

MINISTRY OF HEALTH OF UKRAINE
DANYLO HALYTSKYI LVIV NATIONAL MEDICAL UNIVERSITY
Department of Pathological Anatomy and Forensic Medicine



CONFIRM
First Vice-Rector
of educational and scientific work
Associate Professor Iryna SOLONYNKO

Iryna Solonyenko
17 " 12 2023

EDUCATIONAL PROGRAM
in
«AUTOPSY COURSE»
for 5th year students of General Medicine Faculty
for preparation of specialists of the second (master's degree) level of higher education
OK40.3
area of knowledge 22 «Public Health»
specialty 222 «Medicine»

Discussed and approved at the
Methodological meeting of the
Department of Pathological Anatomy
and Forensic Medicine,
protocol № 9 from 14.03.2023
Chief of the Department
Prof. Yurii POSPISNYI



Confirmed
by profile Methodological Committee
in medical and biological subjects
protocol № 2 from 23.03.2023
Chief of the profile Methodological Committee
Prof. Alexander LUTZYK

Alexander Lutzyk

Lviv-2023

[Handwritten signature]

PROGRAM DEVELOPERS:

- Associate Professor of Pathological Anatomy and Forensic Medicine Ph.D. M. I. Servetnyk
- Associate Professor of Pathological Anatomy and Forensic Medicine Ph.D. V. I. Vovk

REVIEWERS:

Professor, D.M.Sci. M. S. Regeda

Professor, D.M.Sci. O. R. Pinyazhko

1. Introduction

Program in the discipline "**Autopsy course**" for the training of specialists of the second (master's) level of higher education, studying in the specialty 222 "Medicine", field of knowledge 22 "Health" - because the study of sectional course is carried out in the IX semester of the 5th year of study, the ultimate goals of the course are the same, so a single program of the sectional course for these specialties.

The program is compiled in accordance with the following regulations approved by the Ministry of Health of Ukraine on March 24, 2015: Law of Ukraine "On Higher Education" dated 01.07.2014 № 1556-VII, order of the Ministry of Education and Science of Ukraine № 47 dated 26.01.2015 "On the peculiarities of curriculum formation 2015/ 2016 academic year ", registered in the Ministry of Justice of Ukraine on 04.02.2015 under № 132/26577, letters of the Ministry of Education and Science of Ukraine dated 20.01.2015 №1 / 9-19 "Regarding the organization of attestation of higher education applicants and organization of the educational process ", dated 13.03. 2015 №1 / 9-126 "On the peculiarities of the organization of the educational process and the formation of curricula in the 2015/2016 academic year", letters of the Ministry of Health of Ukraine dated 24.03.2015 №08.01-47 / 8986 and dated 16.04.2015 №08.01-47 / 12037 About the statement of the adjusted curricula of undergraduate preparation of experts of branches of knowledge 1201 "Medicine" and 1202 "Pharmacy".

The main purpose of the "**Autopsy course**" - students mastering the method of clinical and anatomical analysis of biopsy, surgical and sectional material and the principles of diagnosis, technique of autopsy and preparation of pathological documentation. During the course, students get acquainted with the structure of the pathological service, which is an integral part of the health care system in Ukraine. The Pathological Service is aimed at improving the quality of medical and diagnostic and preventive work and its improvement is regulated by Order № 1877 of 06.09.2021 of the Ministry of Health of Ukraine "On approval of the procedure for pathological autopsy", and Order № 179 of 29.03.2006 "On approval instructions for determining the criteria of the perinatal period of live births and stillbirths. Procedure for registration of live births and stillbirths".

"**Autopsy course**" as a discipline lays the foundations of knowledge about the organization of pathological service and its purpose, provides knowledge of morphological and clinical manifestations of diseases at all stages of their development, summarizes the skills of clinical and anatomical analysis, synthetic analysis of diagnostic signs and their correct interpretation. causal relationships, which is necessary for further professional activity. Types of educational activities of students according to the curriculum are practical classes and student's self-reliant work (SRS).

The subject of the discipline is an in-depth study of the morphological background, clinical manifestations, complications and consequences of therapeutic, surgical, infectious diseases in order to learn the basics of medicine and clinical picture of diseases with subsequent use of knowledge in practice.

Interdisciplinary links: the study of the discipline is based on students' knowledge of pathomorphology, pathophysiology, forensic medicine, therapy, surgical diseases, infectious diseases, pediatrics, obstetrics and gynecology, urology, oncology, and integrates with these disciplines; this involves the formation of skills to apply the acquired knowledge and practical skills from the sectional biopsy course in the process of further study and in future professional activities.

1. The purpose and objectives of the discipline

1.1. The purpose of studying the discipline "Autopsy course" is to deepen and systematize knowledge about the organization and purpose of pathological and anatomical services, lifelong pathomorphological diagnosis, skills of analysis and prevention of diagnostic and therapeutic errors, as well as the issuance of a medical certificate of death.

1.2. The main objectives of the discipline "Autopsy course" are:

- Mastering the basics of knowledge about the organization of pathological service and its purpose.
- Mastering modern methods of morphological examination.
- Determining the value of clinical -anatomical analysis as a method of knowledge of the circumstances of diseases, features of their course, causes and mechanisms of death, their development (morphogenesis), structural bases of recovery, complications and consequences of diseases
- Assimilation of the structure of clinical and pathological diagnoses his, comorbidities, cause of death), as well as the concept: combined underlying disease, competing, combined and background with the use of the International Statistical Classification of Diseases.
- Study of variants of pathomorphosis of diseases arising in connection with changing human living conditions and as a result of various treatment measures (pathology of therapy);
- Interpretation of the causes of pathomorphosis of diseases and etiology, clinical and pathomorphological manifestations of iatrogenic pathology.

1.3. As a result of studying the discipline the student must

know:

- Determining the main tasks of the pathological and anatomical service of Ukraine.
- Elucidation of the basics of projection: from the appearance of the corpse, the technique of its dissection to the formulation of the final diagnosis.
- Study of biopsy, surgical material, manure.
- Defining the role of medical control commissions, clinical and anatomical conferences and commissions for the study of fatalities.
- Acquaintance with the relevant documentation for filling in the medical certificate of death, medical certificate of perinatal death, as well as referrals for pathological examination of surgical and biopsy materials.

be able:

- to determine the tasks of the pathological anatomical bureau, the centralized prosecutor and the pathological anatomical department of the central district hospital;
- to establish the causes (etiology), mechanisms of development (pathogenesis), morphological bases of these mechanisms (morphogenesis), consequences of diseases, namely recovery and its mechanisms (sanogenesis), complications, and mechanisms of death (thanatogenesis). Identify diagnostic errors and fill out a medical death certificate;
- formulate a pathological diagnosis indicating the underlying disease, complications, comorbidities and causes of death;
- pay attention to changes in the course and pathomorphology of diseases (pathomorphosis) and diseases that develop as a result of the doctor's activity (iatrogenic);
- interpret different types of biopsy and surgical material;
- determine the role of clinical and anatomical conferences, medical control commission and commission for the study of fatalities.

1.4. Competences and learning outcomes, the formation of which is facilitated by the discipline "Autopsy course"

Competency and training results developed by the subject (the correlation with the normative content of training acquired by those who are obtaining higher education formulated in the terms of study results of Higher Educational Standards).

According to the requirements of Higher Education Standards, the subject provides the development of the following competence:

- ***integral:*** the ability to solve complex problems, including those of a research and innovation nature in the field of medicine; the ability to continue learning with a high degree of autonomy.
- ***general:***
 - ability to abstract thinking, analysis and synthesis;
 - 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;
 - ability to make informed decisions;
 - ability to work in a team;
 - ability for interpersonal interaction;
 - ability to communicate in a foreign language;
 - ability to use information and communication technologies;
 - ability to search, process and analyze information from various sources;
 - determination and perseverance regarding the assigned tasks and assumed duties;
 - awareness of equal opportunities and gender issues;
 - 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.

• ***special (professional, subject):***

- ability to collect medical information about the patient and analyze clinical data;
- ability to determine the necessary list of laboratory and instrumental studies and evaluate their results;
- ability to establish a preliminary and clinical diagnosis of the disease;
- 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.

Details of the competences are set out below in the matrix table of competences according to HPK descriptions.

The Matrix of Competences

№ №	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
Integral competence					
The ability to solve complex problems, including those of a research and innovation nature in the field of medicine; the ability to continue learning with a high degree of autonomy.					
General competences					
1.	Ability to abstract thinking, analysis and synthesis (GC1)	To know the methods of analysis, synthesis and further modern education	Be able to analyze information, make informed decisions, be able to acquire modern knowledge	Ability to effective communication in the course of analytical-synthetic activity	To be responsible for the analysis of acquired modern knowledge and their synthesis
2.	The ability to learn and master modern knowledge (GC2)	To know ways of further education in order to obtain modern knowledge	Be able to analyze the received information, make informed decisions, be able to acquire modern knowledge	Establish relevant connections to achieve goals	To be responsible for the timely acquisition of modern knowledge
3.	Ability to apply knowledge in practical situations (GC3)	To have knowledge of the appropriate level in theoretical and clinical disciplines	To be able to apply knowledge of medical disciplines in practical situations	The ability to effectively form a communication strategy in professional activity; ability to share professional knowledge	To be responsible for the correct application of relevant knowledge in practical situations
4.	Knowledge and understanding of the subject field and understanding of professional activity (GC4)	To know and understand the subject field, understand the basic principles of professional activity	To be able to use the acquired knowledge in the subject area and their understanding in professional activities	The ability to effectively form a communication strategy in professional activity	To be responsible for knowledge and understanding subject area and understanding of the principles of professional activity
5.	Ability to adapt and act in a new situation (GC5)	To know ways to adapt and act in new situations	To be able to choose methods of adaptation and actions in new	To use the possibilities of communication in	To be responsible for timely adaptation and

			situations	order to adapt and act in new conditions	actions in new situations
6.	The ability to make informed decisions (GC6)	To possess knowledge of the appropriate level for making informed decisions	Be able to justify the decisions made	Ability to communicate effectively within a professional team in order to make informed decisions	Be responsible for the decisions made
7.	Ability to work in a team (GC7)	To know tactics and strategies of communication, laws and methods of communicative behavior	Be able to choose communication methods and strategies to ensure effective teamwork	Use communication strategies and interpersonal skills	To be responsible for the choice and tactics of the method of communication
8.	The ability for interpersonal interaction (GC8)	To know tactics and strategies of communication, laws and methods of communicative behavior	Be able to choose communication methods and strategies to ensure effective teamwork	Use communication strategies and interpersonal skills	To be responsible for the results interpersonal interaction
9.	The ability to communicate in a foreign language (GC9)	To have basic knowledge of a foreign language	Be able to apply knowledge of a foreign language both orally and in writing	Use a foreign language in professional activities	To be responsible for the level of foreign language proficiency, for the constant development of professional knowledge
10	The ability to use information and communication technologies (GC10)	To have deep knowledge in the field of information and communication technologies, which are used in professional activities	Be able to use information and communication technologies in a professional field that requires updating and integration of knowledge	Use information and communication technologies in professional activities	To be responsible for the development of professional knowledge and skills in the field of information and communication technologies
11	The ability to search, process and analyze information from various sources (GC11)	To know search platforms for obtaining relevant professional information	To be able to provide a quality search for information sources, process and analyze the received data	To establish contacts to ensure high-quality execution of the search for the necessary information, its processing and analysis	To be responsible for the results of the search, processing and analysis of professional information
12	Determination and perseverance regarding the assigned tasks and assumed duties (GC12)	To know the responsibilities and ways of performing assigned tasks	To be able to determine the goal and task, to be reliable and conscientious in the performance of duties	Establish interpersonal relationships for effective performance of tasks and duties	To be responsible for the high-quality performance of assigned tasks; to be responsible for the fulfillment of obligations
13	Awareness of equal opportunities and gender issues (GC13)	To know about equal opportunities and be aware of gender	Adhere to equal opportunities and be able to avoid gender	Establish equal opportunities and understand potential	Be responsible for ensuring equal opportunities and

		issues	issues	gender issues during assignments	avoiding potential gender issues
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 (GC15)	To know about the necessity to preserve and multiply moral, cultural and scientific values, 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, the development of society, technology and technologies	Preserve and multiply moral, cultural and scientific values, based on an understanding of the history and patterns of development of the subject field and its place in the general system of knowledge about nature	Use all opportunities to preserve and increase moral, cultural and scientific heritage	To be responsible for the preservation and multiplication of moral, cultural and scientific values, based on the understanding of the importance of the subject field as a science and its place in the general system of natural knowledge
Special (professional) competences					
1	Ability to collect medical information about the patient and analyze clinical data (PC1)	To know the methods of obtaining medical information about the patient, to have knowledge about the analysis of clinical data	Be able to collect relevant medical information about a patient and analyze clinical data	To be able to establish communication links with the patient in order to obtain the necessary medical information about him	Be responsible for the received medical information in each specific case; be responsible for the correctness of clinical data analysis
2	The ability to determine the necessary list of laboratory and instrumental studies and their evaluation results (PC2)	To know about the necessary laboratory and instrumental research methods	Be able to determine the necessary list of laboratory and instrumental research methods; to be able to evaluate their results	Use communication methods in the process of determining the necessary list of laboratory and instrumental research methods, as well as in the process of evaluating their results	Be responsible for the selected list of necessary laboratory and instrumental research methods, as well as for evaluating their results
3	Ability to establish a preliminary and clinical diagnosis of the disease (PC3)	To have specialized (professional) knowledge necessary for establishing preliminary and clinical diagnoses of the disease	Be able to formulate preliminary and clinical diagnoses of the disease	To be able to communicate effectively with other members of the professional team in order to establish the correct preliminary and clinical diagnoses of the disease	To be responsible for the established preliminary and clinical diagnosis of the disease
11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or	To have knowledge of ways to solve medical problems in new or unfamiliar situations with incomplete or limited	Be able to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information,	Be able to communicate effectively in order to solve certain medical problems in unfamiliar	To be responsible for solving medical problems in new or unfamiliar situations with incomplete or limited information;

	limited information, taking into account aspects of social and ethical responsibility (PC11)	information; know and understand aspects of social and ethical responsibility	taking into account aspects of social and ethical responsibility	environments or under conditions of limited information	to know and understand aspects of social and ethical responsibility
16	Ability to maintain medical documentation, including electronic forms (PC16)	To know the rules of maintaining medical documentation, including electronic forms	Be able to keep medical documentation, including in electronic form	Be able to establish effective communication in order to maintain medical records correctly	Be responsible for completed medical documentation, including in electronic form
17	The ability to assess the impact of the environment, socio-economic and biological determinants on the state of health of an individual, family, population (PC 17)	To know about the possible consequences of the impact of the environment, socio-economic and biological determinants on the health of a person, family, population	Be able to identify and evaluate the consequences of environmental, socio-economic and biological determinants on the health of a person, family, population	To be able to establish communication with patients in order to assess the consequences the impact of the environment, socio-economic and biological determinants on the health of a person, family, population	Be responsible for assessing the effects of environmental, socio-economic and biological determinants on the health of a person, family, population
18	The ability to analyze the activity of a doctor, unit, health care institution, ensure the quality of medical care and increase the efficiency of the use of medical resources (PC18)	To have knowledge of conducting an analysis of the activity of a doctor, unit, health care institution, ensuring the quality of medical care and increasing the efficiency of the use of medical resources	Be able to analyze activity of a doctor, unit, health care institution, ensuring the quality of medical care and improving the efficiency of the use of medical resources	Be able to communicate in order to analyze the activity of a doctor, unit, health care institution, ensure the quality of medical care and increase the efficiency of the use of medical resources	Be responsible for analysis of the activity of a doctor, unit, health care institution, ensuring the quality of medical care and improving the efficiency of the use of medical resources
21	To convey clear y own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying (PC21)	To have knowledge about ways to convey own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying	Be able to convey own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to persons who are studying	Establish communication in order to clearly present one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying	To be responsible for own knowledge, conclusions and arguments on health care issues conveyed to specialists and non-specialists
22	Ability to manage healthcare workflows that are complex, unpredictable and require new strategic approaches (PC22)	To know the ways and methods of managing work processes in the field of health care, which are complex, unpredictable and require new strategic approaches	Be able to manage work processes in the field of health care, which are complex, unpredictable and require new strategic approaches	To establish communication in order to effectively manage complex and unpredictable work processes in health care	To be responsible for the results of managing complex and unpredictable work processes in Health Care system that require new strategic approaches

23	The ability to develop and implement scientific and applied projects in the field of health care (PC23)	To know the main stages of implementation of scientific and applied projects in the field of health care	Be able to apply specialized knowledge at various stages of development and implementation of scientific and applied projects in the field of health care	To be able to communicate effectively at various stages of the development and implementation of scientific and applied projects in the field of health care	To be responsible for development and the realization of scientific and practical ones of projects in the field of health care
24	Compliance with ethical principles when working with patients and laboratory animals (PC24)	To know about ethical principles when working with patients and laboratory animals	Be able to apply the principles of ethics when working with patients and laboratory animals	Justified use principles of ethics when working with patients and laboratory animals	Be responsible for observing ethical principles when working with patients and laboratory animals
25	Observe professional and academic integrity, bear responsibility for the reliability of the obtained scientific results (PC25)	To know about the necessity to follow the principles of professional and academic integrity, responsibility for the reliability of the obtained scientific results	Be able to apply principles of professional and academic integrity, responsibility for the reliability of the obtained scientific results	Justified use of the principles of professional and academic integrity, responsibility for the reliability of the obtained scientific results	Carry out responsibility for adherence to the principles of professional and academic integrity, reliability of received scientific results

Program learning outcomes determined by the standard of higher education of the specialty

№	Program learning outcomes (PLO) – (IIPH)
PLO1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that requires updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy
PLO2	Understanding and knowledge of fundamental and clinical biomedical sciences at a level sufficient for solving professional tasks in the field of health care
PLO3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems
PLO4	To reveal and identify leading clinical symptoms and syndromes ; according to standard methods, using data from the patient's history, examination of the patient, knowledge about the person, his organs and systems, establish a preliminary diagnosis of the disease
PLO7	Prescribe and analyze additional (mandatory and additional) examination methods (laboratory, functional and/or instrumental) for patients with diseases of organs and body systems for differential diagnosis
PLO21	Find the necessary information in the professional literature and databases of other sources, analyze, evaluate and adequately apply this information

PLO23	Assess the impact of the environment on human health to assess population morbidity
PLO27	Communicate freely in the national and English languages both orally and in writing to discuss professional activities, research and projects
PLO28	Make effective decisions about health care problems, evaluate the necessary resources, take into account social, economic and ethical consequences

2. Information volume of discipline

Topic 1. Tasks and methods of pathological service and its place in the health care system of Ukraine (order № 81 from 12.05.1992 of the Ministry of Health of Ukraine "On the development and improvement of pathological service in Ukraine", as well as order № 179 from 29.03.2006 "On approval of the instructions for determining the criteria of the perinatal period of live births and stillbirths. The procedure for registration of live and stillbirths"). The main tasks of the pathology bureau, the centralized prosecutor and the pathology department of the central district hospital. Job requirements for the pathologist and department staff. Equipment and facilities of the pathology department. Deontological and ethical aspects in pathological practice.

Autopsy of the deceased. The procedure for dissecting corpses in treatment and prevention facilities. Features of the baby's autopsy. Preservation of organs after autopsy. Examination of organs after autopsy. Embalming and cleaning the corpse. Basic pathological documentation. Pathological autopsy report, its components - pathological diagnosis and pathological epicrisis (comparison of clinical and pathological diagnoses, conclusion about the cause of death, defects in diagnosis and treatment).

Topic 2. Construction of pathological diagnosis, variants of combined underlying disease (variants of combined, combined and background diseases). Determination of the underlying disease, complications, comorbidities. Options for formulating a pathological diagnosis in cases of various diseases, including infectious, taking into account the peculiarities of the course and pathomorphological picture due to new strains of the pathogen (SARS, COVID-19 and other viral diseases) and in cases of perinatal pathology. Rules and procedure for filling out a medical death certificate and a medical certificate of perinatal death. The concept of the main and immediate cause of death.

Topic 3. Definitions of pathomorphosis, iatrogenic (second disease). Features of the disease. and comparing it with the clinical. Causes of incorrect clinical diagnoses (objective, subjective). Categories of discrepancies of diagnoses: P-1, P-2, P-3 (appendix № 8 to the order of the Ministry of Health of Ukraine from 12.05.1992 № 81) Significance of discrepancies of diagnoses for the patient.

Preparation and holding of a meeting of the medical control commission, the commission for the study of fatal consequences and a clinical and anatomical conference. General hospital, departmental and profile clinical and anatomical conferences as a type of joint activity of pathologists and clinicians and their tasks. Date and procedure for conferences. The nature of the material selected for the conference. The role of the pathologist in conducting clinical and anatomical conferences, medical control commissions and commissions for the study of fatalities.

Topic 4. Method of research of biopsy and surgical material. Rules of research of biopsy, operative and cytological material. The role of modern morphological research methods in the diagnosis of diseases. Rules for directing objects for examination to the pathology department. Processing of material obtained from various organs and pathological formations. Deadline for biopsies. Boundaries of biopsy sampling. The form of the pathologist's response to the biopsy. Shelf life of histological preparations of biopsies. Final lesson.

3. The structure of discipline. Description of the curriculum of discipline "Autopsy course" for students of medical faculty in the specialty 222 "Medicine".

Educational subject, its structure	Quantity of hours, from them			SRW	Year of study	Type of control
	In total	Auditorial				
		Lectures	Practical studies			
<i>Autopsy course</i>	0,5credits of ECTS/ 15 hours	-	8	7	V	Credit (standartized)

Theme	Lec-tures	Practical training	SRW	Individual SRS
1. Problem and methods of pathology service and its place in the world system of Public Health. Basic documents used in pathology service. Case history examination. Autopsy. Autopsy examination's report: general requests, main chapters (passport data, final clinical diagnosis, gross view (macroscopical) examination: external and internal views, results of histological examination, final epicrisis). Main principle and rules of autopsy report creation	-	2	2	-
2. Final pathomorphological diagnosis, its structure, variants of combined primary disease(s) (paired main diseases, concur main diseases, main disease and a background pathology). Definition of main disease, its complications, secondary (accompanied) diseases. Variants of pathomorphological diagnosis in cases of various pathology of CNS diseases, cardio-vascular system diseases, respiratory system diseases, diseases of GIT and urinary tract and in cases of perinatal pathology. Peculiarities of diagnosis in cases of complicated surgical treatment. Peculiarities of diagnosis in cases of obstetric pathology, pathology of pregnancy, delivery and post-partal period. Main cause of death. Definition. Medical death certificate, its role for statistics. Rules of death certificate's filling in.	-	2	2	-
3. Definition of iatrogenic pathology, its place in a final pathomorphological diagnosis. Definition of pathomorphosis. Types of pathomorphosis. Diagnostical mistakes. Classification of concordance between clinical and pathological diagnosis. Clinical-anatomical conference.	-	2	2	
4. Biopsies. Definition. Types of biopsies. Investigation of operation material. Main stages of preparation of histological slides. Methods of fixation and staining. Special histological techniques of slides examination (histochemical methods, immunostaining methods, method of electron microscopy). Concluding session.	-	2	1	
	-	8	7	
Total amount of hours 15 Credits of ECTS – 0,5	-	8	7	
The form of final control				Credit

4. Thematic plan of practical lessons

№	Theme	Amount of hours
1	Problem and methods of pathology service and its place in the world system of Public Health. Basic documents used in pathology service. Case history examination. Autopsy. Autopsy examination's report: general requests, main chapters (passport data, final clinical diagnosis, gross view (macroscopical) examination: external and internal views, results of histological examination, final epicrisis). Main principle and rules of autopsy report creation.	2
2	Final pathomorphological diagnosis, its structure, variants of combined primary disease(s) (paired main diseases, concur main diseases, main disease and a background pathology). Definition of main disease, its complications, secondary (accompanied) diseases. Variants of pathomorphological diagnosis in cases of various pathology of CNS diseases, cardio-vascular system diseases, respiratory system diseases, diseases of GIT and urinary tract and in cases of perinatal pathology. Peculiarities of diagnosis in cases of complicated surgical treatment. Peculiarities of diagnosis in cases of obstetric pathology, pathology of pregnancy, delivery and post-partal period. Main cause of death. Definition. Medical death certificate, its role for statistics. Rules of death certificate's filling in.	2
3	Definition of iatrogenic pathology, its place in a final pathomorphological diagnosis. Definition of pathomorphosis. Types of pathomorphosis. Diagnostical mistakes. Classification of concordance between clinical and pathological diagnosis. Clinical-anatomical conference.	2
4	Biopsies. Definition. Types of biopsies. Investigation of operation material. Main stages of preparation of histological slides. Methods of fixation and staining. Special histological techniques of slides examination (histochemical methods, immunostaining methods, method of electron microscopy). Concluding session.	2
	In total	8
	Form of control - credit	1

5. Student's self-reliant work

№	Theme	Amount of hours	Type of control
1.	Preparation of an autopsy report	2	current control during practical lesson
2.	Pathomorphology as a fundamental scientific-theoretical and practical medical discipline. Deontology and ethics in practical work of pathologist.	2	
3.	Preparation of final pathological diagnosis. Rules and procedure for filling. Work with ICD X revision (1995) according to the pathological diagnosis of autopsy.	2	
4.	Medical death certificate, its filling in. The concept of the main and immediate cause of death.	1	
	In total	7	

6. Teaching methods

The program of the discipline is structured on one module, which includes one content module. The amount of student workload is described in ECTS credits - credit credits, which are credited to students upon successful completion of the relevant module (credit).

Types of educational activities of students according to the curriculum are: a) practical classes, b) student's self-reliant work (SRW).

Practical classes include:

- 1) students study the organizational structure of the pathology service and orders of the Ministry of Health of Ukraine, which regulate its work, including knowledge of the documentation of the pathology bureau and pathology departments;
- 2) participation in the autopsy and registration of the protocol of pathological autopsy, knowledge of the procedure for filling out and issuing a medical certificate of death, a medical certificate of perinatal death;
- 3) rules of research of biopsy and operative, cytological material, limits of biopsies, the form of the pathologist's answer to a biopsy;
- 4) tasks of the medical-control commissions and the commission for the study of lethal consequences and the clinical-anatomical conference;
- 5) knowledge of deontological and ethical aspects in pathological practice.

At each practical lesson, the student answers tests on the topic of this practical lesson, standardized questions, knowledge of which is necessary to understand the current topic; demonstrates knowledge and skills in accordance with the topic of practical training.

7. Methods of control

The current learning activities of students are monitored in practical classes in accordance with specific goals and during the self-reliant work of the teacher with students.

Current control is carried out at each practical lesson in accordance with the specific objectives of the topic, as well as during the individual work of the teacher with the student for those topics that the student develops independently and they are not part of the practical lesson. It is recommended to use the following tools to diagnose the level of preparation of students: tests; solving situational problems; structured written works; structured control of practical skills and abilities (assessment of knowledge and ability to analyze macro-and microscopic changes of organs and systems at autopsy of the deceased, the ability to fill out medical certificates of death and perinatal death, the ability to prepare and conduct clinical anatomical conferences in the form of role play, knowledge of biopsy material).

Self-reliant work Assessment of independent work of students, which is provided in the topic along with classroom work, is carried out during the current control of the topic in the relevant classroom. Assessment of topics that are submitted only for independent work and are not included in the topics of classroom classes is controlled during the test.

8. Distribution of points received by students

Type of control - current.

The form of final control in accordance with the curriculum - credit.

Evaluation criteria - during the evaluation of the mastering of each topic for the current educational activity of the student grades are set on a 4-point (traditional) scale. This takes into account all types of work provided by the curriculum. The student must receive a grade on each topic. Forms of assessment of current educational activities include control of theoretical and practical training. Scores on the traditional scale are converted into points.

"Excellent" ("5") - The student correctly answered 90-100% of the A format tests. Correctly, clearly, completely and logically answers the standardized questions of the current topic. Closely connects theory with practice and correctly demonstrates the implementation of practical skills, correctly performed all tasks related to the topic. Freely interprets the position of the topic, is able to summarize the material.

"Good" ("4") - The student correctly answered 70-89% of the tests of format A. Correctly and essentially answers the questions of the current topic. Demonstrates the performance of practical skills, correctly or with minor errors performed all tasks related to the topic of the lesson. Correctly uses

theoretical knowledge to interpret situational problems. Has the necessary practical skills and techniques to perform them in excess of the required minimum.

"Satisfactory" ("3") - The student correctly answered 60-69% of the tests of format A. Incomplete, with the help of additional questions, answers the standardized questions of the current topic. Cannot build a clear, logical answer on their own. During the answer and demonstration of practical skills makes significant mistakes, with significant mistakes completed the task. The student solves only easy situational problems, has only a minimum of necessary practical skills.

"Unsatisfactory" ("2") - The student answered correctly less than 60% of the tests of format A. Does not know the material of the current topic. Cannot independently build a logical answer to additional questions, does not understand the content of the material. When answering and demonstrating, performing practical skills makes significant, gross mistakes.

The maximum number of points that a student can score for the current academic activity in the study of the discipline is 200 points.

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

The calculation of the number of points is based on the grades obtained by the student on a traditional scale during the study of the discipline during the semester, by calculating the arithmetic mean (MA), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:

$$x = \frac{MA \times 200}{5}$$

Conversion table on a 200-point scale:

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	200	4.45	178	3.92	157	3.37	135
4.97	199	4.42	177	3.89	156	3.35	134
4.95	198	4.4	176	3.87	155	3.32	133
4.92	197	4.37	175	3.84	154	3.3	132
4.9	196	4.35	174	3.82	153	3.27	131
4.87	195	4.32	173	3.79	152	3.25	130
4.85	194	4.3	172	3.77	151	3.22	129
4.82	193	4.27	171	3.74	150	3.2	128
4.8	192	4.24	170	3.72	149	3.17	127
4.77	191	4.22	169	3.7	148	3.15	126
4.75	190	4.19	168	3.67	147	3.12	125
4.72	189	4.17	167	3.65	146	3.1	124
4.7	188	4.14	166	3.62	145	3.07	123
4.67	187	4.12	165	3.57	143	3.02	121
4.65	186	4.09	164	3.55	142	3	120
4.62	185	4.07	163	3.52	141	Less than 3	Insufficient
4.6	184	4.04	162	3.5	140		
4.57	183	4.02	161	3.47	139		
4.52	181	3.99	160	3.45	138		
4.5	180	3.97	159	3.42	137		
4.47	179	3.94	158	3.4	136		

Determining of the number of points scored in discipline.

The grade from the sectional course is based on the results of the current educational activity and is expressed on a two-point scale "passed" or "not passed". To be enrolled, a student must receive a score of at least 60% of the maximum amount of points in the discipline (200 points) for the current academic activity. Points from the discipline are independently converted into both the ECTS scale and the 4-point scale. ECTS scale scores are not converted to a 4-point scale and vice versa.

The number of points in discipline is converted into the ECTS scale as follows:

Mark of ECTS	Statistic index
A	The best of 10 % of students
B	Following 25 % of students
C	Following 30 % of students
D	Following 25 % of students
E	The last of 10 % of students

Discipline's scores for students who successfully completed the program are converted into a traditional 4-point scale by absolute criteria as follows:

Points in the discipline	Estimation on a 4-mark scale
From 170 to 200 points	"5"
From 140 to 169 points	"4"
From 139 points to 120 points	"3"
Less 120 points	"2"

9. Equipment, logistics and software of the discipline

Histological laboratories, section halls, microscopes, collections of macro- and micropreparations (educational collection and collection of the Museum of Human Diseases); tables; photo; multimedia presentations; methodical developments for teachers; methodical instructions for practical classes for students; methodical materials that provide independent work of students; MISA training platform software.

10. Methodical support (educational content)

1. Working curriculum of the discipline;
2. Plans of practical classes and independent work of students;
3. Methodical developments for the teacher;
4. Methodical instructions for practical classes for students;
5. Methodical materials that provide independent work of students;
6. Test and control tasks for practical classes;
7. Questions and tasks to control the assimilation of the section (credit);

10.1 List of questions for preparation for the final control (credit)

1. Pathomorphology is a fundamental discipline that promotes the professional growth of physicians.
2. The role and place of the pathologist in the structure of health care.
3. History of pathological anatomy development in Ukraine.
4. Job requirements for pathologist and department staff.
5. Equipment and facilities of the pathology department of the hospital.
6. The procedure for dissecting corpses in treatment and prevention facilities.
7. Technique of pathological autopsy.
8. External examination of the corpse.
9. Dissection of body cavities and selection of internal organs.
10. Brain examination.
11. Autopsy of the neck and chest.
12. Respiratory examination.
13. Opening of the heart and blood vessels.
14. Research of digestive organs.
15. Autopsy of the genitourinary system.
16. Examination of the spleen.
17. Bone marrow examination.
18. Examination of the lymph nodes and lymphatic thoracic duct.
19. Examination of bones and joints.
20. Features of autopsy of an infant, stillborn.
21. Determination of criteria for live birth, stillbirth, perinatal period.
22. Preservation of organs after dissection, embalming and cleaning of the corpse.
23. The concept of the underlying disease, its complications that accompany the underlying disease.

24. Determination of the underlying disease.
25. Determining the complications of the underlying disease.
26. Definition of concomitant diseases.
27. Determining the immediate cause of death.
28. Documentation on autopsy of the dead.
29. Pathological autopsy protocol and its components.
30. Filling in the passport part of the protocol.
31. Pathological diagnosis. Components of pathoanatomical diagnosis and pathoanatomical epicrisis.
32. Problems of pathological epicrisis.
33. Rules of registration of the protocol of pathological autopsy.
34. The procedure for completing and issuing a medical death certificate.
35. Comparison of clinical and pathological diagnoses.
36. Methods of research of biopsy and operative material.
37. Rules of research of biopsy, operative and cytological material.
38. The amount of work recommended for histological and histochemical examination of sectional and biopsy material.
39. How is the collection and delivery of objects for examination to the pathology department.
40. Collection and processing of material obtained from various organs and pathological formations.
41. Deontological and ethical aspects in pathological practice.
42. The role of modern morphological research methods in the diagnosis of diseases.
43. Pathomorphological bases of resuscitation and intensive care, their connection with forensic assessment of changes in organs and tissues.
44. Deontology in the practical work of a pathologist.

11. Recommended literature

Required

1. Robbins&Cotran Pathologic Basis of Disease (Robbins Pathology) 10th Edition by V.Kumar, A.K.Abbas, J.C.Aster. – Canada: Elsevier Health Sciences, 2020 – 1392 p.
2. Robbins Basic Pathology (Robbins Pathology) 10th Edition by V.Kumar, A.K.Abbas, J.C.Aster. – Canada: Elsevier Health Sciences, 2017 – 952 p.
3. Diagnostic Pathology: Cytopathology 2nd Edition by D.M.Michael, J.Thrall, S.Krishnamuthy. – Elsevier Health Sciences, 2018 – 850 p.
4. Sternberg's Diagnostic Surgical pathology [2-Volume Set] 7th Edition by S.E.Mills, J.K.Greenon, J.L.Hornick, T.A.Longacre, V.E.Reuter. – Lippincott Williams and Wilkins, 2022.
5. Pathology: Implications for the Physical Therapist 5th Edition by C.C.Goodman, K.S.Fuller. – Elsevier Health Sciences, 2020 – 1800 p.
6. Comprehensive Radiographic Pathology 7th Edition by R.L.Eisenberg, N.M.Johnson. – Elsevier Health Sciences, 2020 – 480 p.
7. BRS Pathology 6th Edition by M.E.Peyton Gupta. – Wolters Kluwer Health, 2020. – 496 p.
8. Molecular Pathology 2nd Edition: The Molecular Basis of Human Diseases by W.Coleman, G.Tsongalis. – Academic Press, 2017. – 802 p.
9. Dabbs D.J. Diagnostic immunohistochemistry / D.J. Dabbs // – Churchill Livingstone, 2006. – 828p.
10. Harsh Mohan. Textbook of Pathology, 4th ed. – New Delhi: J.B. Medical Publishers (P)LTD, 2000. – 949 p.
11. Guy N. Ritty Essentials of Autopsy Practice / Guy N. Ritty. – Springer-Yerlag London Limited, 2008. – 187 p.

Optional

1. Textbook and Methodical recommendations with practical training on biopsy-sectional course / A.Zagoroulko, T.Filonenko, G.Nechiporenko, N. Novikov - Simferopol, 2009.- 94 p.
2. Biopsy-autopsy course (Clinical pathology): [text-book for practical classes in clinical pathology for English medium medical students] / [I.V. Sorokina, V.D. Markovskiy, G.I. Gubina-Vakulik and other]; edited by I.V. Sorokina, V.D. Markovskiy. – Kharkiv: 2012. –59 p.
3. Biopsy-sectional course : study guide / A. M. Romaniuk, L. I. Karpenko, R. A. Moskalenko et al. – Sumy : Sumy State University, 2015. – 132 p.

12. Information resources

1. Наказ МОЗ України № 1877 від 06.09.2021 року « Про затвердження порядку проведення патологоанатомічного розтину»
<https://zakon.rada.gov.ua/laws/show/z1239-21>
2. Наказ МОЗ України № 179 від 29.03.2006 року «Про затвердження інструкції з визначення критеріїв перинатального періоду живонародженості та мертвонародженості. Порядок реєстрації живонароджених і мертвонароджених».
<https://zakon.rada.gov.ua/laws/show/z0427-06#Text>
3. Форма № 106/о «Лікарське свідоцтво про смерть» та Форма № 106-2/о «Лікарське свідоцтво про перинатальну смерть»:
http://search.ligazakon.ua/l_doc2.nsf/link1/RE13024.html
4. Список кодів МКХ-10.
https://uk.wikipedia.org/wiki/%D0%A1%D0%BF%D0%B8%D1%81%D0%BE%D0%BA_%D0%BA%D0%BE%D0%B4%D1%96%D0%B2_%D0%9C%D0%9A%D0%A5-10
5. Наказ МОЗ України № 503 від 29.08.2008 року Про затвердження Методичних рекомендацій «Кодування захворюваності та смертності у відповідності до Міжнародної статистичної класифікації хвороб та споріднених проблем охорони здоров'я Десятого перегляду»:
http://uazakon.com/documents/date_c0/pg_gbcrcw/index.htm
6. Форма № 013/о «Протокол патологоанатомічного дослідження»:
<http://zakon4.rada.gov.ua/laws/show/z0667-12#n3>
7. Форма № 014/о «Направлення на патологогістологічне дослідження»:
<http://zakon4.rada.gov.ua/laws/show/z0993-13#n3>
8. Постанови Кабінету Міністрів України від 11.03.2020 р. № 211 “Про запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом COVID-19”.