Додаток 2
До Процедури розробки та періодичного перегляду освітніх програм

Syllabus of the discipline

"Modern aspects of clinical anatomy in thoracic surgery"

1. General information	
Name of faculty	**Medical**
Educational programe (brunch, speciallity, level of high education, form of education)	22 Health care, 222 Medicine, second (master's) level of high education, daily form
Educational year	**2022-2023**
Name of discipline, code *(e-mail on the site of Danylo Halyckyy LNMU)*	**Modern aspects of clinical anatomy in thoracic surgery** (https://new.meduniv.lviv.ua/kafedry/kafedra-operatyvnoyi-hirurgiyi-z-topografichnoyu-anatomiyeyu/)
Department *(name, adress, telephone e-mail)*	**Operative surgery and topographic anatomy, +380322755931, kaf_operative_surgey@meduniv.lviv.ua**
Department leader *(contact e-mail)*	**Professor Masna Zoryana Zenoviivna masna.zz@gmail.com**
The year of study *(year, of realisation of discipline study)*	**Fifth year of study**
Semester (*semester at what realisation of discipline education is performed*)	**VII semester**
Type of discipline/module *(obligatory/of choice)*	**Obligatory**
Teachers (*names, surnames, scientific degree and ranks of teachers, who teach the discipline, contact e-mail)*	**Department leader, professor Masna Zoryana Zenoviivna (masna.zz@gmail.com)** **Ass. prof. PhD, Haba Marianna Yevgenivna (gabamarianna@gmail.com)** **Ass. prof. PhD, Rudnytska Khrystyna Ihorivna (khrystynapavliv@gmail.com)** **Senior lecturer, Orel Mariya Hlibivna (orelmasha@ukr.net)** **Assistant of prof. Sohuyko Rostyslav Romanovych (rostyslavsohuyko@gmail.com)** **Ass. prof. PhD, Paltov Evheniy Volodymyrovych (evgenpaltov@gmail.com)**
Erasmus yes/no *(availability of the discipline for the students within the program Erasmus+)*	
Person, who is responsable for sylabus *(a person, who has to give commentary on syllabus contact e-mail*)	**Department leader, professor Masna Zoryana Zenoviivna (masna.zz@gmail.com)** **Ass. prof. PhD, Rudnytska Khrystyna Ihorivna (khrystynapavliv@gmail.com)** **Senior lecturer, Orel Mariya Hlibivna (orelmasha@ukr.net)**
Count of credits ECTS	**3**
Count of hours *(lectures/practical classes/out f class work of students)*	**60 (Practical classes 26, out of class work 34)**
Education language	**Ukrainian, English**
Information about consultations	**According schedule**

Address, telephone and regulations of work of clinical base …	**Absent**

2. Short annotation to the course

Combination of students theoretical knowledge of normal human anatomy with their practical application in the clinical activity in various narrow specialties, most of all in surgical disciplines.
Advantage is mastering of the practical skills of primary surgical technique and more difficult surgical manipulations on cadaveric animal material and phantoms.
The course is including practical classes (26 hrs.) and out of class work of students (34 hrs. at out of class time), that allows to provide theoretical (knowledge) and practical (skills and competences) education.

3. Purposes and goals of course

1. Purpose of course:
«Modern aspects of clinical anatomy in thoracic surgery» is in the deepening of theoretical knowledge through the study of topics that were not included or incompletely or in overview in the program of the discipline "Clinical Anatomy", improvement and assimilation of practical skills, acquisition of a professional level of readiness of future doctors of various specialties.
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2. Goal of education:
a) based on student's study of the morphological discipline – human anatomy; histology, cytology and embryology; physiology, pathomorphology; pathophysiology; propedeutics of internal medicine; propedeutics of paediatrics; radiology and are integrated with these disciplines;
b) give the base for student's studies of surgery, where surgical methods of treatment are provided, what provides integration of education with these disciplines and forming skills to apply knowledge in the process of next education and professional activity;
c) give the opportunity of mastering the practical skills and form the professional facility for for the medical care at separate pathologic conditions and at surgical patients care.
As the result of discipline study student has to:
-know structure, topography and syntopy of human body areas;
-to demonstrate mastering of basic operative procedures techniques on animal material.
3. Competencies and results of education:
- *general:* ability of abstract thinking, analysis and synthesis; the ability to learn and master modern knowledge; ability to apply knowledge in practical situations; knowledge and understanding of the subject field and understanding of professional activity; ability to adapt and act in a new situation; the ability to make informed decisions; ability to work in a team; the ability for interpersonal interaction; the ability to communicate in a foreign language; the ability to use information and communication technologies; the ability to search, process and analyze information from various sources; determination and persistence in relation to the assigned tasks and assumed responsibilities; awareness of equal opportunities and gender issues; the ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine; the ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle. Basics for students to study clinical anatomy and operative surgery, histology, normal physiology, propaedeutics of clinical disciplines.
-*special (professional and subject)* : Ability to collect medical information about the patient and analyze clinical data; the ability to determine the necessary list of laboratory and instrumental studies and evaluate their results; the ability to determine the principles and nature of treatment and prevention of diseases; the ability to diagnose emergency conditions; the ability to determine

tactics and provide emergency medical assistance; Ability to perform medical manipulations; 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 ethical responsibility; clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to persons who are studying; the ability to develop and implement scientific and applied projects in the field of health care; compliance with ethical principles when working with patients and laboratory animals; observe professional and academic integrity, bear responsibility for the reliability of the obtained scientific results.

4. Prerequisite of course

It is indicated information about discipline, basic skills, basic knowledge and educational results, which student need (to be registered) for successful study and mastering of the competencies of the discipline:

1. Normal anatomy (structure of organs and systems of human body)
2. Histology (microstructure of the tissues of the organs and structures of the organism)
3. Normal physiology (principles of functioning of organs and systems of the organism)
4. Biology (general patterns of live organisms structures)
5. Biophysics (biophysical patterns of vital processes in the organism, influence of physical factors on the structure and functions of living organisms)
6. Pathological anatomy (basics of pathological processes in the human body and general pathological changes of organs and tissues).
7. Pathological physiology (patterns of development of pathological processes).
8. General surgery (pathological conditions and diseases treated with the help of an operative method).

5. Programme learning outcomes

The list of education results

Code of education result	Content of education result	Link to the code of competence matrix
Kn-1	- the essence, fundamental properties of the layered structure of the human body;	*PRE 1, 2, 3, 21, 22, 27*
Kn-2	- features of the topographical anatomy of the chest;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Kn-3	- features of the topographical anatomy of wall of the chest;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Kn-4	- anomalies of the development of the chest;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Kn-5	- methods of investigations diseases of the lungs and pleura;	*PRE 1, 2, 3, 4, 7, 8, 21, 22, 25, 27*
Kn-6	- operative approaches to the organs of the chest;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
Kn-7	- operations on the wall of the chest;	*PRE 1, 2, 3, 7, 8, 9, 14, 17, 21, 22, 25, 27*
Kn-8	- rib resection;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
Kn-9	- lung resection;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
Kn-10	- topography of mediastinal organs;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Kn-11	-abnormalities in the development of the esophagus;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*

Kn-12	- operations on the esophagus;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
Kn-13	-topography of thymus;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Kn-14	- operations on thymus;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
Kn-15	-topography of the breast;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Kn-16	- operations on the breast;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
Sk-1	- solve situational tasks from the main sections of the discipline;	*PRE 1, 2, 3, 21, 22, 27, 28*
Sk-2	- determine the features of the layered structure of the chest;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-3	- to be able to perform primary surgical treatment of wounds of the chest;	*PRE 1, 2, 3, 4, 7, 8, 9, 14, 17, 21, 22, 25, 27*
Sk-4	- to demonstrate the border of the lungs on a model;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-5	- to differentiate the root of the lung;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-6	-demonstrate the structure of the chest on dry preparations;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-7	- determine the structure and function of the organs of the chest;	*PRE 1, 2, 3, 4, 7, 21, 22, 25, 27*
Sk-8	- determine the localization of the formation of cava veins;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-9	- to be able to determine the puncture of the pleural space;	*PRE 1, 2, 3, 4, 7, 8, 9, 14, 17, 21, 22, 25, 27*
Sk-10	- to demonstrate vascular sutures on cadaveric animal material;	*PRE 1, 2, 3, 4, 7, 8, 9, 17, 21, 22, 25, 27*
Sk-11	-demonstrate bronchus seam on cadaveric animal material;	*PRE 1, 2, 3, 4, 7, 8, 9, 17, 21, 22, 25, 27*
Sk-12	- to demonstrate diaphragmatic hernias on a model;	*PRE 1, 2, 3, 4, 7, 8, 21, 22, 25, 27*
Sk-13	- to determine the anatomical areas of confluence of lymphatic ducts into venous corners;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-14	- to determine the structure and function of the breast;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-15	- to determine the structure and function of the esophagus;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-16	- determine the topography of the thymus on the model;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
Sk-17	- to demonstrate on a model the ligature of a. mammariae internae;	*PRE 1, 2, 3, 4, 7, 8, 9, 17, 21, 22, 25, 27*
Sk-18	- to demonstrate azygos and hemiazygos veins on wet	*PRE 1, 2, 3, 7, 21,*

	preparations;	*22, 25, 27*
Sk-19	- to analyze the features of the topography of the venous vessels of the mediastinal organs.	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
GC-1	-ability of abstract thinking, analysis and synthesis	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-2	-the ability to learn and master modern knowledge	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-3	-the ability to apply knowledge in practical situations	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-4	-knowledge and understanding of the subject area and understanding of professional activity	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-5	-the ability to adapt and act in a new situation	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-6	-the ability to make informed decisions	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-7	-ability to work in a team	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-8	-the ability for interpersonal interaction	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
GC-9	-the ability to communicate in a foreign language	*PRE 27*
GC-10	-the ability to use information and communication technologies	*PRE 21, 22, 25, 27*
GC-11	-the ability to search, process and analyze information from various sources	*PRE 1, 2, 3, 21, 22, 25, 27, 28*
GC-12	-certainty and perseverance regarding the assigned tasks and assumed responsibilities	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17,21, 22, 25, 27, 28*
GC-13	-awareness of equal opportunities and gender issues	*PRE 1, 2, 3, 21, 22, 25, 27, 28*
GC-14	-the ability to realize one's rights and responsibilities as a member of society, to be aware of the values of civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine	*PRE 1, 2, 3, 9, 21, 22, 25, 27,28*
GC-15	-the ability to preserve and multiply the moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use different types and forms of motor activity for active recreation and leading a healthy lifestyle	*PRE 1, 2, 3, 9, 21, 22, 25, 27, 28*
PC-1	Ability to collect medical information about the patient and analyze clinical data	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 21, 22, 25, 27, 28*
PC-2	Ability to determine the necessary list of laboratory and	*PRE 1, 2, 3, 4, 5,*

	instrumental studies and evaluate their results	*7, 8, 9, 21, 22, 25, 27, 28*
PC-6	Ability to determine the principles and nature of treatment and prevention of diseases	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
PC-7	Ability to diagnose emergency conditions	*PRE 1, 2, 3, 4, 5, 8, 9, 14,21, 22, 25, 27, 28*
PC-8	Ability to determine tactics and provide emergency medical care	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
PC-10	Ability to perform medical manipulations	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
PC-11	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 ethical responsibility	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
PC-21	Clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to students	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
PC-23	Ability to develop and implement scientific and applied projects in the field of health care	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
PC-24	Compliance with ethical principles when working with patients and laboratory animals	*PRE 1, 2, 3, 4, 5, 7, 8, 9, 14, 17, 21, 22, 25, 27, 28*
PC-25	Observance of professional and academic integrity, bear responsibility for the reliability of the obtained scientific results	*PRE 1, 2, 3, 21, 22, 25, 27, 28*
AR-1	- mastering practical skills in the use of surgical instruments and suture material;	*PRE 1, 2, 3, 9, 14, 17, 21, 22, 25, 27, 28*
AR-2	- lung surgery technique;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
AR-3	- determination of conditional lines on the surface of wall of the chest;	*PRE 1, 2, 3, 7, 21, 22, 25, 27*
AR-4	-technique of operations on diaphragm;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
AR-5	- technique of operations on the esophagus;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
AR-6	- technique of operations on the thymus;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
AR-7	- technique of operations on the breast;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
AR-8	- technique of operations at pneumothoraxes;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*

AR-9	- technique of operations on blood vessels and nerves;	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
AR-10	- technique of operation on the rib.	*PRE 1, 2, 3, 7, 8, 9, 17, 21, 22, 25, 27*
AR-11	-mastering practical skills at investigation of the chest and interpretation of data from instrumental investigations of the thoracic cavity;	*PRE 1, 2, 3, 7, 8, 9, 21, 22, 25, 27*

6. Format and scope of course

Format of course *(indicate full-time, or external)*	Full-time	
Education tipe	Count of hours	Count of groups
Lectures	-	23
Practical	**26**	23
Seminars	-	-
Out of class work	**34**	23

7. Topics and content of the course

Code of lesson type	Topic	Content of education	Code of educational result	Teacher
P-1 *(practical lesson 1)*	Anatomical and physiological features of the structure of the chest. Life safety during wartime, provision of emergency medical aid, psychological aid, crisis management.	Skeleton of the chest. Identify the muscles of the chest. Intercostal spaces. Constitutional and age-related features of the chest structure. Division of the thoracic cavity. Pleural spaces, division of the pleura into parts, folds of the pleura, surface anatomy. of pleura. Borders of the mediastinum. Topography of diaphragm. Diaphragmatic openings and structures passing through them. Projection of the lungs to the wall of the chest. Division of lungs into lobes and segments. Topography of the roots of the lungs. Blood supply, innervation and lymphatic drainage of the lungs. Topography of organs and structures of	Kn 1, 2, 3, 10, 13, 15. Sk 1, 2, 4, 5, 6, 7, 8, 13, 14, 15, 16, 19. GC 1-15. PC 1, 2, 21, 23, 24, 25. AR 1, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**

		the mediastinum.		
P-2 *(practical lesson 2)*	The main examination methods for diseases of the pleura and lungs: roentgenography, roentgenoscopy, computed tomography, magnetic resonance imaging.	Roentgenoscopy in different positions. Roentgenography in different projections, pleural puncture, Computed tomography, Magnetic resonance imaging. Bronchoscopy.	Kn 1, 2, 3, 10, 13, 15. Sk 1, 2, 4, 5, 6, 7, 8, 13, 14, 15, 16, 19. GC 1-15. PC 1, 2, 6, 7, 10, 11, 21, 23, 24, 25. AR 1, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**
P-3 *(practical lesson3)*	Surgical approaches: rib resection, sternotomy, thoracotomy.	Approach to the organs and structures of the chest. Approach to the pleural cavities. Anterior, posterior and lateral thoracotomy: technique, advantages and disadvantages of different approaches. Approach to the mediastinum. Classification of sternotomies. Indications of their performance. Advantages and disadvantages of different types of sternotomies. Indications and technique of rib resection. Thoracic outlet syndrome, methods of its operative treatment. Use of the rib and cartilage grafts in reconstructive surgery.	Kn 1, 2, 3, 4, 5, 6, 7, 8, 10. Sk 1, 2, 4, 6, 7. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 9, 10, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**
P-4 *(practical lesson 4)*	Traumatic damage to the pleura and lungs (foreign bodies).	Peculiarities of damage to the pleura and lungs with rib fractures and penetrating wounds of the chest, removal of foreign bodies.	Kn 1, 2, 3, 5, 6, 7, 8, 9. Sk 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**
P-5 *(practical lesson 5)*	Pneumothorax: open, closed, tensive. Diagnosis and treatment.	Signs of penetrating injuries of the chest. Classifications of pneumothoraxes. X-ray criteria of pneumothorax. X-ray at different types of pneumothorax. Operative treatments of spontaneous and traumatic pneumothorax. Puncture of the pleural cavity: technique of	Kn 1, 2, 3, 5, 6, 7, 8. Sk 1, 2, 3, 4, 6, 7, 9, 10, 16. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 8, 9, 10, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**

		performance. Drainage of the pleural cavity.		
P-6 *(practical lesson 6)*	Operations on the pleural cavity and lungs. Lobectomy, bilobectomy, segmentectomy, pulmonectomy (right, left). Indications, technique of performance.	Indications for operations on the pleura. Operations for complicated pleurisy and pleural neoplasms. Indications for lung surgery. Lung resection: lobectomy, bilobectomy, segmentectomy, pulmonectomy (right, left).	Kn 1, 2, 3, 5, 6, 7, 8, 9. Sk 1, 2, 4, 5, 6, 7, 9, 10, 11. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 8, 9, 10, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**
P-7 *(practical lesson 7)*	Topography of the mediastinum. Operative interventions at penetrating wounds of the mediastinum.	Topographic anatomy of the mediastinum. Features of operative treatment at penetrating wounds	Kn 1, 3, 6, 7, 10, 12, 13, 14. Sk 1, 2, 3, 6, 7, 8, 10, 15, 16, 17, 18, 19. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**
P-8 *(practical lesson 8)*	Congenital anomalies and acquired lesions of the esophagus. Reconstruction of the esophagus. Indications, diagnosis, methods of operative treatment.	Topography of esophagus. Congenital anomalies of esophagus (aplasia and hypoplasia). Esophageal burns, typical locations and damage of related organs and structures of the mediastinum. Esophageal strictures. Methods of conservative treatment and reconstructive operations at esophagus injuries.	Kn 1, 3, 6, 7, 10, 11, 12. Sk 1, 2, 7, 15, 19. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 5, 9, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**
P-9 *(practical lesson 9)*	Operative interventions on thymus. Inrathoracic goiter. Indications, diagnosis and operative treatment.	Topography of the thyroid gland. Topography and age-related anatomy of thymus. Indications, surgical approach and features of surgical treatment for retrosternal goiter. Indications, operative approach and technique of operations for tumors of thymus.	Kn 1, 2, 3, 6, 7, 13, 14. Sk 1, 2, 7, 8, 16. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 6, 11.	**Senior lecturer Orel M. G. Ass. prof. Rudnytska K. I.**
P-10 *(practical lesson 10)*	Topography of the breast. Anatomical and physiological features of the structure of the breast, features of lymphatic drainage.	Topography of the breast, ligaments and capsule of the breast. Structure of the breast, blood supply, innervation and lymphatic drainage.	Kn 1, 3, 15. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 11, 21, 23, 24, 25. AR 1, 11.	**Senior lecturer OrelM.G. Ass. prof. Rudnytska K.I.**
P-11 *(practical lesson 11)*	Operations on the breast: indications and methods of operative treatment. Mastectomy and sectoral resection of the breast.	Malformations of the breast. Principles of operations on the breast. Techniques for performing puncture and operative biopsy at breast neoplasms.	Kn 1, 3, 15, 16. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 7, 11.	**Senior lecturer Orel M.G. Ass. prof. Rudnytska K.I.**

P-12 *(practical lesson 12)*	Operative treatment of purulent mastitis.	Features of localization and course of inflammatory processes of the breast. Incisions at purulent mastitis of different localization. Features of treatment of retromammary abscesses and phlegmon.	Kn 1, 3, 15, 16. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 7, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
P-13 *(practical lesson 13)*	Anomalies of thoracic cage development. Operative interventions for the defects of the chest.	Congenital and acquired deformations of the chest. Anomalies of development of ribs and sternum. Malformations of the diaphragm. Congenital and acquired diaphragmatic hernias.	Kn 1, 2, 3, 4, 5, 6, 7, 8, 10. Sk 1, 2, 4, 6, 7, 8, 10, 12, 16, 17. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 3, 4, 8, 9, 10, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
OCW-1 *(out of class work 1)*	Individual independent work of students on the topic (literature review) "Thoracoscopic approaches to the organs of the chest".	Topography of thoracic wall and organs of the chest. Indications for thoracoscopic approaches to the organs of the chest. Equipment and technique for thoracoscopic approaches.	Kn 1, 2, 3, 4, 5, 6, 7, 8, 10. Sk 1, 2, 4, 6, 7. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 9, 10, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
OCW-2 *(out of class work 2)*	Individual independent work of students on the topic (literature review) "Pleural puncture. Indications, method of performance"	Topography of pleura. Topography of pleural domes and sinuses. Indications and locations of pleural puncture. Active and passive drainage of the pleural cavity. Three ampoule drainage system.	Kn 1, 2, 3, 5, 7. Sk 1, 2, 4, 6, 7, 9. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 8, 9, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
OCW-3 *(out of class work 3)*	Individual independent work of students on the topic (literature review) "Operations on the pleura. Indications, performance technique"	Topographic and anatomical features of the pleura. Indications for operations on pleura. Operative approaches at operations on pleura. Method of removal of pleural tumors. Operations for penetrating wounds of the pleural cavity. Operative treatment for purulent processes of the pleural cavity.	Kn 1, 2, 3, 5, 6, 7, 8, 9. Sk 1, 2, 4, 5, 6, 7, 9, 10, 11. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 8, 9, 10, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
OCW-4 *(out of class work 4)*	Individual independent work of students on the topic (literature review) "Intercostal drainage of the pleural cavity according to Bülau".	Topography of the chest wall and intercostal spaces. Typical locations for pleural puncture and drainage. Instruments for Insertion of pleural drainage. Pleural cavity drainage technique. Passive and active aspiration from the pleural cavity.	Kn 1, 2, 3, 5, 7. Sk 1, 2, 4, 6, 7, 9. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 8, 9, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**

OCW-5 *(out of class work 5)*	Individual independent work of students on the topic (literature review) "Esophageal strictures. Bleeding from varicose veins of the esophagus. Methods of miniinvasive treatment".	Topography of the esophagus. Features of blood supply and venous outflow from the esophagus. Typical localization of lesions at injuries and chemical burns of the esophagus. Investigating methods for esophageal strictures. Methods of conservative treatment for esophageal strictures. Reconstructive operations on the esophagus. Methods of bleeding arrest from varicose veins of the esophagus.	Kn 1, 3, 6, 7, 10, 11, 12. Sk 1, 2, 7, 15, 19. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 5, 9, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
OCW-6 *(out of class work 6)*	Individual independent work of students on the topic (literature review) "Topography and age-related anatomy of the thymus"	Topographic features and age-related anatomy of the thymus.	Kn 1, 2, 3, 10, 13. Sk 1, 2, 7, 8, 16. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 6, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
OCW-7 *(out of class work 7)*	Individual independent work of students on the topic (literature review) "Reconstructive and plastic operations on the breast."	Topography of the breast. Aesthetic plastic surgery of breast. Reconstructive operations after mastectomy.	Kn 1, 3, 15, 16. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 7, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**
OCW-8 *(out of class work 8)*	Individual independent work of students on the topic (literature review) "Operations on the diaphragm. Diaphragmatic hernias".	Operations for tumors of the diaphragm. Diaphragmatic hernias: methods of diagnosis, indications and methods of operative treatment.	Kn 1, 2, 3, 4, 6, 7. Sk 1, 2, 6, 7, 12, 15, 18, 19. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 4, 11.	**Senior lecturer OrelM.G.** **Ass. prof. Rudnytska K.I.**

It is necessary to present the system of organization of classes, the use of interactive methods, educational technologies used for the transfer and assimilation of knowledge, skills and abilities.

8. Verification of education results

Continuous control

Performed at educational lessons and has the aim of control of students studies of the educational materials (it's necessary to describe form of educational continuous control performance at the educational classes). Forms of assessment of current educational activities have to be standard and have to include control of theoretical and practical preparation. Final mark for the continuous educational activity, are given according 4-th stage (national) scale.

Code of educational results	Code of lesson type	Method of educational results verification	Criteria of crediting
Kn 1, 2, 3, 10, 13, 15. Sk 1, 2, 4, 5, 6, 7, 8, 13, 14, 15, 16, 19. GC 1-15. PC 1, 2, 21, 23, 24, 25.	P-1	Oral questioning (student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work ("credited" – 1 point, "noncredited" – 0 points).	After implementation of control tasks student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale.

AR 1, 11.			
Kn 1, 2, 3, 10, 13, 15. Sk 1, 2, 4, 5, 6, 7, 8, 13, 14, 15, 16, 19. GC 1-15. PC 1, 2, 6, 7, 10, 11, 21, 23, 24, 25. AR 1, 11.	P-2	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work (“credited” – 1 point, “noncredited” – 0 points).	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale.
Kn 1, 2, 3, 4, 5, 6, 7, 8, 10. Sk 1, 2, 4, 6, 7. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 9, 10, 11.	P-3	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work (“credited” – 1 point, “noncredited” – 0 points).	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale.
Kn 1, 2, 3, 5, 6, 7, 8, 9. Sk 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.	P-4	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work (“credited” – 1 point, “noncredited” – 0 points).	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale.
Kn 1, 2, 3, 5, 6, 7, 8. Sk 1, 2, 3, 4, 6, 7, 9, 10, 16. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 8, 9, 10, 11.	P-5	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work (“credited” – 1 point, “noncredited” – 0 points).	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale.
Kn 1, 2, 3, 5, 6, 7, 8, 9. Sk 1, 2, 4, 5, 6, 7, 9, 10, 11. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 8, 9, 10, 11.	P-6	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work (“credited” – 1 point, “noncredited” – 0 points).	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale.
Kn 1, 3, 6, 7, 10, 12, 13, 14. Sk 1, 2, 3, 6, 7, 8, 10, 15, 16, 17, 18, 19. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.	P-7	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work (“credited” – 1 point, “noncredited” – 0 points).	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale.
Kn 1, 3, 6, 7, 10, 11, 12. Sk 1, 2, 7, 15, 19. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 5, 9, 11.	P-8	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work (“credited” – 1 point, “noncredited” – 0 points).	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale.
Kn 1, 2, 3, 6, 7, 13, 14. Sk 1, 2, 7, 8, 16. GC 1-15.	P-9	Oral questioning (student receives final mark “3” (satisfactory), “4” (good) or “5” (excellent) according 4 pointed national scale. Testing control in 10 test	After implementation of control tasks student receives final mark “3” (satisfactory), “4” (good)

PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 6, 11.		(1 test – 0,5 points). Practical work ("credited" – 1 point, "noncredited" – 0 points).	or "5" (excellent) according 4 pointed national scale.
Kn 1, 3, 15. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 11, 21, 23, 24, 25. AR 1, 11.	P-10	Oral questioning (student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work ("credited" – 1 point, "noncredited" – 0 points).	After implementation of control tasks student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale.
Kn 1, 3, 15, 16. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 7, 11.	P-11	Oral questioning (student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work ("credited" – 1 point, "noncredited" – 0 points).	After implementation of control tasks student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale.
Kn 1, 3, 15, 16. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 7, 11.	P-12	Oral questioning (student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work ("credited" – 1 point, "noncredited" – 0 points).	After implementation of control tasks student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale.
Kn 1, 2, 3, 4, 5, 6, 7, 8, 10. Sk 1, 2, 4, 6, 7, 8, 10, 12, 16, 17. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 3, 4, 8, 9, 10, 11.	P-13	Oral questioning (student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale. Testing control in 10 test (1 test – 0,5 points). Practical work ("credited" – 1 point, "noncredited" – 0 points).	After implementation of control tasks student receives final mark "3" (satisfactory), "4" (good) or "5" (excellent) according 4 pointed national scale.
Kn 1, 2, 3, 4, 5, 6, 7, 8, 10. Sk 1, 2, 4, 6, 7. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 9, 10, 11.	OCW-1	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited", "noncredited").
Kn 1, 2, 3, 5, 7. Sk 1, 2, 4, 6, 7, 9. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 8, 9, 11.	OCW-2	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited", "noncredited").
Kn 1, 2, 3, 5, 6, 7, 8, 9. Sk 1, 2, 4, 5, 6, 7, 9, 10, 11. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 2, 3, 8, 9, 10, 11.	OCW-3	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited", "noncredited").
Kn 1, 2, 3, 5, 7. Sk 1, 2, 4, 6, 7, 9. GC 1-15. PC 1, 2, 6, 7, 8, 10, 11, 21, 23, 24, 25. AR 1, 3, 8, 9, 11.	OCW-4	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited", "noncredited").
Kn 1, 3, 6, 7, 10, 11, 12. Sk 1, 2, 7, 15, 19.	OCW-5	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited",

GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 5, 9, 11.			"noncredited").
Kn 1, 2, 3, 10, 13. Sk 1, 2, 7, 8, 16. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 6, 11.	OCW-6	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited", "noncredited").
Kn 1, 3, 15, 16. Sk 1, 2, 14. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 7, 11.	OCW-7	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited", "noncredited").
Kn 1, 2, 3, 4, 6, 7. Sk 1, 2, 6, 7, 12, 15, 18, 19. GC 1-15. PC 1, 2, 6, 10, 11, 21, 23, 24, 25. AR 1, 4, 11.	OCW-8	Writing short literature review on topic. Oral questioning ("credited", "noncredited").	After implementation of tasks student receives final mark ("credited", "noncredited").
Final control			
General evaluation system	Credit		
Scales of evaluation	Traditional 4 pointed scale, multipointed (200-pointed) scale, range scale of ECTS		
Conditions of admission to final control	Student attended all the practical (laboratory and seminary) lessons and received not less then 120 points for the current continuous learning success.		
Type of final control	**Method of final control**		**Criteria of crediting**
Credit	Topography of the peritoneum. Typical localization and distribution of purulent processes in the abdominal cavity. Methods of operative treatment of peritonitis. Abdominal drainage methods.		*The maximum number of points is 200.* *The minimum number of points is 120*

Criteria of exam/differentiated credit evaluation

Not performed

The maximum number of points that a student can score for the current educational activity while studying the discipline is 200 points.

The minimum number of points that a student must score for the current educational activity in order to enroll in the discipline is 120 points.

The calculation of the number of points is carried out on the basis of the grades received by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to two decimal places. The obtained value is converted into points on a multi-point scale as follows:

$$X=\frac{CAx200}{5}$$

9. Politics of course

The policy of the academic discipline is determined by the system of requirements for the student when studying "Clinical Anatomy and Operative Surgery" and is based on the principles of academic integrity. Students are explained the value of acquiring new knowledge, academic norms that must be followed, why they are important, what academic integrity is, what its values and functions are, how students can contribute to its development by their actions; the essence, peculiarities and reasons for the inadmissibility of academic plagiarism are explained, students of higher education are encouraged to independently perform educational tasks, correctly refer to sources of information in case of borrowing ideas, statements, and information.

The policy of the academic discipline is **in mandatory observance of academic integrity by students**, namely:
• independent performance of all types of work, tasks, forms of control provided for by the work program for the academic discipline;
• references to sources of information in case of use of ideas, developments, statements, information;
• compliance with the legislation on copyright and related rights;
• provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

Compliance with the principles and norms of ethics and deontology by students of higher education:
• actions in professional and educational situations from the standpoint of academic integrity and professional ethics and deontology;
• awareness of the importance of examples of human behavior in accordance with the norms of academic integrity and medical ethics.

Attendance of classes by students of higher education:
• Attendance at all classes is mandatory for the purpose of current and final assessment of knowledge (unless there is a valid reason).

10. Literature

Obligatory

1. Френк Неттер. Атлас анатомії людини. Видавничий дім «НАУТІЛУС», 2004 р.
2. O.V.Tsyhykalo. Topographical anatomy and operative surgery. Textbook for english-speaking foreign students. Vinnytsia, Nova Knyha Publishers, 2011.

Additional

1. Bernard C. Illustrated Manual of Operative Surgery and Surgical Anatomy. - 1991.
2. Pemberton L.B. Workbook of Surgical Anatomy. - 1990.
3. Gliedman M.L. Atlas of Surgical Technigues. - New York etc., McGraw - Hill. - 1990.
4. Sabiston D.C. Atlas of General Surgery. - Philadelphia etc., Saunders. - 1994.
5. Chassin J.L. Operative Strategy in General Surgery. New York etc., Springer. - 1994.
10. M. K. Ferguson. Atlas of thoracic surgery. Elsevier Health Sciences, W B Saunders Co Ltd. London, UK. 2007. – 304p.

11. Equipment, material-technical and programed procuring of discipline/Course

Methodical directions for the students and teachers, workbooks, tables, phantoms, schemes, educational videos, surgical instruments, suturing material dry preparations, organs and tissues of animals.

12. Additional information

Lessons of students scientific circle of operative surgery and topographical anatomy department are cerried out according timetable in educational rooms of the department for the students of second, third, fourth, fifth and sixth courses of medical and dentistry departments of Ukrainian and English-medium departments. The head of the scientific circle senior lecturer Orel M. G.

Sylabus compilers

Ass prof., PhD Rudnytska Kh. I. (Signature)

Senior lecturer, Orel M. G. . (Signature)

Head of the department, Prof. Masna Z. Z. . (Signature)