- SC6. The ability to determine the principles and nature of the treatment and prevention of diseases

- SC7. Ability to diagnose emergency conditions

- SC8. Ability to determine tactics and provide emergency medical care

- SC9. Ability to conduct medical and evacuation activities

- SC10. Ability to perform medical procedures

- SC11. The ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and moral responsibility

- SC13. Ability to carry out sanitary, hygienic, and preventive measures

- SC14. Ability to plan and implement preventive and anti-epidemic measures for infectious diseases

Program learning outcomes (PLO):

PLO3. Specialized conceptual knowledge, including scientific achievements in the field of health, is the basis for research, critical thinking about problems in the field of medicine and related to interdisciplinary problems.

PLO4. Isolate and identify the leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data from the patient's history, data from the patient's examination, knowledge about the person, his organs and systems, to establish a preliminary clinical diagnosis of the disease (according to list 2).

PLO5. Collect complaints, anamnesis of life and disease, evaluate the patient's psychomotor and physical development, the state of the organs and systems of the body, evaluate information about the diagnosis based on the results of laboratory and instrumental studies (according to list 4), taking into account the patient's age.

PLO6. Establish a final clinical diagnosis by making an informed decision and analysing the obtained subjective and objective data from a clinical, additional examination, conducting

differential diagnostics, observing the relevant ethical and legal standards, under the supervision of a medical director in a healthcare institution (according to list 2).

PLO7. Assign and analyse additional (mandatory and optional) examination methods (laboratory, functional and / or instrumental) (according to list 4), patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).

PLO8. Determine the main clinical syndrome or symptom that determines the severity of the condition of the victim / victim (according to list 3) by making an informed decision on the person's condition under any circumstances (in health care, outside it), incl. in conditions of emergency and combat operations, in the field, in conditions of lack of information and limited time.

PLO9. Determine the nature and principles of treatment of patients (conservative, surgical) with diseases (according to list 2), taking into account the age of the patient, in healthcare conditions, outside it and at the stages of medical evacuation, incl. in the field, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal standards, by making an informed decision on existing algorithms and standard schemes, if it is necessary to expand the standard scheme, be able to substantiate personalized recommendations under the supervision of a medical director in a medical institution.

PLO10. Determine the necessary mode of work, rest and nutrition based on the final clinical diagnosis, observing the relevant ethical and legal standards by making an informed decision on existing algorithms and standard schemes.

PLO15. Organize the provision of medical care and medical evacuation measures to the population and military personnel in emergency situations and military operations, incl. in the field.

PLO17. Performing medical manipulations (according to list 5) in a medical institution, at home or at work based on a preliminary clinical diagnosis and / or indicators of the patient's condition by making an informed decision, observing the relevant ethical and legal standards.

PLO18. Determine the state of functioning and limitations of a person's life and the duration of disability with the execution of relevant documents, in the conditions of a healthcare institution based on data on the disease and its course, the characteristics of a person's professional activity, etc. Maintain medical documentation for the patient and the contingent of the population on the basis of regulatory documents.

PLO19. Plan and implement a system of anti-epidemic and preventive measures for the emergence and spread of diseases among the population.

PLO24. Organize the necessary level of individual security (own and those of whom he cares) in the event of typical dangerous situations in the individual field of activity.

PLO30. Determine the tactics of managing persons subject to dispensary supervision (children, pregnant women, workers whose professions provide for mandatory dispensary examination)

As a result of studying the practice, the student of higher education must:

— **know:**

- modern concepts of domestic and foreign theoretical and practical surgery;
- basic principles of organizing surgical care for the population of Ukraine;
- basic principles of organizing surgical care for the population of Ukraine.
- clinical and laboratory and additional methods of diagnosis of surgical pathology of the body;
- etiology, pathogenesis, clinic, diagnosis and methods of treatment of surgical diseases (within the curriculum);

- etiological, pathogenetic factors, clinical manifestations and diagnosis of emergency conditions;
- emergency surgical care tactics;
- organization of medical evacuation measures

— **be able:**

- demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination in general surgery;
- determine the most common clinical symptoms and syndromes in the clinics of surgical diseases;
- to analyze the results of examination of dental patients with general surgical pathology;
- apply methods of statistical analysis of medical and biological data;
- carry out basic methods of general clinical examination of the patient (interview, examination, palpation, percussion, auscultation), determine a certain amount of additional research and analyse the obtained data to establish a preliminary diagnosis;
- perform general medical manipulations (bandages, injections, washing of the stomach and intestines, stopping bleeding, transport and medical immobilization for dislocations and fractures of bones, local infiltration and conduction anaesthesia, transfusion of blood and blood substitutes) and decide on the issue of referring the patient to a specialist ;
- provide the necessary assistance in case of short-term loss of consciousness, collapse, shock, coma, allergic reactions, asphyxia, acute abdomen, trauma, bleeding, burns, frostbite;
- carry out resuscitation measures in terminal conditions and refer patients to a specialized department;

3. Content of the practice

Theme 1. Wounds.

Definition. Classification. Stages of the wound process. Classification of purulent infection of soft tissues. Principles of treatment of purulent wounds. Purulent diseases of the skin and subcutaneous tissue, their diagnosis and treatment in a polyclinic. Purulent inflammation of cellular spaces. Features of the course and principles of treatment of purulent infection of the soft tissues of the face. Clinical features and treatment of inflammatory processes in patients with diabetes mellitus. Methods of surgical operations and drainage of purulent voids in a polyclinic. Prevention of inflammatory diseases of soft tissues.

Theme 2. Burns, electrical trauma, radiation injuries, frostbite.

Burn classification. Etiology of burn injuries, significance of predisposing factors. The mechanism of local and general changes in the body during burns, including chemical and electrical injuries. Diagnosis and treatment of different periods of burn disease. The Franco coefficient and its use. The value of determining the area of the burn. Complication of burn disease, its treatment, prevention. Classification of frostbite and general hypothermia of the body. Clinic and diagnosis of frostbite. First aid for frostbite and general hypothermia of the body. Local and general treatment of frostbite and general hypothermia of the body. Features of electrical injury (clinic, diagnosis, course, first aid, treatment).

Theme 3. Acute purulent diseases of soft tissues.

Furuncle, carbuncle, hydradenitis, abscess, phlegmon, mastitis, erysipelas, lymphangitis, lymphadenitis, paraproctitis. Etiology, pathogenesis, diagnosis. Features of the clinical course. Differential diagnosis. Specific research methods. Methods of conservative and surgical

treatment in a polyclinic.

Theme 4. Necrosis. Gangrene. Ulcers. Fistulas.

Classification, definition, pathomorphology, clinical picture, course, complications, treatment. Etiology, pathogenesis, diagnosis. Features of the clinical course. Differential diagnosis. specific research methods. Methods of conservative and surgical treatment in a polyclinic.

Theme 5. Acute anaerobic (clostridial and non-clostridial) infection.

Emphysematous, edematous-toxic, phlegmonous, putrefactive. Classification, Etiology, pathogenesis, diagnosis. Features of the clinical course. Differential diagnosis. Specific research methods. Methods of conservative and surgical treatment of polyclinics.

Theme 6. Algorithm of the Brody-Troyanov-Trendelenburg functional test to detect the failure of the valves of the superficial veins, the failure of the valves of the perforating veins of the lower extremities

Theme 7. Algorithm of a functional marching test (Delbe-Perthes test) to detect the patency of the deep veins of the lower extremities

Theme 8. Algorithm of Oppel's functional test in obliterating atherosclerosis of the vessels of the lower extremities

Theme 9. Algorithm of a tourniquet application in case of damage to the grate arteries and veins of the limbs

Theme 10. Algorithm of local infiltrative and trunkul Novocaine anaesthesia.

Theme 11. Algorithm of Mikulich' wound tamponade.

KPE.

4. PRACTICE STRUCTURE

Themes	Total	Practical classes	Independent work
Theme 1. Wounds. Definition. Classification. Wound process. Treatment.	6	4	2
Theme 2. Burns, electrical trauma, radiation injuries, frostbite.	5	4	1
Theme 3. Acute purulent diseases of soft tissues: furuncle, carbuncle, hydradenitis, abscess, phlegmon, mastitis, dysentery, lymphangitis, lymphadenitis, anorectal abscess.	6	4	2
Theme 4. Necrosis. Gangrene. Ulcers. Fistulas.	5	4	1
Theme 5. Acute anaerobic (clostridial and non-clostridial) infection: emphysematous, edematous-toxic, phlegmonous, putrefactive.	3	2	1
Theme 6. Algorithm of the Brody-Troyanov-Trendelenburg functional test to detect the failure of the valves of the superficial veins, the failure of the valves of the perforating veins of the lower extremities	3	2	1
Theme 7. Algorithm of a functional marching test	3	2	1

(Delbe-Perthes test) to detect the patency of the deep veins of the lower extremities			
Theme 8. Algorithm of Oppel's functional test in obliterating atherosclerosis of the vessels of the lower extremities	3	2	1
Theme 9. Algorithm of a tourniquet application in case of damage to the grate arteries and veins of the limbs	3	2	1
Theme 10. Algorithm of local infiltrative and trunkul Novocaine anaesthesia.	3	2	1
Theme 11. Algorithm of Mikulich' wound tamponade.	3	2	1
Preparation for KPE	2	-	2
Total hours	45	30	15

5. LECTURES ARE NOT PROVIDED BY THE CURRICULUM

5.2.Seminar classes are not provided

5.3. Themes of practical classes

№	Theme	hours
1	Practical lesson 1-2. Wounds. Definition. Classification. Wound process. Treatment.	4
2	Practical lesson 3-4. Burns, electrical trauma, radiation injuries, frostbite.	4
3	Practical lesson 5-6. Acute purulent diseases of soft tissues furuncle, carbuncle, hydradenitis, abscess, phlegmon, mastitis, erysipelas, lymphangitis, lymphadenitis, anorectal abscess.	4
4	Practical lesson 7-8. Necrosis. Gangrene. Ulcers. Fistulas.	4
5	Practical lesson 9. Acute anaerobic (clostridial and non-clostridial) infection: emphysematous, edematous-toxic, phlegmonous, putrefactive.	2
6	Practical lesson 10. Algorithm of the Brody-Troyanov-Trendelenburg functional test to detect the failure of the valves of the superficial veins, the failure of the valves of the perforating veins of the lower extremities	2
7	Practical lesson 11. Algorithm of a functional marching test (Delbe-Perthes test) to detect the patency of the deep veins of the lower extremities	2
8	Practical lesson 12. Algorithm of Oppel's functional test in obliterating atherosclerosis of the vessels of the lower extremities	2
9	Practical lesson 13. Algorithm of a tourniquet application in case of damage to the grate arteries and veins of the limbs	2
10	Practical lesson 14. Algorithm of local infiltrative and trunkul Novocaine anaesthesia.	2
11	Practical lesson 15. Algorithm of Mikulich' wound tamponade.	2
	Total	30

5.4.Laboratory classes are not provided

6.

7.

8. Independent work of an applicant of higher education.

№	Themes	Hrs
1	Preparation for practical lesson 1-2. Wounds. Definition. Classification. Wound process. Treatment.	2
2	Preparation for practical lesson 3-4. Burns, electrical trauma, radiation injuries, frostbite.	1
3	Preparation for practical lesson 5-6. Acute purulent diseases of soft tissues	2
4	Preparation for practical lesson 7-8. Necrosis. Gangrene. Ulcers. Fistulas	1
5	Preparation for practical lesson 9. Acute anaerobic (clostridial and non-clostridial) infection	1
6	Preparation for practical lesson 10. Algorithm of the Brody-Troyanov-Trendelenburg functional test to detect the failure of the valves of the superficial veins, the failure of the valves of the perforating veins of the lower extremities	1
7	Preparation for practical lesson 11. Algorithm of a functional marching test (Delbe-Perthes test) to detect the patency of the deep veins of the lower extremities	1
8	Preparation for practical lesson 12. Algorithm of Oppel's functional test in obliterating atherosclerosis of the vessels of the lower extremities	1
9	Preparation for practical lesson 13. Algorithm of a tourniquet application in case of damage to the grate arteries and veins of the limbs	1
10	Preparation for practical lesson 14. Algorithm of local infiltrative and trunkul Novocaine anaesthesia.	1
11	Preparation for practical lesson 15. Algorithm of Mikulich' wound tamponade.	1
12	Preparation for KPE	2
	Total hours	15

7. Teaching methods

Practical classes: conversation, role-playing games, solving clinical situational problems, practicing patient examination skills, practicing manipulation skills according to list 5, instruction and practicing skills on simulation dummies, training exercises on differential diagnosis of the most common diseases.

Individual work: independent work with the recommended basic and additional literature, with electronic information resources, independent work with the bank of test tasks, independent mastering of algorithms of communication with patients.

8. Forms of control and assessment methods (including criteria for evaluating learning outcomes)

Ongoing control:

oral control, testing, assessment of performance of skills, assessment of communication skills during role-playing, solving situational clinical tasks, assessment of activity in class.

Final control Credit Test..

Assessment of the ongoing learning activity at the practical class:

1. Assessment of theoretical knowledge on the theme:
 - methods: individual survey on the theme, participation of the students in the discussion of problem situations; assessment of performance of tests on the theme;
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
2. Assessment of skills and manipulations on the subject of the lesson:
 - methods: assessment of the correctness of the performance of skills
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

3. Assessment of work with a patient on the subject of the class:
- methods: assessment of: a) communication skills of communicating with the patient and his parents, b) the correctness of prescribing and evaluating laboratory and instrumental studies, c) compliance with the differential diagnosis algorithm, d) substantiation of the clinical diagnosis, e) drawing up a treatment plan;
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

The grade for one practical session is the arithmetic average of all components and can only have a whole value (5, 4, 3, 2), which is rounded according to the statistical method.

9 Criteria of ongoing assessment at the practical class

Score	Assessment criterion
Perfectly "5"	The applicant is fluent in the material, takes an active part in discussing and solving a situational clinical problem, confidently demonstrates practical skills. Excellently interprets the data of clinical, laboratory and instrumental studies, expresses his opinion on the topic of the lesson, demonstrates clinical thinking.
Fine "4"	The applicant has a good knowledge of the material, participates in the discussion and solution of a situational clinical problem, demonstrates practical skills. Interprets the data of clinical, laboratory and instrumental studies well with some errors, expresses his opinion on the topic of the lesson, demonstrates clinical thinking.
Satisfactorily "3"	The applicant does not have sufficient knowledge of the material, is unsure of participating in the discussion and solution of a situational clinical problem, demonstrates practical skills for and interprets clinical, laboratory and instrumental research data with significant errors.
Unsatisfactorily "2"	The applicant does not know the material, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills.

The applicant is admitted to the KPI on the condition that the requirements of the end-to-end work program of practice are fulfilled and if he received at least 3.00 points for the current activity.

Evaluation of the results of the students' practice during the final control - comprehensive practical exam (KPI).

The methodology of final control in the form of KPI is unified and involves the use of standardized forms. The number of practical skills taught at KPI corresponds to the number of production practice profiles on the corresponding course under the corresponding OPP.

Evaluation of the winner is carried out according to a check-list. During the KPI, the applicant receives a ticket, and the examiners use a check-list for the corresponding ticket with standard answers and determine which mandatory components of the answer were completed or not completed by the applicant.

Each point of the algorithm, depending on the complexity, is assigned a certain number of points. The specific weight (number of points) of each item may be different - depending on the number of items and the difficulty of performing a particular item. Some scenarios may have critical points, failing which the task is considered failed. Ambiguity of understanding should be excluded when forming check-list items.

When the applicant performs certain actions, he can receive "minus points", namely:

№	Evaluation criterion	Ball

1.	Unregulated action or attempt to communicate with the examiner, not provided for in the task	- 5
2.	The second unregulated action or attempt to communicate with the examiner, not provided for in the task	- 5
3.	The third unregulated action or attempt to communicate with the examiner, not provided for in the task	-5
4.	The fourth unregulated action or attempt to communicate with the examiner, not provided for in the task	- 5
5.	More than 4 unregulated actions	- 20
6.	Dangerous action (which will inevitably lead to deterioration of the patient's condition)	- 20
7.	Unacceptable behavior	- 20
8.	Damage to simulation equipment or inventory	- 20

The maximum score for completing a task at one station is 100 points. The KPI is considered completed if the applicant has scored at least 60% of the maximum number of points at each station.

The overall KPI score is calculated as the arithmetic average of all received scores for all profiles. The KPI is held in the Educational and Production Complex of Innovative Learning Technologies, information and Internal Monitoring of Education Quality of the University during the examination sessions at the end of the semester (autumn and spring) according to the schedule.

9. Distribution of points received by applicant of higher education.

The obtained average score for the academic discipline for applicants who have successfully mastered the work program of the academic discipline is converted from a traditional four-point scale to points on a 200-point scale, as shown in the table:

Conversion table of traditional to multi-point

National score for the practice	The sum of scores for the practice
Perfectly("5")	185 – 200
Fine("4")	151 – 184
Satisfactory («3»)	120 – 150
Unsatisfactory («2»)	Less than 120

A multi-point scale (200-point scale) characterizes the actual success of each applicant in learning the educational component. The conversion of the traditional grade (average score for the academic discipline) into a 200-point grade is performed by the information and technical department of the University.

According to the obtained points on a 200-point scale, the achievements of the applicants are evaluated according to the ECTS rating scale. Further ranking according to the ECTS rating scale allows you to evaluate the achievements of students from the educational component who are studying in the same course of the same speciality, according to the points they received. The ECTS scale is a relative-comparative rating, which establishes the applicant's belonging to the group of better or worse among the reference group of fellow students (faculty, speciality). An "A" grade on the ECTS scale cannot be equal to an "excellent" grade, a "B" grade to a "good" grade, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" according to the ECTS scale do not coincide with the limits of grades "5", "4", "3" according to the traditional scale. Applicants who have received grades of "FX" and "F" ("2") are not

included in the list of ranked applicants . The grade "FX" is awarded to students who have obtained the minimum number of points for the current learning activity, but who have not passed the final examination. A grade of "F" is given to students who have attended all classes in the discipline, but have not achieved a grade point average (3.00) for the current academic activity and are not admitted to the final examination.

Applicants who study in one course (one specialty), based on the number of points scored in the discipline, are ranked on the ECTS scale as follows:

Conversion of the traditional evaluation and and ECTS scores

Score on the ECTS scale	Statistical indicator
A	The best 10% students
B	Next 25% students
C	Next 30% students
D	Next 25% students
E	Next 10% students

10. Methodological support

- Working program on the practice
- Syllabus
- Methodological recommendations for the practical classes
- Methodological recommendations for the individual work
- Situational tasks
- Scenarios of role-playing games (if necessary)
- An electronic bank of test tasks by subsection of practice

11. List of practical skills for KPI.

1. Decompression pleural puncture for pneumothorax in hospital conditions.
2. Algorithm of the Brody-Troyanov-Trendelenburg functional test to detect the failure of the valves of the superficial veins, the failure of the valves of the perforating veins of the lower extremities.
3. Algorithm of a functional marching test (Delbe-Perthes test) to detect the patency of the deep veins of the lower extremities.
4. Algorithm of Oppel's functional test in obliterating atherosclerosis of the vessels of the lower extremities
5. Algorithm of local infiltration Novocaine anaesthesia.
6. Application of a tourniquet in case of damage to the grate arteries and veins of the limbs
7. Mikulich' wound tamponade.

12. Recommended literature.

Basic .

1. Gozie Offiah, Arnold Hill//RCSI Handbook of Clinical Surgery for Finals. 4th ed. 2020
2. Цигикало О. В. Clinical Anatomy and Operative Surgery=Клінічна анатомія і оперативна хірургія.. Підручник для ВМНЗ IV р.а.: Рекомендовано МОЗ: 2020/ 528 с.
3. Березницький Я. С. (за ред.) General Surgery=Загальна хірургія. — 2-ге вид. Підручник для ВМНЗ III—IV р.а.: Рекомендовано ДУ“Центр.метод.каб.з вищої мед.освіти МОЗ України”: 2020/ 328 с.
4. Christian de Virgilio, Areg Grigorian//Surgery: A Case Based Clinical Review. 2nd Ed. 2020
5. General Surgery=Загальна хірургія: Підручник для мед. ун-тів., інст., акад. Затверджено МОН / За ред. С.Д. Хіміча, М.Д. Желіби. — К., 2019. — 536 с.
6. The Bethesda handbook of clinical oncology / editors, Jame Abraham, James L. Gulley. Fifth

Edition. Copyright © 2019 Wolters Kluwer

7. JANE C. ROTHROCK// Alexander's Care of the Patient in Surgery. 16th Ed. 2019

Additional .

1. Hamilton Bailey's Physical Signs: Demonstrations of Physical Signs in Clinical Surgery, 19th Edition Paperback – Import, by John S.P Lumley (Author), Anil K. D'Cruz (Author), Jamal J. Hoballah (Author), Carol E.H. Scott-Connor (Author) 25 Feb 2016
2. Schwartz's Principles Of Surgery With DVD Hardcover – 2014 by F. Charles Brunicaardi (Author), Dana K. Andersen (Author), Timothy R. Billiar (Author), David L. Dunn (Author), John G. Hunter (Author), & 2 More

12. Electronic information resources

1. <http://moz.gov.ua> – Міністерство охорони здоров'я України
2. www.ama-assn.org – Американська медична асоціація / American Medical Association
3. www.who.int – Всесвітня організація охорони здоров'я
4. www.dec.gov.ua/mtd/home/ - Державний експертний центр МОЗ України
5. <http://bma.org.uk> – Британська медична асоціація
6. www.gmc-uk.org - General Medical Council (GMC)
7. www.bundesaerztekammer.de – Німецька медична асоціація
8. <http://medforum.in.ua/partners-> Асоціація хірургів України
9. <http://endoscopy.com.ua/> - Асоціація ендоскопічних хірургів України
10. <http://thoracic-surgery.com.ua/> - Асоціація торакальних хірургів України
11. <https://youcontrol.com.ua/> - Асоціація судинних хірургів України