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**Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
RUDN University**

Institute of Medicine

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Pathological Anatomy, Clinical Pathological Anatomy

course title

Recommended by the Didactic Council for the Education Field of:

31.05.01 General Medicine

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

General Medicine

higher education programme profile/specialisation title

2022-2023

1. COURSE GOAL(s)

The goal of the course “Pathological anatomy, clinical pathological anatomy” is to equip students with the knowledge about the structural foundations of diseases, to study the most typical and characteristic changes at the macro- and microscopic levels of the diseases, to comprehend the theoretical foundations of medicine, a more in-depth study of the clinic and the use of the acquired knowledge in the work of a general practitioner.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) “Pathological anatomy, clinical pathological anatomy” is aimed at the development of the following competences /competences in part: GPC-5.

Table 2.1. List of competences that students acquire through the course study

| Competence code | Competence descriptor | Competence formation indicators (within this course) |
|-----------------|---|---|
| GPC-5 | Able to assess morphofunctional, physiological conditions and pathological processes in the human body for solving professional tasks | GPC-5.2. Is able to evaluate the results of clinical, laboratory and functional diagnostics in solving professional problems. |
| | | GPC-5.3. Can determine morphofunctional, physiological states and pathological processes of the human body. |

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course refers to the core/variable/elective* component of (B1) block of the higher educational programme curriculum.

* - Underline whatever applicable.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course study.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

| Competence code | Competence descriptor | Previous courses/modules* | Subsequent courses/modules* |
|-----------------|---|--|--|
| GPC-5 | Able to assess morphofunctional, physiological conditions and pathological processes in the human body for solving professional tasks | Anatomy; Biology; Topographic anatomy and operative surgery; Histology, embryology, and cytology. Normal Physiology; Biochemistry; Microbiology, Virology; Pathophysiology, Clinical | Dermatovenereology; Neurology, medical genetics, and neurosurgery; Faculty Therapy; Faculty Surgery; Ophthalmology; Occupational diseases; Psychiatry, medical psychology; Hospital therapy; Hospital surgery, children's surgery; |

| Competence code | Competence descriptor | Previous courses/modules* | Subsequent courses/modules* |
|-----------------|-----------------------|---|---|
| | | Pathophysiology; General Surgery; Methods of cell biology and histology; Medical enzymology; Fundamentals of integrative medicine; Molecular genetics in practical biology and medicine; Fundamentals of psychophysiology | Anesthesiology, resuscitation, intensive care; Oncology, radiation therapy; Maxillofacial surgery; Forensic medicine; Obstetrics and Gynecology. Practice Assistant physician of a therapeutic profile: assistant physician of a general practitioner State final certification Preparation for and passing the state exam; State exam (computer testing); State exam (interdisciplinary interview) |

* To be filled in regarding the higher education programme correspondence training mode.

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "Pathological Anatomy, Clinical pathological anatomy" is 8 credits (252 academic hours).

Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)*

| Type of academic activities | Total academic hours | Semesters/training modules | | |
|---|----------------------|----------------------------|------------|------------|
| | | 5 | 6 | |
| <i>Contact academic hours</i> | 175 | 90 | 85 | |
| <i>Including:</i> | | | | |
| Lectures (LC) | 35 | 18 | 17 | |
| Lab work (LW) | 140 | 72 | 68 | |
| Seminars (workshops/tutorials) (S) | - | - | - | |
| <i>Self-studies</i> | 32 | 27 | 5 | |
| <i>Evaluation and assessment (exam/passing/failing grade)</i> | 45 | 27 | 18 | |
| Course workload | Academic hours | 252 | 144 | 144 |
| | Credits | 8 | 4 | 4 |

* To be filled in regarding the higher education programme correspondence training mode.

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

| Course module title | Course module contents (topics) | Academic activities types |
|--|--|---------------------------|
| Module 1 Pathanatomy of cells and tissues. | Topic 1.1. Reversible cell damage. Pathology of protein metabolism. | Lc, Lw |
| | Topic 1.2. Pathology of fat and mineral metabolism. | Lc, Lw |
| | Topic 1.3. Violation of pigment metabolism. | Lc, Lw |
| | Topic 1.4. Irreversible cell damage. Necrosis. Apoptosis. | Lc, Lw |
| Module 2 Pathanatomy of blood and lymph circulation disorders | Topic 2.1. Circulatory disorders. | Lc, Lw |
| | Topic 2.2. Thrombosis. Embolism. | Lc, Lw |
| Module 3 Pathanatomy of inflammation, healing and tissue repair. | Topic 3.1. Exudative inflammation. | Lc, Lw |
| | Topic 3.2. Productive inflammation. | Lc, Lw |
| Module 4 Pathanatomy of the immune system. | Topic 4.1. Immune damage to organs. | Lc, Lw |
| Module 5 Pathanatomy of compensatory and adaptive processes. | Topic 5.1. Compensatory and adaptive processes (atrophy, hypertrophy, regeneration, wound healing, metaplasia). | Lc, Lw |
| Module 6 Pathanatomy of tumors. | Topic 6.1. Tumors from the epithelium. | Lc, Lw |
| | Topic 6.2. Particular forms of cancer. | Lc, Lw |
| | Topic 6.3. Tumors of mesenchymal and mesodermal origin. | Lc, Lw |
| Module 7 Pathanatomy of blood and bone marrow cells. | Topic 7.1. Hemoblastosis. | Lc, Lw |
| | Topic 7.2. Anemia. | Lc, Lw |
| Module 8 Pathanatomy of diseases of the cardiovascular system. | Topic 8.1. Atherosclerosis. | Lc, Lw |
| | Topic 8.2. Coronary heart disease. | Lc, Lw |
| | Topic 8.3. Hypertension. | Lc, Lw |
| | Topic 8.4. Rheumatic diseases. Heart defects. | Lc, Lw |
| Module 9 Pathanatomy of diseases of the urinary system. | Topic 9.1. Kidney diseases. | Lc, Lw |
| | Topic 9.2. Diseases of the urinary tract. | Lc, Lw |
| Module 10 Pathanatomy of diseases of the | Topic 10.1. Liver diseases. | Lc, Lw |
| | Topic 10.2. Diseases of the gallbladder. | Lc, Lw |
| | Topic 10.3. Stomach diseases. | Lc, Lw |

| Course module title | Course module contents (topics) | Academic activities types |
|---|--|---------------------------|
| digestive system. | Topic 10.4. Intestinal diseases. | Lc, Lw |
| Module 11 Pathanatomy of infectious diseases of bacterial and mycotic nature. | Topic 11.1. Introduction to infections. Typhus. | Lc, Lw |
| | Topic 11.2. Diphtheria. Scarlet fever. Bacillary dysentery. | Lc, Lw |
| | Topic 11.3. Bronchitis. Pneumonia. | Lc, Lw |
| | Topic 11.4. Tuberculosis. | Lc, Lw |
| | Topic 11.5. Syphilis. | Lc, Lw |
| | Topic 11.6. Leprosy. | Lc, Lw |
| | Topic 11.7. Mycoses. | Lc, Lw |
| Module 12 Pathanatomy of infectious diseases of viral nature. | Topic 12.1. Flu. | Lc, Lw |
| | Topic 12.2. Measles. | Lc, Lw |
| Module 13 Pathanatomy of parasitic diseases. | Topic 13.1. Parasitic diseases. | Lc, Lw |
| | Topic 13.2. Helminthiasis. | Lc, Lw |
| Module 14 Pathanatomy of quarantine infections and sepsis. | Topic 14.1. Quarantine infections. | Lc, Lw |
| | Topic 14.2. Systemic inflammatory reaction syndrome. | Lc, Lw |
| | Topic 14.3. Sepsis. | Lc, Lw |
| | Topic 14.4. Multiple organ failure syndromes. | Lc, Lw |

* - to be filled in only for full-time training: *LC* - lectures; *LW* - lab work; *S* - seminars.

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

| Type of academic activities | Classroom equipment | Specialised educational / laboratory equipment, software, and materials for course study (if necessary) |
|-----------------------------|---|---|
| Lab work | Classroom for laboratory work, individual consultations, routine monitoring and intermediate certification, equipped with a whiteboard, a set of specialized furniture and equipment (Mini PC Dell Optiplex 3080 Micro, TV LG 49UK6200). Software: Microsoft products (OS, office suite, incl. Office 365). | Museum of macro-preparations on various types of human pathology; A set of micro-preparations for various types of pathology; Binocular microscopes for studying micro-preparations; Tables for various types of pathology. |
| Seminar (214) | An auditorium for conducting seminar-type classes, group and individual consultations, ongoing | |

| Type of academic activities | Classroom equipment | Specialised educational / laboratory equipment, software, and materials for course study (if necessary) |
|-----------------------------|---|---|
| | monitoring and intermediate certification, equipped with a graphite board, a set of specialized furniture and technical means for multimedia presentations (NEC NP210 projector, Asus P-M740 Laptop). Software: Microsoft products (OS, office suite, incl. Office 365). | |
| Seminar (216) | An auditorium for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification, equipped with a graphite board, a set of specialized furniture and technical multimedia presentation tools (NEC VT45 1000 ANSI multimedia projector). | |
| Seminar (218) | An auditorium for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification, equipped with a set of specialized furniture and technical multimedia presentation tools (NEC VT59 projector). | |
| Self-studies (220) | Classroom for independent work of students (can be used for consultations), equipped with a set of specialized furniture and a graphite board. | |

* The premises for students' self-studies are subject to **MANDATORY** mention

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

1. Babichenko I. I., Ivina A. A., Kudryavtseva L. V. Guide to laboratory exercises in pathological anatomy, Moscow: RUDN University, 2019, 270 p.
2. Pathological anatomy [Electronic resource]: Textbook / A. I. Strukov, V. V. Serov; Ed. V. S.Paukova, 6th ed., reprint. :Moscow: GEOTAR-Media, 2015, 880 p. (in Russian).
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=456496&idb=0

3. Ivina A. A., Kudryavtseva L. V., Kudryavtsev G. Yu. Private forms : of cancer: lung cancer, gastric cancer, uterine cancer, ovarian cancer, breast cancer [Electronic resource]: Training manual for practical training in pathological anatomy. Moscow: RUDN Publishing House, 2019. - 40 p.
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=478309&idb=0
4. Ivina A. A., Kudryavtseva L. V., Kudryavtsev G. Yu. Parasitic diseases: malaria, amoebiasis, schistosomiasis, leishmaniasis, trypanosomiasis, echinococcosis.: RUDN Publishing House, 2019. - 28 p. - ISBN 978-5-209-08941-4.
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=478308&idb=0
5. Ivina A. A., Kudryavtseva L. V., Kudryavtsev G. Yu. Immunopathological processes [Electronic resource]: Educational and methodical manual for practical training in pathological anatomy. Moscow: RUDN Publishing House, 2019. - 32 p.
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=478307&idb=0

Additional readings:

Electronic full-text materials:

1. Pathologic anatomy [Electronic resource]: Textbook / A. I. Strukov, V. V. Serov; Ed. V. S.Paukova 6th ed., revised. and additional - M.: GEOTAR-Media, 2015. - 880 p.: ill. (in Russian).
http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=456496&idb=0

Printed publications:

1. Babichenko I.I., Ivina A.A., Kharchenko N.M. Brief description of the main pathological processes. Specialty "Medicine". - M.: Publishing House of RUDN University, 2014. - 47 p.
2. Babichenko I.I., Ivina A.A. Dictionary of basic pathoanatomical terms. Specialty "Medicine". - M.: Publishing House of RUDN University, 2014. - 48 p.
3. Gribunov Yu.P., Rogov K.A., Shestakova I.N., Ivina A.A. Basic principles of registration of the final clinical and pathoanatomical diagnoses. - M.: Publishing house of RUDN University, 2015.- 19 p.
4. Babichenko I.I., Vladimirtseva A.L., Kovyazin V.A., Kharchenko N.M. Guide to laboratory studies in pathological anatomy. M.: RUDN, 2008. - 249 p.
5. Vladimirtseva A.L. parasitic diseases. Educational and methodical manual for a practical lesson in pathological anatomy. - M.: RUDN, 2009. - 31 p.
6. Gribunov Yu.P., Shestakova I.N., Babichenko I.I. immunopathological processes. Educational and methodical manual for a practical lesson in pathological anatomy. - M.: RUDN, 2009. - 23 p.
7. Zayratyants O.V. and others. Pathological anatomy: Atlas. - M: GEOTAR-Media, 2009. - 472 p.
8. Zairatyants O.V., Kaktursky L.V. Formulation and comparison of clinical and pathoanatomical diagnoses. Handbook. - 2nd ed., revised. and add. - M.: LLC Medical Information Agency, 2011.-576s.
9. Microscopic technique: Guide / Ed. D.S. Sarkisov and Yu.L. Perov. - M.: Medicine, 1996. - 544 p.
10. Pathological anatomical diagnosis of human tumors: A guide in 2 volumes / Ed. N.A. Kraevsky, A.V. Smolyannikov, D.S. Sarkisov. - M.: Medicine, 1993.

11. Sapozhnikov A.G., Dorosevich A.E. Histological and microscopic technique: A guide. - Smolensk: SAU, 2000. - 476s.
12. Serov V. Methods for verifying a morphological diagnosis // Vrach. - 2000. - No. 12. - P.22-23.
13. M. A. Paltsev, V. L. Kovalenko, and N. M. Anichkov, Russ. Guide to the biopsy-sectional course. - M.: Medicine, 2002. - 256 p.: ill. (in Russian).

Internet-(based) sources:

1. Electronic libraries with access for RUDN students

1. -RUDN University Electronic Library System-RUDN [University Electronic Library System http://lib.rudn.ru/MegaPro/Web](http://lib.rudn.ru/MegaPro/Web)
 - EBS "University Library online" <http://www.biblioclub.ru>
 - EBS Urite <http://www.biblio-online.ru>
 - EBS "Student's consultant" www.studentlibrary.ru
 - EBS "Lan" <http://e.lanbook.com/>
 - EBS "Troitsky Bridge"
 - Full collection of Cambridge University Press journals <https://www.cambridge.org/core>
 - Journals, published by Nature Publishing Group <http://www.nature.com/siteindex/index.html>
 - Oxford Journals, a complete collection of journals <https://academic.oup.com/journals/>
 - Archive of scientific journals published by SAGE Publications <http://arch.neicon.ru/xmlui/handle/123456789/2757634/browse?type=source>
 - Science online, American Association for the Advancement of Science (AAAS) <http://science.sciencemag.org/content/by/year>
 - ScienceDirect (ESD), «FreedomCollection», ИД "Elsevier" <http://www.sciencedirect.com/>
 - Electronic resources of Springer publishing house <https://rd.springer.com/>
 - Taylor & Francis journals <https://www.tandfonline.com/>
 - Thieme <https://science-of-synthesis.thieme.com/>
 - Wiley Online Library - a multidisciplinary collection of journals <http://www.wileyonlinelibrary.com/>

2. Databases and search engines:

- Discipline page in TUIS RUDN University: <https://esystem.rudn.ru/course/view.php?id=2079>
- U.S. National Library of Medicine National Institutes of Health: <http://www.ncbi.nlm.nih.gov/pubmed/>
- Scientific electronic library: <http://elibrary.ru/defaultx.asp>
- Website of the Russian Society of Pathologists <http://patholog.ru>
- Website of the Royal College of Pathologists <https://www.rcpath.org/>
- Pathological Anatomy Information Database <https://www.pathologyoutlines.com/>

- Online courses archive of video lectures on pathological anatomy Medical School Pathology <https://www.medicalschoolpathology.com/>
- Online Pathological Anatomy Laboratory of the University of Utah <https://webpath.med.utah.edu/>
- Information online resource on pathological anatomy <http://www.pathguy.com/>
- WebPathology Slides Database <https://www.webpathology.com/>
- Micropreparations Juan Rosai's Collection <https://www.rosaicollection.org/>

*Training toolkit for self- studies to master the course *:*

The set of lectures on the course "**Pathological Anatomy, Clinical Pathological Anatomy**"

The laboratory workshop (if any).on the course "**Pathological Anatomy, Clinical Pathological Anatomy**"

The guidelines for writing a course paper / project (if any) on the course "**Pathological Anatomy, Clinical Pathological Anatomy**".

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION

The assessment toolkit and the grading system* to evaluate the competences formation level (GPC-5) upon the course study completion are specified in the Appendix to the course syllabus.

* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

DEVELOPERS:

Associate Professor of the
Department of Pathological

A.A. Ivina

position, department

signature

name and surname

Head of the Department of
pathological Anatomy of MI

I. I. Babichenko

position, department

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HEAD OF EDUCATIONAL DEPARTMENT:

of the Department of
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