

SYLLABUS

1. General information on the course

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| Full course name | Sectional Course |
| Full official name of a higher education institution | Sumy State University |
| Full name of a structural unit | Academic and Research Medical Institute. Кафедра патологічної анатомії |
| Author(s) | Hyriavenko Nataliia Ivanivna |
| Cycle/higher education level | The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle |
| Semester | 18 weeks across 9 semester, 18 weeks across 10 semester |
| Workload | 10 ECTS, 300 hours. For full-time course 72 hours are working hours with the lecturer (72 hours of seminars), 228 hours of the individual study. |
| Language(s) | English |

2. Place in the study programme

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| Relation to curriculum | Elective course available for study programme "Medicine" |
| Prerequisites | Clinical Anatomy and Surgery, Pathophysiology, Pathomorphology, Clinical disciplines |
| Additional requirements | There are no specific requirements |
| Restrictions | There are no specific restrictions |

3. Aims of the course

Study of the practical aspect of the work of a pathologist, organizational issues and structure of pathological service.

4. Contents

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| Topic 1 Development of pathological anatomy in Ukraine. The structure, tasks and functions of the pathological service of Ukraine and its place in the health care system. |
| Topic 2 Organization of the work of the pathological institution. Organization of work of pathological institution (bureau, center, laboratory, department). Recommended staffing standards for medical staff of pathological institutions and their branches. |

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| <p>Topic 3 Basic requirements for premises and labor protection, safety at work in the pathological institutions (subdivisions).</p> <p>Basic requirements for premises and labor protection, safety at work in the pathological institutions (subdivisions). Requirements for the territory, planning and equipment of the pathological institutions, bureaus, departments.</p> |
| <p>Topic 4 Requirements for work in the pathological institutions.</p> <p>Requirements for work in the pathological institutions (general requirements, general rules of conduct in the section hall, cutting of operative-biopsy and section materials, work in the pathohistological laboratories).</p> |
| <p>Topic 5 Exemplary report card of material and technical equipment of the pathological institutions (subdivisions).</p> <p>Exemplary report card of material and technical equipment of the pathological institutions (subdivisions)(devices and medical instruments, medical furniture and equipment, ware, sets of reagents and other items).</p> |
| <p>Topic 6 Autopsy of the deceased.</p> <p>Procedure and methods of autopsy in the stationary treatment-and-prophylactic institutions</p> |
| <p>Topic 7 Autopsy logging.</p> <p>Autopsy logging. Autopsy card of the pathological examination (parts, order, filling).</p> |
| <p>Topic 8 Pathological diagnosis.</p> <p>Structure and construction of pathological diagnosis (sections, variants of the main disease: competing, combined, background) .Categories of differences between clinical and pathological diagnoses.</p> |
| <p>Topic 9 Clinical and pathological epicrisis.</p> <p>Clinical and pathological epicrisis. The main issues to be reflected in the epicrisis.</p> |
| <p>Topic 10 Medical death certificate.</p> <p>Medical certificate of death (order of filling, main points). International classification of diseases.</p> |
| <p>Topic 11 Autopsy of the deceased from diseases of therapeutic profile.</p> <p>Regulations on the pathological examination of the deceased in case of death from the disease of therapeutic profile.</p> |
| <p>Topic 12 Features of the pathological examination in case of death from the disease of infectious pathology.</p> <p>Features of the pathological examination in case of death from the disease infectious pathology. Anti-plague suit. Selection of material for laboratory research in death from the particularly dangerous infections.</p> |
| <p>Topic 13 Autopsy of the deceased from the surgical or obstetric and gynecological pathology.</p> <p>Features and methods of autopsy and registration of pathological documentation in cases of death associated with surgical and obstetric and gynecological pathology and resuscitation manipulations. Rules and requirements for parturients' autopsy.</p> |

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| <p>Topic 14 Autopsy of a deceased child. Autopsy of a deceased child.Features of clinical and anatomical analysis and instructions for autopsies in pediatric practice.</p> |
| <p>Topic 15 Medical Advisory Commission. The role of pathological service in monitoring the quality of medical preventive work.</p> |
| <p>Topic 16 Clinical and pathological conference. The main tasks of the clinical and pathological conference. The order of organization and conduct clinical and pathological conferences in treatment and prevention facilities.</p> |
| <p>Topic 17 Methods of biopsy examination of the material. The main provisions of biopsy in hospitals.Basic rules of preparation surgical and biopsy materials for histological and cytological examinations. Rating results of biopsy examination in various pathological processes.</p> |
| <p>Topic 18 Final control class: differential credit. Final control class: differential credit.</p> |

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

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| LO1 | Develop and consolidate theoretical knowledge by solving situational problems on the holding of pathological services, autopsies, formation of pathological diagnosis and filling of death certificates. |
| LO2 | Participate in autopsies, adhering to the relevant ethical and legal norms, to form pathological diagnoses and prescribe medical death certificates. |
| LO3 | Carry out a comparative characterization of clinical and pathological diagnoses. Know the categories of discrepancies in diagnoses. |
| LO4 | Master the basic provisions for the organization of medical and control commissions (MCC) and holding pathological conferences. |
| LO5 | Get acquainted with the research of surgical and biopsy material in pathological departments. Be able to solve complex problems and problems that arise in professional activities. Be able to apply the acquired knowledge in practical situations in the differential diagnosis of diseases. |

7. Soft Skills

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| SS1 | Ability to abstract thinking, analysis and synthesis. |
| SS2 | Ability to learn and master modern knowledge. |
| SS3 | Ability to apply knowledge in practical situations. |
| SS4 | Knowledge and understanding of the subject area and understanding of professional activity. |
| SS5 | Ability to search, process and analyze information from various sources. |

8. Teaching and learning activities

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| Topic 1. Development of pathological anatomy in Ukraine. |
| pr.tr.1 "Development of Pathology in Ukraine." (full-time course) The structure, tasks and functions of the pathological service of Ukraine and its place in the health care system. The study of this topic involves theoretical work in the classroom, discussion on functions of pathological service. Acquaintance with normative documents pathological bureaus (centers) and pathological departments. |
| Topic 2. Organization of the work of the pathological institution. |
| pr.tr.2 "Organization of the pathological institution." (full-time course) Organization of work of pathological institution (bureau, center, laboratory, department). Recommended staffing standards for medical staff of pathological institutions and subdivisions. The study of this topic involves theoretical work in the classroom. In addition, in case of no quarantine restrictions this course involves work in section hall (acquaintance with the practical activities of the pathologist at the present stage and basic methods of postmortem and lifelong diagnosis of diseases (according to the agreement on co-operation between the medical institution and the university). |
| Topic 3. Basic requirements for premises and labor protection, safety at work in the pathological institutions (subdivisions). |
| pr.tr.3 "Basic requirements for premises and labor protection and safety at work in pathological institutions (subdivisions)." (full-time course) Basic requirements for premises and labor protection and safety at work in pathological institutions (subdivisions). Requirements for the territory, planning and equipment of pathological institutions, bureaus, departments. The course on this topic involves theoretical work in the classroom (acquaintance with the requirements and basic regulations and documents). In case of no quarantine restrictions - work in pathological department: acquaintance with the premises and property of the pathological institution (according to the agreement on cooperation between the medical institution and the university). |
| Topic 4. Requirements for work in the pathological institutions. |
| pr.tr.4 "Requirements for work in pathological institutions." (full-time course) Requirements for work in pathological institutions (general requirements, general rules of conduct in the section hall, cutting of operative-biopsy and section materials, work in the pathohistological laboratory). The course on this topic involves theoretical work in the classroom, in case of no quarantine restrictions - attending the clipping postoperative material and pathohistological laboratory (according to the agreement on cooperation between the medical institution or university). |
| Topic 5. Exemplary report card of material and technical equipment of the pathological institutions (subdivisions). |

pr.tr.5 "Exemplary report card of material and technical equipment of pathological institutions (subdivisions)." (full-time course)

Exemplary report card of material and technical equipment of pathological anatomical institutions (subdivisions)(devices, medical instruments, medical furniture and equipment, ware, sets of reagentsand other subjects). The course on this topic involves theoretical work in the classroom, application of virtual simulation (watching movies on the topic), followed by discussion. In case of no quarantine restrictions attending the histopathology department and acquaintance with material and technical equipment (according to the agreement on cooperation between the medical institution and university).

Topic 6. Autopsy of the deceased.

pr.tr.6 "Autopsy of the deceased." (full-time course)

Procedure and methods of autopsy in stationary medical institutions. The course on this topic involves theoretical work in the classroom, application virtual simulation (watching movies on the topic), followed by discussion. In case of no quarantine restrictions work in the section hall (according to the agreement on cooperation between the medical institution and university).

Topic 7. Autopsy logging.

pr.tr.7 "Autopsy logging." (full-time course)

Report card of pathological examination (parts, filling procedure). The course on this topic involves theoretical work in the classroom. In case of no quarantine restrictions - work in the section hall with the subsequent filling of the autopsy protocol (according to the agreement on cooperation between the medical institution and the university).

Topic 8. Pathological diagnosis.

pr.tr.8 "Pathological diagnosis." (full-time course)

Structure and construction of pathological diagnosis (sections, variants of the main disease:competing, combined, background). Categories of differences between clinical and pathological diagnoses. The course on this topic involves theoretical work in the classroom with discussion of situational tasks. In case of no quarantine restrictions, work in the section hall with the subsequent formulation of the pathological diagnosis (according to the cooperation agreement between the medical institution and the university).

Topic 9. Clinical and pathological epicrisis.

pr.tr.9 "Clinical and pathological epicrisis." (full-time course)

Clinical and pathological epicrisis.The main issues to be reflected in epicrisis. The course on this topic involves theoretical work in the classroom with discussion of situational tasks. In case of no quarantine restrictions - work in the section hall with the following filling a clinical and pathological epicrisis (according to the cooperation agreement between the medical institution and university).

Topic 10. Medical death certificate.

pr.tr.10 "Medical death certificate." (full-time course)

Medical death certificate (order of completion, main points). International classification of diseases. The course on this topic involves theoretical work in the classroom with discussion of situational tasks. In case of no quarantine restrictions - work in the section hall with subsequent filling of a medical death certificate (according to the cooperation agreement between the medical institution and university).

Topic 11. Autopsy of the deceased from diseases of therapeutic profile.

pr.tr.11 "Autopsy of the deceased from diseases of therapeutic profile." (full-time course)

Regulations on pathological examination of the deceased in case of death from disease of therapeutic profile. The course on this topic involves theoretical work in the classroom, application of virtual simulation (watching movies on the topic), followed by discussion and formulation of the diagnosis and medical death certificate. Solving situational tasks. In case of no quarantine restrictions - work in the section hall (according to the agreement on cooperation between the medical institution and the university).

Topic 12. Features of the pathological examination in case of death from the disease of infectious pathology.

pr.tr.12 "Features of pathological examination in case of death from disease of infectious pathology." (full-time course)

Features of pathological examination in case of death from disease of infectious pathology. Anti-plague suit. Selection of material for laboratory research in case of death from particularly dangerous infections. The course on this topic involves theoretical work in the classroom, the use of virtual simulation (watching movies on the topic), followed by discussion and formulation of the diagnosis and medical certificate of death. Solving situational problems.

Topic 13. Autopsy of the deceased from the surgical or obstetric and gynecological pathology.

pr.tr.13 "Autopsy of the deceased from the surgical or obstetric and gynecological pathology." (full-time course)

Features and methods of autopsy and registration of pathological documentation in cases of death associated with the surgical and obstetric and gynecological pathology and surgical and resuscitation manipulations. Rules and requirements for autopsy. The course on this topic involves theoretical work in the classroom, application of virtual simulation (watching movies on the topic), followed by discussion and representing of the diagnosis and medical certificate of death. Solving situational problems. In case of no quarantine restrictions - work in the section hall (according to the agreement on cooperation between the medical institution and university).

Topic 14. Autopsy of a deceased child.

pr.tr.14 "Autopsy of a dead child." (full-time course)

Autopsy of a deceased child. Features of clinical and anatomical analysis and organization of autopsies in pediatric practice. The course on this topic involves theoretical work in the classroom, application of virtual simulation (watching movies on the topic), followed by discussion and formulation of the diagnosis and medical certificate of death. Solving situational tasks.

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| Topic 15. Medical Advisory Commission. |
| pr.tr.15 "Medical Advisory Commission." (full-time course) The role of pathological service in quality control of treatment and prevention work. The course on this topic involves theoretical work in the classroom, role-playing games (conducting a medical advisory commission and discussing most interesting cases). |
| Topic 16. Clinical and pathological conference. |
| pr.tr.16 "Clinical and pathological conference." (full-time course) The main tasks of the clinical and pathological conference. The procedure of holding and conducting clinical and pathological conferences in treatment-and-prophylactic institutions. Topic involves theoretical work in the classroom, role-playing games (conducting clinical and pathological conference and discussion of the most interesting cases). |
| Topic 17. Methods of biopsy examination of the material. |
| pr.tr.17 "Methods of biopsy examination of the material." (full-time course) The main provisions of biopsy in hospitals. Basic rules of preparation surgical and biopsy materials for histological and cytological research. Rating results of biopsy research in various pathological processes. The course on this topic involves theoretical work in the classroom, in case of no quarantine restrictions attend the excerpt of biopsy material (according to the agreement on cooperation between the medical institution and university). |
| Topic 18. Final control class: differential credit. |
| pr.tr.18 "Final control class: differential credit." (full-time course) Final control class: differential credit. |

9. Teaching methods

9.1 Teaching methods

Course involves learning through:

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| TM1 | Case-based learning (CBL) |
| TM2 | Team-based learning (TBL) |
| TM3 | Research-based learning (RBL) |
| TM4 | Case-study |
| TM5 | Brain storm |
| TM6 | Demonstration |
| TM7 | Electronic learning |

Teaching of discipline is conducted using modern teaching methods (CBL, TBL, RBL) that promote the development of professional abilities, creative and scientific activities and aimed at training practice-oriented professionals.

The discipline provides students such kinds of soft skills as GC 1. Ability to abstract thinking, analysis, and synthesis. GC 2. Ability to learn, master modern knowledge and apply the knowledge

in practice. GC 3. Knowledge and understanding of the subject area and professional activity comprehension.

9.2 Learning activities

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| LA1 | E-learning in systems (Zoom, MIX.sumdu.edu.ua) |
| LA2 | Self-training |
| LA3 | Preparation for practical classes |
| LA4 | Discussion of cases |
| LA5 | Solving situational tasks |
| LA6 | Interpretation of macro- and microscopic changes of postoperative and biopsy material |
| LA7 | Practice of practical skills in the section hall |
| LA8 | Participation in the discussion (in groups and pairs) |
| LA9 | Work with textbooks and relevant information sources |
| LA10 | Watching movies on the topic |
| LA11 | Individual research project (student research work, article, thesis, etc.) |
| LA12 | Preparation for certification |

10. Methods and criteria for assessment

10.1. Assessment criteria

| Definition | National scale | Rating scale |
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| Outstanding performance without errors | 5 (Excellent) | $170 \leq RD \leq 200$ |
| Above the average standard but with minor errors | 4 (Good) | $140 \leq RD < 169$ |
| Fair but with significant shortcomings | 3 (Satisfactory) | $120 \leq RD < 139$ |
| Fail – some more work required before the credit can be awarded | 2 (Fail) | $0 \leq RD < 119$ |

10.2 Formative assessment

| | Description | Deadline, weeks | Feedback |
|------------------------|--|---|--|
| FA1 Peer assessment | Partnership interaction aimed at improving the results of educational activities by comparing one's own current level of success with previous indicators. Provides an opportunity to analyze one's own educational activities | During the entire period of studying the discipline | Adjustment of approaches to learning together with students, taking into account the results of the assessment |

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| <p>FA2 Computer testing</p> | <p>A method of effective verification of the level of assimilation of knowledge, abilities and skills from each subject of an educational discipline. Testing allows you to check the assimilation of educational material from each subject.</p> | <p>During the entire period of studying the discipline</p> | <p>The student must provide 60% of the correct answers, which is an admission to the practical part</p> |
| <p>FA3 Interview and verbal comments of the lecturer according to its results</p> | <p>It provides an opportunity to identify the state of educational experience acquired by students in accordance with the set goals, to find out the prerequisites of the state of formation of the obtained results, the causes of difficulties, to adjust the learning process, to track the dynamics of the formation of learning results and to forecast their development.</p> | <p>During the entire period of studying the discipline</p> | <p>According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants</p> |
| <p>FA4 Solving situational tasks (formulation of pathological diagnosis and medical death certificate)</p> | <p>Checking the level of knowledge acquisition, the ability to interpret changes in internal organs in histological preparations from each topic of the educational discipline</p> | <p>During the entire period of studying the discipline</p> | <p>According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants</p> |

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| FA5 Defence of an individual research project (speech at the conference) | The guidelines reveal the methods of pedagogical control over the professional activities of applicants. Efficiency is determined by compliance with all stages of practical tasks. The effectiveness of the formation of the necessary practical skills and abilities depends on the level of formation of practical competence. | During the entire period of studying the discipline | Teacher's oral comments. The student is given additional incentive points (from 5 to 10), depending on the type of research project |
| FA6 Teacher's admonishments during performing practical tasks. | Practicing practical skills in the classroom. | During the entire period of study. | At the last lesson, the student must successfully perform practical skills |

10.3 Summative assessment

| | Description | Deadline, weeks | Feedback |
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| SA1 Survey on the topic of practical class, solving clinical cases and situational tasks with formulation of pathological diagnosis and medical death certificate | It includes an oral survey, interpretation of macro- and microscopic changes in internal organs, solving clinical individual and group cases, current testing. Students who are involved in research activities have the opportunity to present the results of their own research at conferences, student research competitions, etc. (incentive activities, additional points). | During the entire period of studying the discipline | It is held at every lesson. The performance result affects the comprehensive assessment for the practical session |
| SA2 Testing | A method of effective verification of the level of assimilation of knowledge, abilities and skills in an educational discipline. Testing allows you to check the learning results during the cycle and determine the level of knowledge at the end of the discipline | Final computer test at the end of the course (20 points) | It is an admission to the preparation of the credit |
| SA3 Final control: differential credit | Compilation of differentiated assessment. Applicants who have successfully mastered the material from the discipline, passed practical skills and final computer testing are allowed to take the test. | According to the schedule | the miner can get 80 points for credit. The minimum number of points a student must receive is 48 points |

Form of assessment:

| | Points | Minimum points | Можливість перескладання з метою підвищення оцінки |
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| 9 semester | 200 scores | | |
| SA1. Survey on the topic of practical class, solving clinical cases and situational tasks with formulation of pathological diagnosis and medical death certificate | 80 | | |
| | 80 | Не передбачено | No |
| SA2. Testing | 40 | | |
| | 40 | Не передбачено | No |
| SA3. Final control: differential credit | 80 | | |
| Final control includes testing of theoretical knowledges - 30 points, solving clinical cases with formulation of pathological diagnosis – 20 points, medical death certificate - 10 points, computer test – 10 points, formulation of histological conclusion of biopsy material – 10 points | 80 | Не передбачено | No |
| 10 semester | 200 scores | | |
| SA1. Survey on the topic of practical class, solving clinical cases and situational tasks with formulation of pathological diagnosis and medical death certificate | 80 | | |
| | 80 | Не передбачено | No |
| SA2. Testing | 40 | | |
| | 40 | Не передбачено | No |
| SA3. Final control: differential credit | 80 | | |
| Final control includes testing of theoretical knowledges - 30 points, solving clinical cases with formulation of pathological diagnosis – 20 points, medical death certificate - 10 points, computer test – 10 points, formulation of histological conclusion of biopsy material – 10 points | 80 | Не передбачено | No |

During the course, a student is awarded a maximum of 5 points for each practical class (the grade is set in the traditional 4-point grading system). The maximum number of points for the current educational activities of the student – 120 points (survey on the topic of the practical class, solving clinical cases and situational tasks – 80 points, testing – 40 points). A student is admitted to the module if he has fulfilled the conditions of the curriculum and if for the current educational activity he scored at least 72 points. The final module control is carried out according to the schedule at the last class. The final module control includes testing of theoretical knowledge - 30 points, solving

clinical cases with the formulation of pathological diagnosis – 20 points, medical death certificate - 10 points, computer test – 10 points, formulation of the histological conclusion of biopsy material – 10 points. The credit is credited to the student if he scored at least 48 points out of 80. Additional points are added to the grade for the discipline for the implementation of an individual research project (defense of an individual research project – 12 points, speech at the conference – 5 points, poster report at the conference – 4 points, thesis work – 3 points). The total score in the discipline may not exceed 200 points.

11. Learning resources

11.1 Material and technical support

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| MTS1 | Information and communication systems |
| MTS2 | Library funds |
| MTS3 | Medical facilities / premises and equipment (section halls of Sumy Regional Hospital, premises for in vivo examination of postoperative material, macropreparations of samples of internal organs, histological preparations, etc. pathohistological laboratory) |
| MTS4 | Computers, computer systems and networks |
| MTS5 | Laboratory equipment (microscopes, the device for the automated painting of samples, microtomes, medical equipment, etc.) |
| MTS6 | Multimedia, video and audio reproduction, projection equipment (video cameras, projectors, screens, smart boards, etc.) |
| MTS7 | Software (to support distance learning: training materials "Lectur.ED", training platform "MIX") |
| MTS8 | Sumy Regional Hospital |

11.2 Information and methodical support

| Essential Reading | |
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| 1 | Fundamentals of pathology according to Robinson: translation of the 10th English edition: in 2 vols. Vol. 1 / Viney Kumar, Abul K. Abbas, John K. Aster .; Edited by prof. I. Sorokin, S. Gichko, I. Davydenko. - K.: BCB «Medicine», 2019. - XII, 420 p. |
| 2 | Fundamentals of pathology according to Robinson: translation of the 10th English edition: in 2 vols. Vol. 2 / Viney Kumar, Abul K. Abbas, John K. Aster .; Edited by prof. I. Sorokin, S. Gichko, I. Davydenko. - K.: BCB «Medicine», 2020. - XII, 532 p. |
| 3 | Device for histological and histochemical staining of samples. Patent 144872 U Ukraine, IPC G01N 1/30 (2006.01) G01N 1/31 (2006.01). [Text] / YV Kuzenko, AM Romaniuk, MS Skidanenko, and others; applicant and patent owner of SSU. - № u202003 |
| Supplemental Reading | |

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| 1 | Pathomorphology and histology: atlas / ed .: D.D. Zerbino, M.M. Bagria, Y.Y. Bodnara, V.A. Dibrovi. - Vinnytsia: Nova Kniga, 2016. - 800 p. |
| 2 | Bodnar Ya., Romaniuk A., Voloshyn V., Gargin V. Essentials of pathology. / Ya. Bodnar, A. Romaniuk, V. Voloshyn, V. Gargin. – Kharkiv: Planeta-Print, 2020. – 216 p. |