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ФИО: Ястребов Олег Александрович
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**Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
NAMED AFTER PATRICE LUMUMBA
RUDN University
Institute of Medicine**

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

COURSE SYLLABUS

Histology, Embryology, Cytology - Oral Histology

course title

Recommended by the Didactic Council for the Education Field of:

31.05.03 Dentistry

field of studies / speciality code and title

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

Dentistry

higher education programme profile/specialisation title

2025

1. COURSE GOAL(s)

The goal of the course "**Histology, embryology, cytology – Oral Histology**" is to acquire knowledge of microscopic functional morphology and the development of human cellular, tissue and organ systems, including organs of the oral cavity, providing an appropriate part of the theoretical foundation for the training and professional activity of a dentist.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The mastering of the discipline "**Histology, embryology, cytology – Oral Histology**" is aimed at the formation of the following competencies among students: GPC-9.

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
GPC-9	Able to assess morphofunctional, physiological states and pathological processes in the human body to solve professional problems	GPC-9.1 Owns the algorithm of clinical, laboratory and functional diagnostics in solving professional tasks
		GPC-9.2 Evaluates the results of clinical, laboratory and functional diagnostics in solving professional tasks.
		GPC-9.3 Determines 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-9	Able to assess morphofunctional, physiological conditions and pathological processes in the human body to solve professional problems	Anatomy Biology	General pathology and pathologic physiology; Pathological anatomy of the head and neck; General and clinical pharmacology; Forensic medicine; Gerontostomatology and

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
			diseases of the oral mucosa; Cariesology and disease of hard tissues of the oral cavity; Paradontology

* To be filled in according to the competence matrix of the higher education programme.

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "**Histology, embryology, cytology**" is 6 credits (216 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			
			2	3		
<i>Contact academic hours</i>		<i>140</i>	<i>72</i>	<i>68</i>		
including:						
Lectures (LC)		35	18	17		
Lab work (LW)		105	54	51		
Seminars (workshops/tutorials) (S)		-	-	-		
<i>Self-studies</i>		<i>52</i>	<i>30</i>	<i>22</i>		
<i>Evaluation and assessment (exam/passing/failing grade)</i>		<i>24</i>	<i>6</i>	<i>18</i>		
Course workload	academic hours	216	108	108		
	credits	6	3	3		

* 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
Section 1 Introduction to the discipline. Research methods	1.1. Methods of histological, cytological and embryological studies	LC, LW
Section 2 Cytology.	2.1. Cell structure	LC, LW
	2.2. Organelles and inclusions	LC, LW
	2.3. Nucleus: structure, functions. Cell cycle	LC, LW
Section 3 Basic Histology.	3.1. The concept of tissues. Epithelia. Glands.	LC, LW
	3.2. The system of the internal environment tissues. Blood and lymph. Hematopoiesis.	LC, LW

Course module title	Course module contents (topics)	Academic activities types
	3.3. Connective tissues. Connective tissue proper. Connective tissues with special properties.	LC, LW
	3.4. Skeletal connective tissues. Cartilage. Bone tissues.	LC, LW
	3.5. Muscle tissues	LC, LW
	3.6. Nerve tissue	LC, LW
Section 4 Histology of organs and organ systems	4.1. Nerve System	LC, LW
	4.2. Sensory system (Organs of special senses)	LC, LW
	4.3. Circulatory system	LC, LW
	4.4. System of organs of hematopoiesis and immune defense	LC, LW
	4.5. Endocrine system	LC, LW
	4.6. Digestive system	LC, LW
	4.7. Respiratory system	LC, LW
	4.8. Skin and its derivatives	LC, LW
	4.9. Urinary system	LC, LW
	4.10. Reproductive system	LC, LW
Section 5 Oral Histology	5.1. Features of the structure of the anterior part of the digestive tube	LC, LW
	5.2. Tooth structure	LC, LW
	5.3. Tooth development (odontogenesis)	LC, LW
	5.4. Salivary glands	LC, LW
Section 6 Embryology.	6.1. Basic (Comparative) embryology	LC, LW
	6.2. The basis of human embryology	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)
Learning-and Research Lab	Medical Biotechnologies Lab equipped with a set of specialized furniture and lab equipment; (classrooms 316, 318)	Laboratory CO2- incubators Shellab, laminar-flow cabinet series Biowizard , microscope “Leica Microsystem CMC»,

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
		inverted microscope Leica DMI8, automatic cell counter TC20, laboratory microcentrifuge MiniSpin, abacterial box, flow cytometer, freezer compartment UF V 700, cellular analyzer xCELLigence, flatbed monochromator fluorimeter, cytofluorimeter cell sorter, the Lab of a full cycle of histological tissue processing..
Lab-work	Classroom for lab work, individual consultations, self-studies equipped with a set of specialized furniture; whiteboard; light microscopes and a set of devices (classrooms . 221, 223, 224, 228, 332).	Microscopes “МИКМЕД-5”, technical equipment: multimedia projector BenQ Projector MX 525, projection screen, laptop ASUS X515JP-BQ029T, computer Lenovo V530S-071CB with stable Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), sets of histological preparations, microphotographs, a list of stands, tables, visual posters, etc
Self-studies	Classroom for self-studies of students (can be used for seminars and consultations), equipped with a set of specialized furniture, microscopes and computers with stable wireless Internet connection. (aud. 223, 332). ; a set of devices includes portable multimedia projector, laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype	Microscopes “МИКМЕД-5”, technical equipment: multimedia projector BenQ Projector MX 525, projection screen, laptop ASUS X515JP-BQ029T, computer Lenovo V530S-071CB with stable Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), sets of histological preparations, microphotographs, a list of stands, tables, visual posters, etc

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

1. Botchey V.M., Savrova O.B., Eremina I.Z. Basic Cytology: the course of lectures / M. : PFUR, 2022. – 56 p. - ISBN 978-5-209-11049-1.

2. Botchey V.M., Savrova O.B., Eremina I.Z. Embryology. The course of lectures / M : PFUR, 2022. – 44 p. - ISBN 978-5-209-11050-7.
3. Botchey V.M., Savrova O.B., Eremina I.Z. Basic Histology. The course of lectures / M : PFUR, 2022. – 64 p. - ISBN 978-5-209-11050-7.
4. Histology, Cytology, Embryology/ Botchey V.M., Savrova O.B., Eremina I.Z., Grinberg M.V. Lapshin A.A. / M.: PFUR, 2023. – 56 p. - ISBN 978-5-209-11923-4.
5. Histology, Cytology and Embryology : textbook and guide (with control problems, tests, and pictures) / T. V. Boronikhina, S. L. Kuznetsov, V. L. Goryachkina [et al.] ; edited by S.L. Kuznetsov. – M.: Medical Informational Agency, 2020. - 419 p. - ISBN 978-5-9986-0387-7
6. Savrova O.B. Basic Histology: the course of lectures / M. : PFUR, 2017. - 64 p. : il. - ISBN 978-5-209-08126-5.

Additional readings:

Electronic full-text materials:

1. Savrova O.B. Histology of Oral Cavity / O.B. Savrova. - M.: PFUR, 2016. - 73 с. : il. - ISBN 978-5-209-07295-9 : 56.42.
2. Savrova O. B., Eremina I.Z. Cytology. Embryology: the course of lectures[Electronic resource] / ; - M. : PFUR, 2016. - 76 p. : il. - ISBN 978-5-209-07391-8.
1. O.B.Savrova, V.M.Botchey, I.Z Eremina. Basic Cytology [Electronic resource] = Цитология: Course of lectures for students of English-media groups / M.: PFUR, 2019.
3. Savrova O.B., Botchey V.M., Eremina I.Z. Systemic histology: course of lectures for students of English-media groups. P. 1 / O.B. Savrova, V.M. Botchey, I.Z. Eremina. - M. : PFUR, 2018. - 81 p. : ил. - ISBN 978-5-209-08539-3. - ISBN 978-5-209-08540-9 (P. 1).
4. Savrova O.B., Botchey V.M., Eremina I.Z. Systemic histology : course of lectures for students of English-media groups. P. 2 / O.B. Savrova, V.M. Botchey, I.Z. Eremina. - Электронные текстовые данные. - M. : PFUR, 2018. - 80 p. : ил. - ISBN 978-5-209-08539-3. - ISBN 978-5-209-08812-7 (P. 2).
5. Kierszenbaum A. L. Histology and Cell Biology. An Introduction to Pathology / A.L. Kierszenbaum, L.L. Tres. - Fourth Edition; - Philadelphia : Elsevier, 2016. - 734 p. : ill. - ISBN 978-0-323-31330-8 : 8893.12.
6. Kuznetsov S. L. Histology, Cytology and Embriology : (a course of lectures) / S.L. Kuznetsov, T.V. Boronikhina, V.L. Goryachkina ; edited by Babchenko E.V. - 2nd edition ; - Moscow : Medical Informational Agency, 2019. - 240 p. - ISBN 978-5-907098-08-4 : 798.00.

Printed publications:

7. Histology, Cytology, Embryology: manual to Laboratory Classes. P. 1 / V.M. Botchey, O.B. Savrova, I.Z. Eremina, V.M. Grinberg; - M.: PFUR, 2020. - 37 p. - ISBN 978-5-209-09801-0. - ISBN 978-5-209-09802-7 (ч. I).

Internet (based) sources

1. Electronic library network (ELN) of RUDN and third-party ELN, to which university students have access on the basis of concluded contracts:

- Electronic library network of RUDN – ELN RUDN <http://lib.rudn.ru/MegaPro/Web>
- ELN «University Library online» <http://www.biblioclub.ru>
- ELN Urait <http://www.biblio-online.ru>
- ELN «Student Advisor» www.studentlibrary.ru
- ELN «Lan» <http://e.lanbook.com/>

2. Databases and search systems:

- electronic fund of legal and regulatory and technical documentation <http://docs.cntd.ru/>
- search system Yandex <https://www.yandex.ru/>

- search system Google <https://www.google.ru/>
- abstract database SCOPUS <http://www.elsevierscience.ru/products/scopus/>

Learning toolkits for self-studies during the development of the discipline

1. Lectures Synopsis on the discipline "Histology, embryology, cytology".
2. Methodological guidelines for the implementation and execution of control and independent work on the discipline "Histology, embryology, cytology"

* - All teaching materials for self-studying of students are placed in accordance with the current procedure on the discipline page in the RUDN LMS TUIS.

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

Evaluation materials and point-rating system* for assessing the level of competence formation (GPC-9) based on the results of mastering the discipline «Histology, embryology, cytology» are presented in the Appendix to this Work Program of the discipline.

* 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 Histology,
Cytology and Embryology

position, department

signature

Ir. Z. Eremina

name and surname

HEAD OF EDUCATIONAL DEPARTMENT:

of Histology, Cytology and
Embryology

name of department

signature

T. Kh. Fatkhutdinov.

name and surname

HEAD OF HIGHER EDUCATION PROGRAMME:

Deputy Director of Institute of
medicine

position, department

signature

S.N. Razumova

name and surname