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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

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

2024

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

(in accordance with the Federal State Educational Standard of Higher Education (FSES) 3++ 31.05.03 dentistry).

Table 2.1. The list of competencies formed by students during the development of the discipline (results of the mastering of the discipline)

Competence code	Competence	Indicators of competence formation (within the framework of this discipline)
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. THE COURSE IN THE STRUCTURE of EDUCATIONAL PROGRAMS (EP) of HIGHER EDUCATION (HE)

The discipline "**Histology, embryology, cytology – Oral Histology**" refers to the Compulsory Disciplines of block B1 of the EP HE.

Within the framework of the Educational Program, students also master other disciplines and/or practices that contribute to expected learning outcomes of the course "**Histology, embryology, cytology-Oral Histology**".

Table 3.1. List of Higher Education Program disciplines that contribute to expected learning outcomes

Code	The competence	Previous disciplines	Subsequent disciplines/modules, practices*
GPC-9	Able to assess morpho-functional, 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;

Code	The competence	Previous disciplines	Subsequent disciplines/modules, practices*
			Gerontostomatology and diseases of the oral mucosa; Cariesology and disease of hard tissues of the oral cavity; Paradontology

4. THE DISCIPLINE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline "**Histology, embryology, cytology**" is equal to 6 credits.

The total labor intensity of the discipline "**Histology, embryology, cytology – Oral Histology**" is 6 credits.

Table 4.1. Types of academic activities during the period of the HE program mastering

Type of academic activities	TOTAL, academic hours (ac.h)	semesters		
		2	3	
<i>Classroom learning , ac.h.</i>	140	72	68	
Lectures (Lec)	35	18	17	
Laboratory work (Lab)	105	54	51	
Practical/seminar classes	-	-	-	
<i>Self-studies, academic hours</i>	<i>40</i>	<i>27</i>	<i>13</i>	
Evaluation and assessment (exam or pass/fail grading)	36	9	27	
Total workload of the discipline	ac.h.	216	108	108
	credits	6	3	3

5. THE CONTENT of the DISCIPLINE

Table 5.1. The content of the discipline and types of academic activities

Name of the discipline section	Content of the section (topics)	Type of academic activities
Section 1 Introduction to the discipline. Research methods	1.1. Methods of histological, cytological and embryological studies	Lec, Lab
Section 2	2.1. Cell structure	Lec, Lab

Name of the discipline section	Content of the section (topics)	Type of academic activities
Cytology.	2.2. Organelles and inclusions	Lec, Lab
	2.3. Nucleus: structure, functions. Cell cycle	Lec, Lab
Section 3 Basic Histology.	3.1. The concept of tissues. Epithelia. Glands.	Lec, Lab
	3.2. The system of the internal environment tissues. Blood and lymph. Hematopoiesis.	Lec, Lab
	3.3. Connective tissues. Connective tissue proper. Connective tissues with special properties.	Lec, Lab
	3.4. Skeletal connective tissues. Cartilage. Bone tissues.	Lec, Lab
	3.5. Muscle tissues	Lec, Lab
	3.6. Nerve tissue	Lec, Lab
Section 4 Histology of organs and organ systems	4.1. Nerve System	Lec, Lab
	4.2. Sensory system(Organs of special senses)	Lec, Lab
	4.3. Circulatory system	Lec, Lab
	4.4. System of organs of hematopoiesis and immune defense	Lec, Lab
	4.5. Endocrine system	Lec, Lab
	4.6. Digestive system	Lec, Lab
	4.7. Respiratory system	Lec, Lab
	4.8. Skin and its derivatives	Lec, Lab
	4.9. Urinary system	Lec, Lab
	4.10. Reproductive system	Lec, Lab
Section 5 Oral Histology	5.1. Features of the structure of the anterior part of the digestive tube	Lec, Lab
	5.2. Tooth structure	Lec, Lab
	5.3. Tooth development (odontogenesis)	Lec, Lab
	5.4. Salivary glands	Lec, Lab
Section 6 Embryology.	6.1. Basic (Comparative) embryology	Lec, Lab
	6.2. The basis of human embryology	Lec, Lab

6. MATERIAL and TECHNICAL SUPPORT of the DISCIPLINE

Table 6.1. Material and technical support of the discipline

Classroom for Academic Activity Type	Classroom Equipment	Specialized educational/laboratory equipment, software and materials for the mastering of the discipline
Learning-and Research Lab	Medical Biotechnologies Lab equipped with a set of specialized furniture and lab equipment; (classrooms 316, 318)	Laboratory CO ₂ - incubators Shellab, laminar-flow cabinet series Biowizard , microscope “Leica Microsystem CMC», 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.
Specialized 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
For students 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,	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.

Classroom for Academic Activity Type	Classroom Equipment	Specialized educational/laboratory equipment, software and materials for the mastering of the discipline
	projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype	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. EDUCATIONAL, METHODOLOGICAL and INFORMATION SUPPORT of the DISCIPLINE

Main reading

1. 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.
2. 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.
3. Lowe James S.Stevens & Lowe Human Histology / J.S. Lowe, P.G. Anderson. - Fourth Edition; Philadelphia: Elsevier, 2015. - 429 p. : il. - ISBN 978-0-723-43502-0 : 8070.94.
4. 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.
5. Savrova O.B. Basic Histology: the course of lectures / M.: PFUR, 2017. - 64 p.: il. - ISBN 978-5-209-08126-5.
6. Savrova O.B. Histology of Oral Cavity / O.B. Savrova. - M.: PFUR, 2016. - 73 c. : il. - ISBN 978-5-209-07295-9: 56.42.
7. Savrova O.B., Eremina I.Z., Botchey V.M. Histology: Organ Systems. - M.: PFUR, 2019. - 168 c. - ISBN 978-5-209-08576-8.
8. Savrova O.B., Botchey V.M Eremina I.Z. Systemic Histology. Part 1 - M: PFUR, 2018. – 79 p. – Appl. - ISBN 978-5-209-08540-3.
9. Savrova O.B., Botchey V.M Eremina I.Z. Systemic Histology. Part 2. - M: PFUR, 2018. – 88 p. – Appl. - ISBN 978-5-209-08539-3.

Additional literature:

Electronic full-text materials:

1. 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.
2. 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.: il. - 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. - М. : PFUR, 2018. - 80 p.: ил. - ISBN 978-5-209-08539-3. - ISBN 978-5-209-08812-7 (P. 2).

Printed publications:

1. Histology, Cytology, Embryology: manual to Laboratory Classes. P. 1 / V.M. Botchey, O.B. Savrova, I.Z. Eremina, V.M. Grinberg; э - М. : PFUR, 2020. - 37 p. - ISBN 978-5-209-09801-0. - ISBN 978-5-209-09802-7 (ч. I).
2. Histology, Cytology, Embryology: manual to Laboratory Classes. P.2/ V.M. Botchey, O.B. Savrova, I.Z. Eremina, V.M. Grinberg, A.A.Lapshin; - М.: PFUR, 2023. - 55 p. - ISBN 978-5-209-11923-0. - ISBN 978-5-209-09802-7 (ч. II).

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 MATERIALS and POINT-RATING SYSTEM for ASSESSING the LEVEL of COMPETENCE FORMATION in the DISCIPLINE

Assessment materials and a point-rating system (PRS) for assessment the level of competence formation (part of competencies) based on the results of mastering the discipline "Histology, embryology, cytology" are presented in the Appendix to this Work Program of the discipline.

DEVELOPERS:

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