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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 program developer

COURSE SYLLABUS

Ophthalmology

(course title)

Recommended by the Didactic Council for the Education Field of:

31.05.03 Dentistry

(higher education programme profile/specialisation title)

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

Dentistry

(higher education programme profile/specialisation title)

2024 r.

1. COURSE GOAL(s)

The discipline "Ophthalmology" is included in the specialty program "Dentistry" in the direction of 31.05.03 "Dentistry" and is studied in the 7th semester of the 4th course. The discipline is implemented by the Department of Eye Diseases. The discipline consists of 8 sections and 32 topics and is aimed at studying the basic patterns of development and functioning of the organ of vision, the causes, course, clinical picture, diagnosis, treatment and prevention of the most common eye diseases and damage to the organ of vision, as well as the ability to apply the acquired knowledge in solving professional problems. tasks.

The aim of the discipline "Ophthalmology" is the formation of scientific knowledge in the field of ophthalmology and the ability on their basis to identify deviations in the state of the organ of vision in people of different ages, to carry out prevention and provide first aid to patients, taking into account further training and professional activities.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering of discipline «Ophthalmology» is aimed at the development of the following competences:

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

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-5	Ability to conduct an examination of the patient in order to establish diagnosis in solving professional problems	GK-5.6. Refers the patient to a consultation with specialist doctors if there are medical indications in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of dental care, considering standards. GK-5.8. Conducts differential diagnosis with other diseases/conditions, including emergencies.
GC-9	Ability to evaluate morpho-functional, physiological conditions and pathological processes in the human body for solving professional problems	GK-9.3. Determines the morphofunctional, physiological states and pathological processes of the human body.

PC-1	Capable of examining the patient in order to establish diagnosis.	PC-1.2. Receives information from patients (their relatives/legal representatives), conducts a survey of patients on the subject of general health, identification of concomitant diseases to establish a preliminary diagnosis.
PC-6	Capable of analyzing and publicly presenting evidence-based medical information medicine, to participate in scientific research, to the introduction of new methods and techniques aimed at protecting public health.	PC-6.1. Searches for medical information based on evidence-based medicine, interpreting data from scientific publications and / or prepares a presentation for public presentation medical information, results of scientific research.

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The discipline "Ophthalmology" refers to the basic part of the block 1 of the curriculum.

Within the educational program, students also master other disciplines and/or practices that contribute to achieving the planned results of mastering the syllabus "Ophthalmology".

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*
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GC-5	Able to examine a patient to determine diagnosis when solving professional problems	<p>Dental prosthetics (simple prosthetics); Cariesology and diseases of hard dental tissues; Local anesthesia and anesthesiology in dentistry; General surgery; Propaedeutics of dental diseases; Prosthetics for complete absence of teeth; Surgical diseases; Oral surgery; Internal illnesses; Endodontics; Pathological anatomy - Pathanatomy of the head and neck;</p>	<p>Assistant dentist (orthopedist); Gnathology and functional diagnostics of the temporal mandibular joint; Dermatovenerology; Children's dentistry; Pediatric maxillofacial surgery; Head and neck diseases; Medical genetics in dentistry; Orthodontics and children's prosthetics; Dental prosthetics (complex prosthetics); Maxillofacial and gnathic surgery; Maxillofacial prosthetics; Gerontostomatology and diseases of the oral mucosa; Neurology; Periodontology; Psychiatry and Narcology; Implantology and reconstructive surgery oral cavity; Pediatrics;</p>
GC-9	Able to assess morphofunctional, physiological states and pathological processes in the human body to solve professional problems	<p>Histology, embryology, cytology - Histology of the oral cavity; Local anesthesia and anesthesiology in dentistry; Microbiology, virology - Microbiology of the oral cavity; Normal physiology, physiology of the maxillofacial area; Oral surgery; Biological chemistry - Biochemistry of the oral cavity; Pathophysiology - Pathophysiology of the head and neck; Radiation diagnostics; Human Anatomy - Head and Neck Anatomy; Pathological anatomy - Pathanatomy of the head and neck; Topographic anatomy and operative surgery of the head and neck;</p>	<p>Children's dentistry; Head and neck diseases; Implantology and reconstructive surgery of the oral cavity; Orthodontics and children's prosthetics; Maxillofacial and gnathic surgery; Forensic Medicine; Medical rehabilitation;</p>

PC-1	Capable of examining a patient to establish a diagnosis	<p>Dentist Assistant (hygienist); Dental prosthetics (simple prosthetics); Immunology, clinical immunology; Cariesology and diseases of hard dental tissues; Local anesthesia and anesthesiology in dentistry; Propaedeutics of dental diseases; Prosthetics for complete absence of teeth; Oral surgery; Fundamentals of military training. Life safety; Endodontics; Three-dimensional x-ray diagnostic methods in dentistry**; Three-dimensional computer modeling of teeth**; Chemistry of biogenic elements**; Dental modeling of teeth**; Pathophysiology - Pathophysiology of the head and neck; Pathological anatomy - Pathanatomy of the head and neck; Radiation diagnostics;</p>	<p>Physician Assistant-dentist (therapist); Dental assistant (pediatric); Assistant dentist (orthopedist); Assistant dentist (general practice), incl. research work; Gnathology and functional diagnostics of the temporal mandibular joint; Children's dentistry; Pediatric maxillofacial surgery; Head and neck diseases; Implantology and reconstructive surgery of the oral cavity; Medical genetics in dentistry; Orthodontics and children's prosthetics; Dental prosthetics (complex prosthetics); Maxillofacial and gnathic surgery; Maxillofacial prosthetics; Gerontostomatology and diseases of the oral mucosa; Periodontology; Modern endodontics**; Aesthetic restoration teeth**; Medical rehabilitation; Cone beam computed tomography in diagnosis, planning and evaluation of the effectiveness of dental solutions; Oncostomatology and radiation therapy;</p>
PC-6	Capable of analysis and public submission evidence-based medical information medicine, to participate in conducting scientific research, to introduction of new methods and methods aimed at protecting public health	<p>Dental prosthetics (simple prosthetics); Immunology, clinical immunology; Prosthetics for complete absence of teeth; Pharmacology;</p>	<p>Assistant dentist (general practices), incl. research work; Gnathology and functional diagnostics of the temporal mandibular joint; Pediatric maxillofacial surgery; Medical genetics in dentistry; Dental prosthetics (complex prosthetics); Maxillofacial prosthetics; Clinical researches; Clinical dentistry;</p>

* - to be filled out in accordance with the competency matrix and SUP EP VO

** - elective disciplines/practices

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course «Ophthalmology» is 2 credits.

Table 4.1. Types of educational work by periods of mastering the educational program of higher education for full-time study.

Type of academic activities	Total academic hours		Semesters
			7
<i>Contact academic hours</i>	48		48
Lectures (LC)	0		0
Lab work (LW)	48		48
Seminars (workshops/tutorials) (S)	0		0
<i>Self-studies</i>	21		21
<i>Evaluation and assessment (exam/passing/failing grade)</i>	3		3
Course workload	academic hours	72	72
	credits	2	2

The total workload of the course «Ophthalmology» is 2 credits.

Table 4.2. Types of educational work by periods of mastering the educational program of higher education for full-time study.

Type of academic activities	Total academic hours		Semesters
			7
<i>Contact academic hours</i>	48		48
Lectures (LC)	0		0
Lab work (LW)	48		48
Seminars (workshops/tutorials) (S)	0		0
<i>Self-studies</i>	21		21
<i>Evaluation and assessment (exam/passing/failing grade)</i>	3		3
Course workload	academic hours	72	72
	credits	2	2

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Section number	Course module title	Course module contents (topics)	Academic activities types
Section 1.	Anatomy of the eyeball. Methods of eye examination.	Topic 1.1. Three parts of the visual analyzer. Anatomy of the orbit.	LW
		Topic 1.2. Protective apparatus of the eye. Conjanctiva.	
		Topic 1.3. Tear secretion and evacuation apparatus.	
		Topic 1.4. Tunics of the eyeball. Structures of the eyeball.	
		Topic 1.5. examination of the eye with the side light and in transmitted light. The basics of ophththalmoscopy.	
		Topic 1.6. Central and peripheral vision. Changes of the vision fields.	
		Topic 1.7. Colour vision. Disorders of color perception.	
Section 2.	Visial acuity. Refraction. Accomodation.	Topic 2.1. Optic system of the visual organ.	LW
		Topic 2.2. Visual acuity.	
		Topic 2.3. Physical and clinical refraction.	
		Topic 2.4. Accommodation and convergence.	
		Topic 2.5. Clinical refractive errors. Correction.	
		Topic 2.6. Astigmatism, its types, principles of correction.	
		Topic 2.7. Presbyopia, principles of correction	
Section 3.	Binocular vision. Strabismus.	Topic 3.1. Binocular vision. Disorders of binocular vision	LW
		Topic 3.2. Strabismus, types. reasons. Treatment of strabismus	
Section 4.	Inflammatory diseases of the anterior segment of the eye (conjunctivitis, keratitis, sclerites)	Topic 4.1. Acute infectious conjunctivitis. Classification. Treatment. Chronic conjunctivitis. Classification. Treatment Allergic conjunctivitis. Classification. Treatment.	LW

		Topic 4.2. General symptoms of cornea diseases. Exogenous and endogenous keratitis. Etiology, clinical picture, treatment. Corneal ulcer. Etiology, clinical picture, treatment. Outcomes of keratitis. Treatment of keratitis and their consequences.	
		Topic 4.3. Sclerites. The clinical symptoms and treatment	
Section 5.	Diseases of the vascular tunic.	Topic 5.1. Iritis. Iridocyclitis. Clinical picture, diagnostics, treatment.	LW
		Topic 5.2. Chorioretinitis. Clinical picture, diagnostics, treatment.	
Section 6.	Cataract. Glaucoma.	Topic 6.1. Definition of glaucoma. Normal and elevated IOP. Etiology, pathogenesis, and classification of glaucoma. Acute attack of glaucoma. Features of the clinical picture. Treatment. Methods of treatment of glaucoma.	LW
		Topic 6.2. Definition of cataract. Classification of cataracts. Link cataracts development with systemic diseases. Modern principles of treatment of cataract.	
Section 7.	Diseases of the retina and optic nerve	Topic 7.1. Retinitis. Retinal changes in the cases of systemic diseases. The clinical picture. Treatment. Degenerative changes of the retina. The clinical picture. Treatment.	LW
		Topic 7.2. inflammatory and not inflammatory diseases of the optic nerve. Features of the clinical picture. Treatment.	
Section 8.	Damage to the organ of vision. Eye diseases in tropical countries.	Topic 8.1. The causes and classification of eye injuries. Damage to the eyelids. Blunt trauma of the eyeball. Trauma of the orbit. Diagnosis. Treatment. Eye burns. Classification. The methods of treatment.	LW
		Topic 8.2. Organization of eye care. vision disability.	
		Topic 8.3. Etiology of trachoma, stages of disease. Complications and outcomes of trachoma. Differential diagnostic. Prevention and management of trachoma.	

		Topic 8.4. features of ocular pathology in countries with a tropical climate. Classification of eye diseases in tropical countries. Ophthalmohelminthiases (main types).	
		Topic 8.5 Ophthalmomyiasis. Treatment, prevention.	
		Topic 8.6. Change of the eye in general diseases. Treatment.	
		Topic 8.7. the eye diseases in cases of vitamins' deficiency, animals's and plants's poisons.	

* - 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. Material and technical support of the discipline

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Seminar (clinical base of MSCh AO “Vnukovo International Airport”)	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	ophthalmic diagnostic equipment: Golovin-Sivtsev eye chart, phoropter, electronic sign projector, slit lamp, direct/indirect ophthalmoscopes, skiascopic rulers, perimeter, Maklakov tonometer, pneumotonometer, A -B-scan, fundus camera, retinotomograph, sets of microsurgical instruments

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
		Software: 1. Microsoft Office 2. Multimedia manual (Atlas of ophthalmology) Jaypee's Video Atlas of Ophthalmic Surgery. Second Edition. Includes 16 Interactive DVD-ROMS Duration approx 35 hrs. (Video LIX)
Laboratory of innovative methods of treatment of eye pathology (clinical base Moscow city clinical Hospital after V.M. Buyanov)	A classroom for laboratory work, individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and machinery	computer/laptop with installed software. multimedia projector with a screen, demonstration tables, dummies, broadcast system from the ophthalmic operating room "Live Surgery" Software: 1. Microsoft Office 2. Multimedia manual (Atlas of ophthalmology) Jaypee's Video Atlas of Ophthalmic Surgery. Second Edition. Includes 16 Interactive DVD-ROMS Duration approx 35 hrs. (Video LIX)
Seminar (clinical base of MSCh AO "Vnukovo International Airport")	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	computer/laptop with installed software. multimedia projector with a screen,

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
		<p>- demonstration tables, dummies, Software: 1. Microsoft Office</p> <p>2. Multimedia manual (Atlas of ophthalmology) Jaypee's Video Atlas of Ophthalmic Surgery. Second Edition. Includes 16 Interactive DVD-ROMS Duration approx 35 hrs. (Video LIX)</p>
Self-studies (clinical base Moscow city clinical Hospital after V.M. Buyanov)	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment.	<p>computer/laptop with installed software. multimedia projector with a screen, demonstration tables, dummies, Software: 1. Microsoft Office</p> <p>2. Multimedia manual (Atlas of ophthalmology) Jaypee's Video Atlas of Ophthalmic Surgery. Second Edition. Includes 16 Interactive DVD-ROMS Duration approx 35 hrs. (Video LIX)</p>

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

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

1. Ophthalmology: national guide / ed. S.E. Avetisova, E.A. Egorova, L.K. Moshetova, V.V. Neroeva, Kh.P. Takhchidi. - 2nd ed. , processed and additional ; Electronic text data. - Moscow: GEOTAR-Media, 2022. - 904 p.

https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link_FindDoc&id=508239&idb=0

2. Ophthalmology: textbook / ed. E.A. Egorova. - 2nd ed. , processed and additional ; Electronic text data. - Moscow: GEOTAR-Media, 2021. - 272 p.

https://lib.rudn.ru:443/MegaPro/UserEntry?Action=Link_FindDoc&id=508140&idb=0

Additional readings:

1. Dutton J.J. Atlas of clinical anatomy of the orbit / J.J. Dutton; Translated from English, edited by S.N. Sakhnova, V.V. Myasnikova. - M.: Practical Medicine, 2021.- 296 pp. 2.

Inflammatory and infectious diseases of the eyes / ed. Hyun Gong Yoo; lane from English edited by I. A. Loskutova. — Moscow: GEOTAR-Media, 2021.- 128 p.

3. Erichev V.P. Basic methods for diagnosing glaucoma / V.P. Erichev, A.A. Antonov, A.A. Vitkov.-M.: April, 2021.- 337 p.

4. Diseases of the macular region manual / ed. Ivany K. Kim; trans. from English edited by I.A. Loskutova.- Moscow: GEOTAR-Media, 2022.- 144 p.

5. Conjunctivitis/ I.A. Loskutov, E.N. Khomyakova.-Moscow: GEOTARMEDIA, 2022.- 152 pp.:

6. Red eye syndrome (clinic, diagnosis, treatment): textbook. manual for use in education. institutions implementing basic vocational education programs of higher education. education at the residency level in the specialty “Ophthalmology”; comp. V.V. Egorov, G.P.

Smolyakova, O.V. Kolenko, L.P. Danilova. - Khabarovsk: Editorial and publishing center IPKSZ, 2021- 416 p. 7. Ophthalmology. Pharmacotherapy without errors: a guide for doctors / ed.

Yu. S. Astakhova, V. P. Nikolaenko. - Moscow: E-noto, 2021. -800c

8. Practical guide to emergency ophthalmology: algorithms for the approach to providing emergency care in ophthalmology, ed. E.-L. Shirodkar, G.S. Williams; translation from English edited by I.A. Loskutova. – M.: GEOTARMEDIA, 2022-304 p. 9. Directory of an ophthalmologist / Kh.P. Takhchidi, N.A. Gavrilova, N.S. Gadzhieva and others - M.: GEOTAR-Media, 2021-224c

Information support of the discipline

a) software::

1. Microsoft Office
2. Multimedia guide (Atlas of ophthalmology)
3. Jaypee's Video Atlas of Ophthalmic Surgery. Second Edition. Includes 16 Interactive DVD-ROMS Duration approx 35 hrs. (Video LIX)

б) Databases and search engines::

1. TUIS
2. Scientific electronic library <http://elibrary.ru/>
3. All the news of ophthalmology www.eyenews.ru
4. Russian ophthalmology online www.eyepress.ru
5. medical portal glazamed.ru

6. download books on ophthalmology <http://www.booksmed.com/oftalmologiya/>

Internet sources:

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:

- RUDN Electronic Library System (RUDN ELS) <http://lib.rudn.ru/MegaPro/Web>
- EL "University Library Online" <http://www.biblioclub.ru>
- EL "Yurayt" <http://www.biblio-online.ru>
- EL "Student Consultant" www.studentlibrary.ru
- EL "Lan" <http://e.lanbook.com/>
- EL "Trinity Bridge"

2. Databases and search engines:

- electronic foundation of legal and normative-technical documentation <http://docs.cntd.ru/>
- Yandex search engine <https://www.yandex.ru/>
- Google search engine <https://www.google.ru/>
- Scopus abstract database <http://www.elsevierscience.ru/products/scopus/>

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

[Курс: Офтальмология для направления подготовки 31.05.03 «Стоматология» \(rudn.ru\)](#)

* The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

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 (competences in part) 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:

**Head of Ophthalmology
department, PhD, professor**

position, department

signature

M.A. Frolov

name and surname

**Assistant professor of
Ophthalmology department, PhD**

position, department

signature

A.M. Frolov

name and surname

HEAD OF EDUCATIONAL DEPARTMENT:

**Head of Ophthalmology
department, PhD, professor**

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HEAD OF HIGHER EDUCATION PROGRAMME:

Deputy MI director

position, department

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S.N. Razumova

name and surname