Foundation

evaluation tools

by discipline «Pathological anatomy»

Level of higher education
SPECIALITY

Field of study
31.05.01 - RF, 560001 - KR Section course

Qualification
Medical doctor

1. LIST OF COMPETENCES WITH INDICATION OF STAGES OF THEIR FORMATION IN THE PROCESS OF MASTERING A DISCIPLINE

Formed competencies	Planned results of training in the discipline that characterizes the stages of formation of competences	Types of assessment tools/ section code in this document
OPK-6: readiness to maintain medical records	**Know:** - organizational structure, tasks and system of activities of the pathological service in practical healthcare; - organization and legal basis of pathological autopsies; - principles and methods of studying biopsy material, rules for sending biopsy specimens and surgical material to the pathohistology laboratory; - structure and logic of the diagnosis at all stages of its formulation; - principles for formulating clinical and pathological diagnoses (taking into account some requirements of the International Classification of Diseases); - the concept of "iatrogeny" and its possible place in the patient's diagnosis; - principles of comparison of clinical and pathological diagnoses; - categories of discrepancy between diagnoses; - regulations on the treatment and control commission; - regulations on the clinical and pathological conference; - rules for registration and issuance of a medical death certificate; - deontological aspects that arise when organizing or canceling a pathological autopsy, issuing a medical death certificate, or a biopsy report.	**Block A, D** - reproductive level tasks - oral questioning;
	Skills: - justify the conduct or cancellation of a pathological autopsy; - issue a referral for examination of biopsy and surgical material and evaluate their results; - draw up intravital and postmortem clinical diagnoses;	**Block B, D** - reconstructive level tasks - solving situational tasks; - control questions of the final level.

Formed competencies	Planned results of training in the discipline that characterizes the stages of formation of competences	Types of assessment tools/ section code in this document
	- highlight the concepts: mechanism of death, immediate cause of death, main cause of death; - conduct clinical and morphological analysis of autopsy results; - compare clinical and pathological diagnoses; - determine the nature of clinical diagnostic errors and establish the category of discrepancies in diagnoses; - fill out a medical death certificate.	
	Expertise: - basic technologies for converting information: text, spreadsheet editors; Internet technology for professional activities; - the ability to analyze the significance of pathological anatomy at the present stage; - macroscopic diagnosis of pathological processes; - microscopic (histological) diagnosis of pathological processes; - skills of clinical and anatomical analysis	**Block C, D -** practice-oriented and/or research level tasks - microscopic - macroscopic diagnosis of pathological processes.

2. FLOW CHART OF THE DISCIPLINE/PRACTICE

Pathological anatomy planning sheet

Discipline of clinical anatomy
Field of study/specialization 31.05.01. General medicine
Course/semester 6/11
Credit units (CU) 2

Title of module according to WPD	Type of control	**Forms of control**	Minimal credit points	Maximal credit points	Week of control
Module 1					
Module 1. Structure goals and objectives pathological service in the system health care	Formative assessment	Interview	10	17.5	12
	Midterm examination	Abstracts	10	17.5	
Module 2					
Module 2. Sectional-biopsy section	Formative assessment	Interview Microslides	10	17.5	18
	Midterm examination	Abstracts	10	17.5	
Total			40	70	
Midpoint assessment			20	30	
Summative assessment			60	100	

3. STANDARD CONTROL TASKS AND OTHER MATERIALS NECESSARY TO EVALUATE THE PLANNED LEARNING RESULTS IN THE DISCIPLINE/PRACTICE (ASSESSMENT TOOLS)

Block A

A. 1. Survey questions

CONTROL QUESTIONS:

SECTION 1 “Structure, goals and objectives of the pathological service in the healthcare system”:

KNOW:

1. Objectives of the pathological service in the healthcare system.
2. Structure of the pathological service.
3. What cases are subject to analysis at clinical and pathological conferences?
4. Who is responsible for organizing and holding the conference, who are the main speakers at the conference?
5. Describe categories 1, 2, 3 of discrepancy between diagnoses.
6. List the sections of the patient’s diagnosis in sequence.
7. Define the main disease in the patient’s diagnosis (intravital and postmortem).
8. What is written in the first section of the patient’s diagnosis, besides the name of the disease?
9. Define a competing disease, indicate its place in the diagnosis?
10. Define a combined disease, indicate its place in the diagnosis.
11. Define the underlying disease, indicate its place in the diagnosis. 12. Define the concept of “second disease”, indicate its place in the diagnosis.
13. Describe the concept of “manifestations of the underlying disease”, indicate their place in the diagnosis.
14. Describe the concept of “complications of the underlying disease.”
15. In what order are complications of the underlying disease recorded if there are many of them?
16. Define comorbidities.
17. Define the concept of “patient diagnosis.”
18. Define the concepts “mechanism of death”, “immediate cause of death”, “main cause of death”.
19. How long after death in a hospital is it allowed to perform a pathological autopsy?
20. What accompanying documents are attached in the event of the death of a patient, when the corpse is admitted to the morgue?
21. Who should be present at autopsies of corpses of various profiles
22. What is a medical history
23. How does a pathological diagnosis differ from a post-mortem clinical diagnosis?

Situational tasks for biopsy diagnostics

Provide answers to the following questions in the proposed tasks:

1. What diseases can be suspected?
2. Is a biopsy necessary in this case or not?
3. If not, formulate a clinical diagnosis and your further tactics.
4. If yes, then what organs or tissues should be biopsied from what places?
5. What method of taking material can be used?
6. What volume or number of pieces should be sent for research?

Fill out a referral for a biopsy examination. After receiving the biopsy report, write:

1. What type of conclusion did you receive?
2. What is the level of confidence in the conclusion (low, moderate, high)? 3. Is it possible to make a clinical diagnosis? What are your next tactics?

Task 1 A 32-year-old woman with a history of chronic pyelonephritis, after hypothermia, pain appeared in the lumbar region, and the temperature rose to 37.7°C. Upon examination, the "tapping" symptom is positive. Blood tests: hemoglobin - 135 g/l, leukocytes - 12H109/l, ESR - 17 mm/hour. Urine: specific gravity – 1024, protein – 0.066 g/l, leukocytes – 40-50, erythrocytes – 3-5 in p.z.

Task 2 A 45-year-old man, after drinking alcohol, developed girdling pain in the epigastric region and vomiting. Blood amylase 140 units, urine diastase 512 units.

Task 3 A 39-year-old man was bothered for a long time by nagging pain in various parts of the abdominal cavity and periodic constipation. He was admitted with an unclear clinical picture of dynamic intestinal obstruction. During laparoscopic examination of the abdominal cavity, the intestinal mesentery is significantly thickened with whitish cords, the serous membranes are shiny. Blood tests showed hemoglobin - 102 g/l, leukocytes - 8.1H109/l, ESR - 24 mm/hour. Blood sugar – 5.6 mmol/l. Total bilirubin – 20 μm/l. Urinalysis is within normal limits.

Task 4 A 70-year-old man developed a feeling of fullness in his stomach, frequent vomiting after eating, dull pain in the epigastric region, and general weakness. Within a year I lost 12 kg. In the blood test, hemoglobin – 86 g/l, erythrocytes – 3.3x1012/l, leukocytes – 5.2 g/l, ESR – 15 mm/hour. Blood sugar – 9 mlmol/l. Bilirubin – 17 μm/l. With fibrogastroduodenoscopy, in the pyloric part of the stomach there is a rounded tumor-like formation about 2.5 cm in diameter, covering a significant part of the lumen, the folding of the mucous membrane above it is smoothed.

Task 5 A 36-year-old man who suffered from viral hepatitis B a year ago still has general weakness, decreased appetite, and bitterness in the mouth. During the control study of hepatitis markers: HBS – positive, HBE – negative. Percussion reveals the liver 4 cm below the edge of the costal arch. In blood tests, hemoglobin is 120 g/l, leukocytes are 7.5 × 109/l. ESR – 13 mm/hour. Total bilirubin – 27 μm/l, direct – 10, indirect – 17 μm/l. AST – 1.2, ALT – 1.0. Urine test results are normal.

Task 6 A 30-year-old woman has been experiencing increasing weakness for 6 months, swelling of the feet in the evening, pasty facial tissue in the morning, body temperature 37-37.4°C. During examination, blood pressure was 140/90 mm. rt. Art, pulse – 88 beats. per minute, rhythmic, weak systolic murmur at Botkin's point. The liver protrudes 3 cm from under the edge of the costal arch. In the blood: hemoglobin – 90 g/l, erythrocytes – 3.4×1012/l, leukocytes – 11.3×109/l, ESR – 36 mm/hour. In urine: beat. weight – 1024, protein – 0.86 g/l; erythrocytes – up to 50, leukocytes – 3-5, epithelium – 8-10 per cell. Total bilirubin – 30 μm/l, direct – 7, indirect – 23. AST – 0.9, ALT – 1.1. The electrocardiogram shows moderate diffuse changes in the myocardium. X-ray shows increased vascular pattern in the lungs. Ultrasound shows liver enlargement, no other organ pathology.

Task 7 A 57-year-old man was treated in a psychiatric hospital for schizophrenia with psychotropic drugs. Sent to the surgical department for acute paraproctitis. The abscess was opened and drained. A day later, a sore throat appeared when swallowing, and the temperature increased to 39°C. A concomitant diagnosis was made: catarrhal tonsillitis. In blood tests, hemoglobin – 77 g/l, erythrocytes – 3.2 × 1012/l, leukocytes – 0.7-2 × 109/l (eos. – 0%, p/i – 6%, s/i – 18%, lymph. – 62%, mon. – 14%). ESR – 62 mm/hour. Total blood protein – 60 g/l. Blood urea 3.6 mmol/l. AST – 1.4, ALT – 2.2. In urine protein – 0.066 g/l, Spec. weight - 1004. Cylinders - solid. Erythrocytes and leukocytes – 2-3 in p.z.

Task 8 A 40-year-old woman, after a 3-week delay in menstruation, developed bleeding from the genital tract that lasted 12 days. Curettage of the uterine cavity was performed.

Task 9 A 59-year-old woman, after menopause for 7 years, developed discharge from the genital tract for a month. On examination, the uterus is slightly enlarged. Hysteroscopically, the surface of the endometrium is uneven with polypoid projections. Separate curettage of the uterine cavity and cervical canal was performed.

Block B

List of questions and tasks for intermediate certification (test with assessment):

Questions to check the level of training KNOW:

ABSTRACT TOPICS:

1. Pathology caused by environmental factors and nutrition
2. The importance of the environment in human pathology.
3. Air pollution. Role in human pathology
4. Chemical and medicinal effects.
5. Adverse reactions to medications (predictable and unpredictable). Drug pathology. Iatrogenic drug pathology.
6. Exogenous estrogens and oral contraceptives: possible negative effects.
7. Harmful effects from the use of non-therapeutic agents. Diseases caused by physical factors.
8. Diet-related diseases.
9. Violation of vitamin intake.
10. Diet and systemic diseases. Diet and cancer. Food additives, problems of control over their use.
11. Basic provisions of the doctrine of diagnosis

TASKS TO CHECK THE LEVEL OF TRAINING TO BE ABLE AND PROFESSIONAL:

1. Draw up an autopsy report
2. Justify the pathological epicrisis
3. Make an entry on the medical death certificate in the presence of a combined underlying disease (competing, combined, background)?
4. Indicate the location of the “second disease” from the diagnosis on the medical death certificate.

From the given list of preparations, it is necessary to describe the scheme of the microscopic specimen according to the following points:

SCHEME FOR MICROSCOPIC DESCRIPTION OF THE PREPARATION

1. Name the tissue or organ in the microslide
2. Determine the criteria for the process at the cellular level;
3. Summarize the detected changes in the histological diagnosis in a coherent and consistent manner;
3. Explain the mechanism of development of the process and evaluate its functional significance.

The algorithm for students’ actions should be as follows:

- Viewing a microslide at low magnification of a microscope has the purpose of: a) Examining the entire area of the section by moving it along the steps; b) Determination of the method of staining the preparation;

c) Determination of normal structures of an organ and tissue;

d) Identification of the localization and nature of the main structural changes in the organ and tissue;

e) Preliminary diagnostics of the process based on the summation of the received data

- Viewing the specimen at high magnification of the microscope has the purpose of: a) Detailed viewing of all components of the organ with structural changes;

b) Final diagnosis of the pathological process.

LIST OF MICROPREPARATIONS:

1. Necrosis of the epithelium of the convoluted tubules of the kidney
2. Myocardial infarction
3. Basedova struma of the thyroid gland
4. Fatty liver
5. Gout
6. Diapedetic cerebral hemorrhages
7. Hemorrhagic infiltration of the uterine mucosa
8. Embolic brain abscess
9. Syphilitic gumma of the aorta
10. Giant cell hepatitis
11. Pulmonary tuberculosis
12. Chronic cholecystitis with exacerbation
13. Phlegmonous appendicitis
14. Encephalitis
15. Croupous pneumonia microbial edema with transition of hepatization
16. Croupous pneumonia gray hepatization 1
17. Cardiosclerosis
18. Spindle cell sarcoma
19. Adenocarcinoma of the uterus
20. Cancer metastasis to the lung
21. Ovarian cystic tumor 2
22. Melanoma
23. Non-keratinizing squamous cell carcinoma
24. Squamous cell lung cancer
25. Renal cell carcinoma
26. Metastasis of adenocarcinoma to the liver
27. Squamous cell keratinizing carcinoma
28. Basalioma
29. Melanoma
30. Myocardial infarction
31. Hemorrhagic infarction
32. Rheumatic myocarditis
33. Chronic stomach ulcer
34. Embolic brain abscess
35. Abscess pneumonia due to influenza

4. METHODOLOGICAL MATERIALS DEFINING THE PROCEDURES OF ASSESSMENT OF KNOWLEDGE, SKILLS, COMPETENCES AND (OR) EXPERIENCE OF ACTIVITY CHARACTERISING THE STAGES OF COMPETENCES FORMATION

DESCRIPTION OF INDICATORS AND CRITERIA OF COMPETENCES ASSESSMENT, DESCRIPTION OF ASSESSMENT SCALES

EVALUATION SCALES OF CURRENT CONTROL

Frontal interview (current control)

№	Indicator Name	Mark (in %)
1.	Active participation	0 - 10
2.	Understanding of the basic morpho-functional mechanisms of development of pathological processes	0 - 40
3.	Justified interpretation of the mechanisms, their influence on the structure of the organ, their functional significance on the organism	0 - 30
4.	Key words (competent use of terms, their understanding and meaning)	0 - 10
5.	Logicality and consistency of the answer on the given topic	0 - 10
Activity assessment (current control)		**Sum of points**

Outline (current control)

№	Indicator Name	Mark (in %)
OUTLINE QUALITY		
1	The content of the outline should correspond to the indicated boxes	0 - 30
2	Completeness and quality of disclosure of the topic in the specified columns	0 - 50
3	Independent performance of work, use of recommended and reference literature	0 - 20
Assessment for the completion of the outline (current control)		**Sum of points**

Work with microslides (current control– «Skills and Expertise»)

№	Indicator Name	Mark (in %)
1.	Name the tissue or organ in the microrepair, name the method of coloring	**0 - 20**
2.	Locate pathological process	**0 - 30**
3.	Sketch and denote the characteristic morphology of this pathological process	**0 - 20**
4.	List criteria for microscopic diagnosis of this pathological process	**0 – 20**
5.	Outcomes and Functional value	**0 – 10**
Assessment for work with microslides (current control)		**Sum of points**

Test grading scale (current control)

1. One test task contains 10 closed questions.
2. Ready-made answers are given for the tasks to choose from.
3. Each correct answer is worth – 10 points

4. The overall score is determined as the sum of the points scored.
5. Mark (in %).

ABSTRACT GRADING SCALE

№	Indicator Name	Mark (in %)
FORMAT		**10**
1	Dividing the text into introduction, main part and conclusion	**0-5**
2	Logical and clear transition from one part to another, as well as within parts	**0-5**
CONTENT		**50**
1	Relevance of the research topic;	**0-10**
2	Compliance of the content with the topic;	**0-10**
3	Depth of material development	**0-15**
4	The presence of conclusions corresponding to the topic and content of the main part	**0-15**
PAPERWORK		**25**
1	Title page with heading	**0-5**
3	The text of the abstract is written according to the methodological instructions	**0-10**
4	Correctness and completeness of use of literature	**0-10**
ABSTRACT DEFENSE		**15**
1	Literacy of presentation and terminology of the material	**0-5**
2	The quality of the message and answers to questions when defending an abstract	**0-5**
3	Implementation of regulations	**0-5**
Total points		**Sum of points**

Situational task scale (terminal control)

№	Indicator Name	Mark (in %)
1.	Make a pathological diagnosis	0 - 10
2.	Name the clinical and anatomical form of the process	0 - 10
3.	Indicate the flow of the process	0 - 10
4.	Assess the functional significance of this process for the organism as a whole	0 - 10
5.	List complications and causes of death	0 - 10
Total points		**Sum of points**

Note: the midterm control contains a ticket with two situational tasks, each worth 50%

5. METHODOLOGICAL INSTRUCTIONS FOR STUDENTS ON MASTERING DISCIPLINE/PRACTICE AND COMPLETING CONTROL TASKS

MODULAR DISCIPLINE CONTROL INCLUDES:

1. Current control: mastering educational material in classroom classes (lectures, practical sessions, including attendance and activity) and completing mandatory tasks for independent work
2. Midterm control: checking the completeness of knowledge and skills on the material of the module as a whole. Completion of modular control tasks is carried out in writing and is a mandatory component of modular control.
3. Intermediate control - completed documented part of the academic discipline (6th semester - exam)

BASIC REQUIREMENTS FOR CURRENT CONTROL.

To understand the material and assimilate it well, the following sequence of actions is recommended:
1. After listening to the lecture and finishing the classes, in preparation for the next day's classes, you must first review and think about the text of the lecture.
2. During the week, choose a time to work with the recommended literature.
3. In preparation for the next day's practical classes, you must first read the basic concepts and approaches to the homework topic. When completing a task, you must first understand what is required, what theoretical material needs to be used, and outline a solution plan.
4. Control over students' assimilation of the discipline's curriculum material is carried out systematically by the department's teacher and is reflected in the teacher's journal in points. A student who receives an unsatisfactory grade on the current material is required to prepare this section and respond to the teacher on it during an individual interview. In case of a frontal survey, an unsatisfactory assessment must be processed within a month from the date of its receipt.
5. Making up for missed classes Making up for lectures: - each lecture missed by a student is compulsory - the student must provide a lecture note and an abstract of 6-10 pages of handwritten text on the topic of the missed lecture - answer additional questions on the missed topic Working out practical classes: - each lesson missed by a student is compulsory. Workouts are carried out according to the department's schedule, agreed with the dean's office. - missed classes must be made up within 10 days from the date of absence; no more than one lesson per day is made up. - a student who has not completed his pass within the established time frame is allowed to attend regular classes only with permission from the dean or his deputy in writing. It is not permitted to exclude students who are poorly prepared for these classes from the next practical lesson. - for students who missed practical classes due to a long-term illness, work should be carried out after permission from the dean's office according to an individual schedule agreed with the department. - In exceptional cases (participation in interuniversity conferences, competitions, olympiads, duty, etc.), the dean and his deputy, in agreement with the department, may exempt students from making up some missed classes.

EXAMPLE OF SOLUTION TO A SITUATIONAL PROBLEM:

At the autopsy of a patient who died of chronic renal failure, changes in the heart were discovered: the leaves of the cardiac membrane are dull, the epicardium has

gray overlays in the form of easily removable films. The epicardium is congested, with an abundance of pinpoint hemorrhages.
1) Diagnose the pathological process in the serosa of the heart
2) Give a figurative name for the heart.
3) Specify the type of inflammation
4) What auscultatory sign is characteristic of this lesion?
5) Indicate options for a favorable outcome of the process.
Answer:
1. Fibrinous pericarditis
2. "Hairy Heart"
3. Exudative inflammation
4. Pericardial friction rub

METHODOLOGICAL RECOMMENDATIONS FOR INDEPENDENT EXTRACURRICULAR WORK OF STUDENTS IN STUDYING THE THEORETICAL FOUNDATIONS OF THE DISCIPLINE PATHOLOGICAL ANATOMY

The study of the theoretical part of the disciplines is intended not only to deepen and consolidate the knowledge acquired in classroom classes, but also to contribute to the development of students' creative skills, initiative and organize their time. Independent work when studying disciplines includes: - students reading recommended literature and mastering the theoretical material of the discipline; - familiarity with Internet sources; - preparation for various forms of control (tests, situational tasks); - preparation and writing of reports; - preparing answers to questions on discipline topics in the sequence in which they are presented. It is best for students to plan the time needed to study disciplines throughout the semester, while providing for regular repetition of the material. The material outlined in lectures must be regularly reviewed and supplemented with information from other sources of literature, presented not only in the discipline program, but also in periodicals. When studying a discipline, it is necessary to read the recommended literature for each topic and draw up a brief summary of the main provisions, terms, information that requires memorization and is fundamental in this topic for mastering subsequent topics of the course. To expand knowledge in the discipline, it is recommended to use Internet resources; conduct searches in various systems and use materials from sites recommended by the teacher. When preparing for tests and solving situational problems, you must read the relevant pages of the main textbook. It is also advisable to read additional literature. When performing independent work on writing a report, the student must: read theoretical material in recommended literature, periodicals, and on Internet sites; creatively process the studied material and present it for reporting in the form of a report, illustrating it with diagrams, diagrams, photographs and drawings. The texts of the report must be presented in a clear, simple and clear language.

METHODOLOGICAL RECOMMENDATIONS FOR CREATING PRESENTATIONS: - this is a type of independent work by students to create visual

information aids made using the multimedia computer program PowerPoint. This type of work requires coordination of the student's skills in collecting, systematizing, processing information, and formatting it in the form of a collection of materials that briefly reflect the main issues of the topic being studied, in electronic form. That is, the creation of presentation materials expands the methods and means of processing and presenting educational information, and develops students' computer skills. Presentations are prepared by the student in the form of slides using Microsoft PowerPoint. The role of the student: • study the materials of the topic, highlighting the main and secondary; • establish a logical connection between the elements of the topic; • present the characteristics of the elements in a brief form; • select reference signals to emphasize the main information and display them in the structure of the work; • complete the work and submit it by the deadline. Evaluation criteria: • relevance of the content to the topic; • correct structure of information; • the presence of a logical connection of the information presented; • aesthetic design, its compliance with the requirements; • work is submitted on time.

METHODOLOGICAL RECOMMENDATIONS FOR COMPLETING ABSTRACTS: The abstract provides for an in-depth study of the discipline and promotes the development of skills for independent work with literary sources. An abstract is a brief written summary of the content of a scientific work on a given topic. This is an independent research work where the student reveals the essence of the problem under study with elements of analysis on the topic of the essay. Presents various points of view, as well as his own views on the problems of the topic of the essay. The content of the abstract should be logical, the presentation of the material should be of a problem-thematic nature.

REQUIREMENTS FOR THE ABSTRACT: The volume of the abstract can vary between 15-20 printed pages. Main sections: table of contents (outline), introduction, main content, conclusion, bibliography. The text of the abstract must contain the following sections: - title page indicating: the name of the university, department, topic of the abstract, full name of the author and full name of the teacher. - introduction, relevance of the topic. - main section. - conclusion (analysis of literature search results); conclusions. - the list of literary sources must have at least 10 bibliographic titles, including network resources. The text part of the abstract is drawn up on a sheet of the following format: - indentation at the top - 2 cm; left indent – 3 cm; indentation on the right – 1.5 cm; bottom indent – 2.5 cm; - text font: Times New Roman, font height – 14, space – 1.5; - page numbering is at the bottom of the sheet. There is no number on the first page. The abstract must be completed competently in compliance with the culture of presentation. There must be references to the literature used, including periodical literature for the last 5 years.

CRITERIA FOR EVALUATING THE ABSTRACT: - relevance of the research topic; - correspondence of the content to the topic; - depth of material elaboration; - correctness and completeness of development of the questions posed; - the significance of the findings for further practical activities; - correctness and

completeness of the use of literature; - compliance of the abstract design with the standard; - the quality of the message and answers to questions when defending the abstract. BASIC REQUIREMENTS FOR FOREIGN CONTROL:
The boundary control contains a task in the form of two situational tasks. Methodological recommendations for solving situational problems:
1. Read the problem statement carefully
2. Pay attention to the detected pathology - descriptive signs of specific changes in organs
3. Carefully read the questions for this task
4. Think about, decide and write an answer to all questions