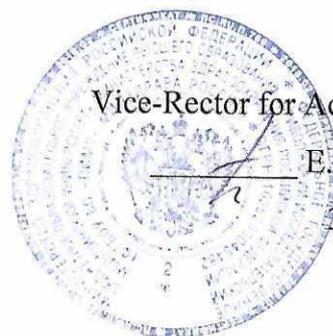


Federal State Budgetary Educational Institution of Higher Education  
"Privolzhsky Research Medical University"  
Ministry of Health of the Russian Federation



APPROVED

Vice-Rector for Academic Affairs

E.S. Bogomolova

31 August 2021

## WORKING PROGRAM

Name of the academic discipline: **OPHTHALMOLOGY**

Specialty: **31.05.01 GENERAL MEDICINE**  
(code, name)

Qualification: **GENERAL PRACTITIONER**

Department: **EYE DISEASES**

Mode of study: **FULL-TIME**

Labor intensity of the academic discipline: **108 academic hours**

Nizhny Novgorod  
2021

The working program has been developed in accordance with the Federal State Educational Standard for the specialty **31.05.01 GENERAL MEDICINE**,

*(code, name)*

approved by Order of the Ministry of Science and Higher Education of the Russian Federation No. 988 of August 12 2020.

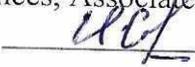
**Developers of the working program:**

Tatyana Ivanovna Poltanova. Candidate of Medical Sciences,  
Associate Professor of the Department of Eye Diseases, FSBEI HE PRMU MOH Russia

The program was reviewed and approved at the department meeting (protocol No.13, March 29, 2021r)

Head of the Department, Smetankin Igor Glebovich

Doctor of Medical Sciences, Associate Professor of the Department of Eye Diseases, FSBEI HE PRMU MOH Russia

 I.G. Smetankin.  
(signature)

March 29, 2021

AGREED

Deputy Head of EMA ph.d. of biology  Lovtsova L.V.

(signature)

March 29, 2021

**1. The purpose and objectives of mastering the academic discipline\_\_OPHTHALMOLOGY (hereinafter – the discipline):**

1.1. The purpose of mastering the discipline: participation in the formation of competencies: UC-1, GPC-4, GPC-5, GPC-6, PC -1, PC -2, PC -3, PC -4, PC -5, PC -6, PC -7, PC 22.

1.2. Tasks of the discipline:

1. As a result of mastering the discipline of ophthalmology, students should:

**Universal competence**

**UC-1.** Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy

**General Professional Competence**

**GPC-4.** Able to apply medical products, provided by the order of healthcare delivery, as well as examine patients for the purpose of determining the diagnosis

**GPC-5.** Able to assess morphofunctional, physiological conditions and pathological processes in the human body to solve professional problems

**GPC-6.** Able to: organize patient care, provide primary health care, ensure the organization of work and professional decision-making in case of medical emergency on the prehospital stage, in the conditions of emergency situations, epidemics and in centers of mass destruction

**Professional competence**

**PC -1** Able to assess the condition of a patient requiring medical treatment in the emergency form

**PC-2** Able to recognize conditions arising from sudden acute diseases, exacerbation of chronic diseases without obvious signs of a threat to the patient's life and requiring urgent medical care, recognize conditions that pose a threat to the patient's life including conditions of clinical death (stopping vital functions of the human body (blood circulation and/or respiration), requiring the provision of emergency medical care

**PC-3** Able to: provide emergency medical care to patients in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life, provide emergency medical care to patients in conditions that threaten the patient's life, including clinical death (suspension of vital functions the human body (circulation and/or respiration)

**PC-4** Able to use medicines and medical devices for providing medical care in emergency forms

**PC-5** Able to collect complaints, anamnesis of the patient's life and illness, conduct a complete physical examination of the patient (examination, palpation, percussion, auscultation), formulate a preliminary diagnosis and draw up a plan for laboratory and instrumental examinations of the patient

**PC-6** Able to send a patient to laboratory, instrumental examination, 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 providing medical care taking into account the standards of medical care, and also refer the patient for providing specialized medical care in an inpatient setting or in a day hospital if there are medical indications in accordance with the current procedures for the medical care delivery, clinical recommendations (treatment protocols) on the medical care delivery taking into account the standards of medical care

**PC-7** Able to: make a differential diagnosis with other diseases/conditions including emergencies, establish a diagnosis taking into account the current international statistical classification of diseases and related health problems (ICD)

**PC-22** Able to: maintain medical records, also in the electronic form in the MIS

### 1.3. Requirements to the deliverables of mastering the discipline

As a result of completing the discipline, the student should

#### 1. Know:

- methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis;
- clinical anatomy and topography of the organ of vision; physiology of the organ of vision, the relationship of the functional systems of the body and their regulation; etiology and mechanism of development of eye diseases;
- etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of the visual organ and its adnexal apparatus;
- methods of collecting anamnesis of life and diseases, complaints in patients with pathology of the visual organ, methods of examination; clinical picture, methods of diagnosis of the most common diseases of the visual organ; methods of laboratory and instrumental studies, medical indications for research, rules for the interpretation of their results; international statistical classification of diseases and health-related problems (ICD); ophthalmological conditions requiring medical care in an emergency form; the procedure for the use of medical devices in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care; principles of primary health care;
- rules for providing emergency medical care to patients with sudden acute diseases of the visual organ and its adnexal apparatus, exacerbation of chronic diseases without obvious signs of a threat to the patient's life;
- modern methods of using medicines, medical devices for diseases of the visual organ and its adnexal apparatus, in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care in the provision of medical care in an emergency form;
- mechanism of action of drugs, medical devices, medical indications and contraindications to their use; complications caused by their use;
- general issues of organization of medical care to the population with pathology of the visual organ; procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care;
- rules for registration of medical documentation in medical organizations that provide outpatient medical care, including at home when calling a medical professional.

#### 2. Be able to:

- to gain new knowledge based on analysis, synthesis, etc.; to collect data on complex scientific problems related to the professional field; to search for information and solutions based on actions, experiment and experience;
- to evaluate the main morphofunctional data, physiological conditions and pathological processes, the main pathophysiological syndromes of ophthalmic diseases;
- collect complaints, anamnesis of life and disease in patients with pathology of the visual organ and its adnexal apparatus, identify risk factors and causes of diseases of the visual organ; apply methods of examination and examination of patients; interpret the results of examination and examination of patients; diagnose patients with the most common ophthalmic pathology; formulate a preliminary diagnosis, make a plan for laboratory, instrumental and additional studies in patients with eye diseases and injuries in accordance with medical care procedures, clinical recommendations, taking into account medical care standards; refer patients to laboratory, instrumental and additional studies in accordance with current medical care procedures, clinical recommendations, taking into account standards of medical care; refer

patients for consultations with specialist doctors in accordance with the procedures for providing medical care, clinical recommendations, taking into account the standards of medical care; interpret and analyze the results of consultations by specialist doctors of patients; interpret and analyze the results of basic (clinical) and additional (laboratory, instrumental) examination methods; carry out differential diagnosis of diseases of the organ of vision and its appendages in patients; to identify clinical signs of sudden acute diseases in ophthalmology, conditions, exacerbations of chronic diseases without obvious signs of life-threatening, requiring medical care in an urgent form; to use medical devices in accordance with current medical procedures, clinical recommendations (treatment protocols) on the provision of medical care, care taking into account the standards of medical care;

- to organize the work of medical personnel in emergency conditions in ophthalmology, in emergency situations, epidemics and in foci of mass destruction; to use medicines and medical devices in the provision of medical care in emergency conditions in ophthalmology, to provide primary health care;

- to carry out measures to provide medical care to ophthalmological patients in an urgent form;

- prescribe medications, medical devices, taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care in an emergency form;

- fill out medical documentation, including in electronic form; work with personal data of patients and information constituting a medical secret; use information systems and the Internet information and telecommunications network in professional activities.

**3. Possess:** - practical experience in the study of the problem of professional activity with the use of analysis, synthesis and other methods of intellectual activity; development of an action strategy for solving professional problems;

- practical experience: assessment of the main morphofunctional data, the main pathophysiological syndromes of ophthalmic diseases in solving professional tasks;

- practical experience: collection of complaints, anamnesis of life and disease in patients with pathology of the visual organ and its adnexa, identification of risk factors and causes of diseases of the visual organ and its adnexa; examination of patients with eye diseases; diagnosis of the most common diseases in ophthalmology; identification of risk factors of major diseases; formulation of a preliminary diagnosis, drawing up a plan for instrumental, laboratory, additional studies, consultations of specialist doctors; referrals of patients for instrumental, laboratory, additional studies, consultations of specialist doctors in accordance with current medical care procedures, clinical recommendations, taking into account medical care standards; interpretation of data from additional (laboratory and instrumental) examinations of patients; making a preliminary diagnosis in accordance with the international statistical classification of diseases and health-related problems (ICD); differential diagnosis of diseases of the visual organ and its ; recognition of conditions arising from sudden acute eye diseases, exacerbation of chronic diseases without obvious signs of a threat to the patient's life and requiring urgent medical care; use of medical devices in accordance with current medical procedures, clinical recommendations (treatment protocols) on the provision of medical care, assistance taking into account the standards of medical care;

- methods of examination of patients and assessment of the severity of the condition of an ophthalmic patient, especially in cases requiring emergency care or intensive care; skills of providing medical care to patients with emergency conditions in ophthalmology, in emergency situations, epidemics and in foci of mass destruction in accordance with the procedures for providing medical care, clinical recommendations, taking into account the standards of medical care;

- practical experience to organize the work of medical personnel in emergency conditions in ophthalmology, in emergency situations, epidemics and in foci of mass destruction; to use

medicines and medical devices in the provision of medical care in emergency ophthalmic conditions, to provide primary health care.

**2. Position of the academic discipline in the structure of the General Educational Program of Higher Education (GEP HE) of the organization.**

**2.1.** The discipline \_\_\_\_\_ophthalmology\_\_\_\_\_ refers to the core part (or *the part formed by the participants of educational relations*) of Block 1 of GEP HE (Academic discipline index).

The discipline is taught in \_\_7\_\_ semester/ \_\_4\_\_ year of study.

**2.2. The following knowledge, skills and abilities formed by previous academic disciplines are required for mastering the discipline:**

- 1) Normal human anatomy – anatomy of the head and neck:
- 2). Pathological anatomy
- 3) Microbiology, virology
- 4) Normal physiology
- 5).. Pathological physiology
- 6). Pharmacology

**2.3. Mastering the discipline is required for forming the following knowledge, skills and abilities for subsequent academic disciplines:**

- 1). Neurology.
- 2) Hospital therapy,
- 3) endocrinology and internal medicine
- 3) Disaster medicine
- 4) Basics of Emergency care

**3. Deliverables of mastering the academic discipline and metrics of competence acquisition**

Mastering the discipline aims at acquiring the following universal (UC) or/and general professional (GPC) or/and professional (PC) competencies

№	Competence code	The content of the competence (or its part)	Code and name of the competence acquisition metric	As a result of mastering the discipline, the students should:		
				know	be able to	possess
1.	UK 1	Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy	1.1 Knows: methods of critical analysis and evaluation of modern scientific achievements; basic principles of critical analysis 1.2 Able to: gain new knowledge based on analysis, synthesis, etc.; collect data on complex scientific	basic principles and methods of information collection and analysis	to identify and systematize the main ideas in scientific texts; to critically evaluate any incoming information, regardless	skills of collecting, processing, analyzing and systematizing information on the research topic; skills of choosing methods and means of solving

			<p>problems related to the professional field; search for information and solutions based on action, experiment and experience</p> <p>1.3 Has practical experience: researching the problem of professional activity using analysis, synthesis and other methods of intellectual activity; developing an action strategy to solve professional problems</p>		<p>of the source, - to use in practice.</p>	<p>research problems.</p>
2.	GPC 4	<p>Able to apply medical products, provided by the order of healthcare delivery, as well as examine patients for the purpose of determining the diagnosis</p>	<p>4.2 Able to: collect complaints, anamnesis of life and disease of patients (their legal representatives), identify risk factors and causes of diseases; apply methods of examination and physical survey of patients; interpret the results of examination and physical examination of patients; diagnose the most common pathology among patients; identify risk factors for cancer; formulate a preliminary diagnosis, to make a plan for conducting laboratory, instrumental and additional investigations of patients in accordance with the</p>	<p>the main clinical manifestations of pathological conditions in ophthalmology - methods of instrumental examination of the organ of vision; - basics of choosing modern laboratory and instrumental diagnostics</p>	<p>- collect anamnesis of the disease and life; determine the need for special research methods and evaluate their results; - to conduct an instrumental examination of the eye; - to carry out laboratory tests and be able to interpret them, to examine for various diseases and traumatic injuries of</p>	<p>-the method of examination of a patient with a pathology of the visual organ; the method of drawing up an individual examination plan for making a preliminary diagnosis of the underlying and concomitant diseases, their complications - methods of modern laboratory and instrumental diagnostics (in hospital, polyclinic)</p>

			<p>procedures for providing medical care, clinical recommendations taking into account the standards of medical care; to refer patients to laboratory, instrumental and additional investigations in accordance with the current procedures for providing medical care, clinical recommendations, taking into account the standards of medical care; refer patients for consultations to medical specialists in accordance with the procedures of medical care, clinical recommendations taking into account the standards of medical care; to interpret and analyze the results of consultations by medical specialists of patients; to interpret and analyze the results of basic (clinical) and additional (laboratory, instrumental) examination methods; carry out differential diagnosis of diseases of patients; identify clinical signs of sudden acute diseases, conditions,</p>		<p>the visual organ; - formulate a diagnosis and define an action plan;</p>	<p>- algorithm of detailed clinical diagnosis - the main medical diagnostic and therapeutic techniques for providing first aid in case of emergency conditions of the visual organ</p>
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			<p>exacerbations of chronic diseases without obvious signs of life-threatening, requiring medical care in an urgent form; use medical devices in accordance with current medical procedures, clinical recommendations (treatment protocols) on the provision of medical care, assistance taking into account the standards of medical care</p> <p>4.3 Has practical experience in: collecting complaints, anamnesis of life and disease of patients (their legal representatives), identifying risk factors and causes of disease development; examination and physical survey of patients; diagnosis of the most common diseases; identification of risk factors for major oncological diseases; formulation of a preliminary diagnosis, drawing up a plan for instrumental, laboratory, additional investigations, consultations of specialist doctors;</p>			
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			referral of patients for instrumental, laboratory, additional investigations, consultations of specialist doctors in accordance with the current procedures for providing medical care, clinical recommendations taking into account the standards of medical care; interpretation of data from additional (laboratory and instrumental) examinations of patients; making a preliminary diagnosis in accordance with the international statistical classification of diseases and problems related to health (ICD); differential diagnosis of diseases; recognition of conditions arising from sudden acute diseases, exacerbation of chronic diseases without obvious signs of a threat to the patient's life and requiring urgent medical care; the use of medical devices in accordance with current medical procedures, clinical recommendations (treatment			
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			protocols) on the issues of medical care delivery, assistance taking into account the standards of medical care			
3.	GPC 5	Able to assess morphofunctional, physiological conditions and pathological processes in the human body to solve professional problems	<p>5.1 Knows: anatomy, histology, embryology, topographic anatomy, physiology, pathological anatomy and physiology of human organs and systems</p> <p>5.2 Able to: evaluate the basic morphological and functional data, physiological conditions and pathological processes in the human body</p> <p>5.3 Has practical experience in: assessment of basic morphological and functional data, physiological conditions and pathological processes in the human body when solving professional problems</p>	- the main pathophysiological syndromes of ophthalmic diseases, the main methods of diagnosis, treatment of persons with diseases of the visual organ, taking into account their age and gender groups	- to recognize the main pathophysiological syndromes of ophthalmic diseases, to prescribe reasonable and justified methods of diagnosis and treatment	- skills of recognition of pathophysiological syndromes of ophthalmic diseases
4.	GPC 6	Able to: organize patient care, provide primary health care, ensure the organization of work and professional decision-making in case of medical emergency on the prehospital stage, in the conditions of emergency	6.1 Knows: methods of collecting complaints and anamnesis of patients (their legal representatives); methods of physical examination of patients (examination, palpation, percussion,	- the main clinical manifestations and diagnostic signs of emergency conditions in ophthalmology - basic	- to carry out diagnostics and differential diagnostics of urgent conditions in ophthalmology - to assess the	- the main medical diagnostic and therapeutic techniques for providing first aid in case of emergency conditions of the visual organ

		situations, epidemics and in centers of mass destruction	auscultation); principles and methods of medical care delivery to patients in urgent conditions, in emergency situations, epidemics and in centers of mass destruction in accordance with the procedures for providing medical care, clinical recommendations taking into account the standards of medical care; clinical signs of major emergency conditions; principles of medical evacuation in emergency situations, epidemics and in centers of mass destruction; principles of work in centers of mass destruction; principles of organization of patient care, first aid treatment	methods of examination of an ophthalmological patient - the basics of providing first aid to adults and adolescents in emergency conditions in ophthalmology	severity of the condition, diagnose urgent ophthalmological conditions in adults and adolescents	
5.	PC 1	Able to assess the condition of a patient requiring medical treatment in the emergency form	1.1 Knows: etiology, pathogenesis and pathomorphology, clinical aspect, differential diagnosis, clinical features, complications and outcomes of diseases of internal organs; methodology for collecting complaints and anamnesis; physical examination technique (examination, palpation, percussion, auscultation); a list of laboratory and	- the main clinical manifestations and diagnostic signs of emergency conditions in ophthalmology, - the main methods of diagnosis of an ophthalmological	- collect anamnesis of the disease and life; determine the need for special research methods and evaluate their results; to carry out	-: skills of conducting a general examination of the organ of vision, examination of visual functions, examination of the eyeball by the main methods of examination of an ophthalmological

			<p>instrumental research methods for assessing the condition, the main medical indications for conducting research and interpreting the results of patients requiring medical care in the emergency form</p> <p>1.2 Able to: identify clinical signs of conditions requiring medical treatment in the emergency form</p>	<p>logical patient</p> <p>- basic medical techniques for providing first aid to patients with eye diseases and injuries</p>	<p>diagnostics and differential diagnostics of emergency conditions in ophthalmology</p>	<p>gical patient;</p> <p>- skills in interpreting the results of laboratory and instrumental diagnostic methods</p> <p>-the algorithm of a detailed clinical diagnosis</p> <p>- the main medical diagnostic and therapeutic techniques for providing first aid in case of emergency conditions of the visual organ</p>
6.	PC 2	<p>Able to recognize conditions arising from sudden acute diseases, exacerbation of chronic diseases without obvious signs of a threat to the patient's life and requiring urgent medical care, recognize conditions that pose a threat to the patient's life including conditions of clinical death (stopping vital functions of the human body (blood circulation and/or respiration), requiring the provision of emergency medical care</p>	<p>2.1 Knows: etiology, pathogenesis and pathomorphology, clinical picture, differential diagnosis, features of the course, complications and outcomes of diseases of internal organs; methods of collecting complaints and anamnesis in patients (their legal representatives); methods of physical examination of patients (examination, palpation, percussion, auscultation); a list of methods of laboratory and instrumental investigations to assess the patient's</p>	<p>- the main clinical manifestations of pathological conditions in ophthalmology leading to low vision and/or blindness, the conditions of their occurrence, methods of early diagnosis</p> <p>- the main ophthalmological diseases</p>	<p>analyze patient complaints, anamnesis data, the results of the main diagnostic methods in ophthalmology to identify the main pathological symptoms and syndromes of ophthalmic diseases in patients, diagnose urgent and</p>	<p>- to identify the main pathological symptoms and syndromes of ophthalmic diseases in patients -the skills of making a preliminary diagnosis based on complaints, anamnesis, examination results and the results of instrumental and laboratory studies</p> <p>- the main medical</p>

			<p>condition, the main medical indications for conducting research and interpreting the results; clinical signs of sudden cessation of blood circulation and/ or respiration</p> <p>2.2 Can: identify clinical signs of conditions requiring emergency medical care; identify conditions requiring emergency medical care, including clinical signs of sudden cessation of blood circulation and respiration</p>	<p>that can cause severe complications and (or) death and the main methods of treatment and emergency care for them, the technique of stopping bleeding from the organ of vision and its accessory apparatus,</p>	<p>life-threatening conditions of the visual organ, provide emergency care for them.</p>	<p>diagnostic and therapeutic techniques for providing first aid in urgent and acute conditions</p>
7.	PC 3	<p>Able to: provide emergency medical care to patients in case of sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life, provide emergency medical care to patients in conditions that threaten the patient's life, including clinical death (suspension of vital functions the human body (circulation and/or respiration)</p>	<p>3.1 Knows: basic cardiopulmonary resuscitation rules; principles of operation of devices for external electropulse therapy (defibrillation); rules for performing external electrical impulse therapy (defibrillation) in case of sudden cessation of blood circulation and / or respiration</p> <p>3.2 Able to: perform measures to provide medical care in urgent and emergency forms; basic cardiopulmonary resuscitation in combination with electrical impulse therapy (defibrillation)</p>	<p>- rules and procedure for performing medical manipulations (washing of the conjunctival cavity, removal of superficial foreign bodies, instillation of eye drops, ointments, techniques for stopping bleeding from the visual organ and its adnexal apparatus, orbit area,</p>	<p>- to carry out washing of the conjunctival cavity, to remove superficial foreign bodies of the conjunctiva, instillation of eye drops, ointments, , the technique of stopping bleeding from the visual organ and its adnexal apparatus, the orbit area, to interpret</p>	<p>- basic medical diagnostic and therapeutic techniques for providing first aid in urgent and acute conditions (skills of washing the conjunctival cavity, removal of surface foreign bodies, instillation of eye drops, ointments, technique of stopping bleeding from the organ of vision and its adnexal</p>

				methods of radiolocation of intraocular foreign bodies (interpretation of data))	the results of radiological and other instrumental studies	apparatus, the orbit area)
8.	PC-4	Able to use medicines and medical devices for providing medical care in emergency forms	4.1 Knows: modern methods of using medicines, medical devices for diseases and conditions in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care taking into account the standards of medical care in the provision of medical care in emergency or urgent forms; the mechanism of action of drugs, medical devices, medical indications and contraindications to their use; complications caused by their use; principles of operation of devices for external electric pulse therapy (defibrillation); rules for performing external electric pulse therapy (defibrillation) in case of sudden	the main clinical manifestations of pathological conditions in ophthalmology leading to low vision and/or blindness, the conditions of their occurrence , methods of prevention and the timing of dispensary observation -basic methods of providing medical emergency care for eye pathology - the main medicines and methods of their administration for diseases and	-analyze patient complaints , anamnesis data, increased risk factors for the development of the disease, the results of the main diagnostic methods in ophthalmology, - prescribe medications for diseases and damage to the organ of vision	the main methods of examination in ophthalmology -skills in interpreting the results of the examination and the results of instrumental and laboratory studies - the main medical diagnostic and therapeutic techniques for providing first aid in urgent and acute conditions

			<p>cessation of blood circulation and / or respiration</p> <p>4.2 Able to: prescribe medicines, medical devices taking into account the diagnosis, age and clinical picture of the disease in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the medical care delivery in emergency or urgent forms</p>	<p>damage to the organ of vision</p>		
9.	PC-5	<p>Able to collect complaints, anamnesis of the patient's life and illness, conduct a complete physical examination of the patient (examination, palpation, percussion, auscultation), formulate a preliminary diagnosis and draw up a plan for laboratory and instrumental examinations of the patient</p>	<p>5.1 Knows: the legislation of the Russian Federation in the field of health care, regulations and other documents that determine the activities of medical organizations and healthcare workers; method of collecting complaints, anamnesis of life and disease of the patient; a technique for a complete physical examination of the patient (examination, palpation, percussion, auscultation); etiology, pathogenesis and pathomorphology, clinical aspect, differential diagnosis, clinical features, complications and outcomes of</p>	<p>- the main clinical manifestations of pathological conditions in ophthalmology</p> <p>- the methodology of the survey, examination of the eyeball and its accessory apparatus, clinical examination, modern methods of laboratory and instrumental studies</p>	<p>analyze patient complaints, anamnesis data, the results of the main diagnostic methods in ophthalmology</p> <p>- conduct a survey and examination of the eyeball and its accessory apparatus, clinical examination,</p> <p>-interpret the results of laboratory and instrumental research, including</p>	<p>the main methods of examination in ophthalmology; the skills of conducting a general examination of the organ of vision, the study of visual functions, examination of the fundus</p> <p>- skills in interpreting the results of laboratory, instrumental diagnostic methods;</p> <p>--an algorithm for making a detailed clinical diagnosis</p>

			<p>diseases of internal organs; patterns of functioning of a healthy human body and mechanisms for ensuring health from the standpoint of the theory of functional systems; features of the regulation of the functional systems of the human body in pathological processes; methods of laboratory and instrumental examinations for assessing the state of health, medical indications for conducting investigations, rules for interpreting their results</p> <p>5.2 Able to: collect complaints, anamnesis of life and disease of the patient and analyze the information received; conduct a complete physical examination of the patient (examination, palpation, percussion, auscultation) and interpret its results; determine the sequence of volume, content and sequence of diagnostic measures incl. modern digital technologies</p>		<p>diagnostic studies using modern technical means and digital technologies"),</p>	
10.	PC-6	<p>Able to send a patient to laboratory, instrumental examination, to a consultation with specialist doctors if there are</p>	<p>6.1 Knows: general issues of organizing medical care for the population, methods of laboratory and instrumental examinations to assess the state of</p>	<p>- pathomorphological signs of acute and urgent conditions</p>	<p>- collect anamnesis of the disease and life; -determine the need</p>	<p>- skills of collecting anamnesis and clinical examination of</p>

		<p>medical indications in accordance with the current procedures for the provision of medical care, clinical recommendations (treatment protocols) on providing medical care taking into account the standards of medical care, and also refer the patient for providing specialized medical care in an inpatient setting or in a day hospital if there are medical indications in accordance with the current procedures for the medical care delivery, clinical recommendations (treatment protocols) on the medical care delivery taking into account the standards of medical care</p>	<p>health, medical indications for conducting examinations, rules for interpreting their results; procedures for the provision of medical care, clinical recommendations (treatment protocols) on the provision of medical care, standards of medical care</p> <p>6.2 Able to: justify the need and scope of laboratory examination of the patient; justify the need and scope of instrumental examination of the patient; justify the need to refer the patient for consultations with specialist doctors; determine medical indications for the provision of emergency, including emergency specialized, medical care</p>	<p>in ophthalmology</p> <ul style="list-style-type: none"> <li>- theoretical and practical issues of laboratory diagnostics ;</li> <li>- methods of instrumental examination of the organ of vision;</li> <li>- basics of selection and indications for modern methods of laboratory and instrumental diagnostics</li> </ul>	<p>for special research methods and evaluate their results; -to make an algorithm for differential diagnosis in ocular pathology; -to diagnose the disease, -- determine indications for the provision of emergency , including emergency specialized care</p>	<p>patients with pathology of the organ of vision, -possess an algorithm for making a clinical diagnosis , taking into account ICD -methods of modern laboratory and instrumental diagnostics (in hospital, polyclinic)</p>
11.	PC-7	<p>Able to: make a differential diagnosis with other diseases/conditions including emergencies, establish a diagnosis taking into account the current international statistical classification of diseases and related health problems (ICD)</p>	<p>1 Knows: etiology, pathogenesis and pathomorphology, clinical aspect, differential diagnosis, clinical features, complications and outcomes of diseases of internal organs; methods of laboratory and instrumental examinations for assessing the state of health, medical indications for conducting examinations, rules for interpreting their results; ICD</p> <p>7.2 Able to: analyze the results of the patient's examination,</p>	<ul style="list-style-type: none"> <li>- etiology, pathogenesis and pathomorphology,</li> <li>- the main, leading symptoms and syndromes of damage to the organ of vision, the main stages of the pathogenesis of diseases</li> </ul>	<ul style="list-style-type: none"> <li>- identify and clinically interpret pathological syndromes and symptoms of diseases of the eye and appendage apparatus</li> <li>- to interpret modern methods of laboratory and</li> </ul>	<ul style="list-style-type: none"> <li>-skills of collecting anamnesis and clinical examination of patients with pathology of the organ of vision, -possess an algorithm for making a clinical diagnosis , taking into account ICD</li> </ul>

			<p>if necessary, justify and plan the scope of additional examinations; interpret the results of collecting information about the patient's disease; interpret the data obtained during the laboratory examination of the patient; interpret the data obtained during the instrumental examination of the patient; interpret the data obtained during consultations of the patient by medical specialists; to carry out differential diagnostics of diseases of internal organs from other diseases</p>	<p>of the organ of vision and the basic concepts and terms used in ophthalmology, modern classification of diseases differential diagnostic significance of the main symptoms and syndromes</p>	<p>instrumental research to carry out diagnostics and differential diagnostics</p>	
12.	PC-22	<p>Able to: maintain medical records, also in the electronic form in the MIS</p>	<p>22.1 Knows: the legislation of the Russian Federation in the field of health protection, regulatory legal acts and other documents defining the activities of medical organizations and medical workers; rules for working in information systems and information and telecommunications network "the Internet"; rules for registration of medical documentation in medical organizations providing outpatient medical care including medical worker's home visits</p> <p>22.2 Able to: fill out medical documentation including in the electronic form in MIS; work with personal data of</p>	<p>- rules for registration of medical documentation (outpatient patient's card, medical history, rules for registration of referral for laboratory and other studies, to a specialist doctor)</p>	<p>- to issue the necessary medical documentation, including in electronic form within the framework of the MIS"., -to determine the indications and refer the patient to laboratory and other studies, to a specialist doctor - make a report on</p>	<p>the main methods of examination in ophthalmology; - skills in interpreting the results of laboratory, instrumental diagnostic methods; - the algorithm of a detailed clinical diagnosis</p>

			patients and information constituting a medical secret; use information systems and information and telecommunication network, the Internet, in professional activities		your work;	
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**4. Sections of the academic discipline and competencies that are formed when mastering them**

№	Competence code	Section name of the discipline	The content of the section in teaching units
1	UK-1, GPC- 4, PC-4, PC-5, PC-6	Clinical anatomy, physiology, methods of examination of the visual organ and its adnexal apparatus	<ul style="list-style-type: none"> <li>- The organ of vision in anatomical and physiological terms</li> <li>- embryogenesis of the adnexal apparatus of the eye and orbit               <ul style="list-style-type: none"> <li>- anatomy of the bone orbit</li> <li>- anatomy of the adnexal apparatus of the eye</li> <li>- fibrous capsule of the eye and its purpose</li> </ul> </li> <li>- anatomy and histology of the vascular membrane of the eye               <ul style="list-style-type: none"> <li>- anatomy and histology of the retina</li> <li>- vitreous anatomy</li> <li>- anatomy of the lens –</li> </ul> </li> <li>- anatomy of the optic nerve and the visual pathway</li> </ul> <p>The visual analyzer is the main organ of cognition of the external world, anatomical and physiological features of the visual pathway</p> <ul style="list-style-type: none"> <li>- the concept of central vision (visual acuity, visual angle)               <ul style="list-style-type: none"> <li>- peripheral vision</li> <li>- visual adaptation</li> <li>- color perception</li> <li>- binocular vision</li> </ul> </li> <li>- external examination of the eye and its appendages</li> <li>- examination of the anterior segment of the eyeball</li> <li>- study of the transparency of refractive and light-conducting media of the eye               <ul style="list-style-type: none"> <li>- methods and principles of ophthalmoscopy</li> <li>- biomicroscopy</li> <li>- methods of studying intraocular pressure</li> </ul> </li> <li>- ultrasound methods of eye and orbit examination</li> <li>- radiation research methods in ophthalmology</li> </ul>
2	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Diseases of the orbit, eyelids, conjunctiva, lacrimal organs	<p>General semiotics and classification</p> <ul style="list-style-type: none"> <li>- anomalies of eyelid development</li> <li>- inflammatory diseases of the eyelids: blepharitis, sty, chalazion (etiopathogenesis, clinic, diagnosis, treatment methods)</li> <li>- inflammatory diseases of the conjunctiva (etiopathogenesis, classification, clinic, diagnosis, treatment)</li> <li>- inflammatory diseases of the orbit (etiopathogenesis, classification, clinic, diagnosis, treatment)</li> </ul>
3	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7,	Diseases of the cornea	<p>Keratitis: the relevance of the problem</p> <ul style="list-style-type: none"> <li>- etiopathogenesis</li> <li>- classification</li> </ul> <p>-clinic of bacterial and herpetic keratitis</p>

	PC-22		- diagnostics - treatment prevention
4	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Pathology of the vascular tract.	Inflammatory diseases of the uveal tract of the eye (etiopathogenesis, classification, diagnosis) - anterior uveitis, diagnostic signs, principles of treatment - posterior uveitis, main clinical manifestations, treatment. Tumors of the uveal tract of the eye. - early diagnosis - principles of treatment - criteria of cure, prognosis
5	GPC- 4, PC-5, PC-6, PC-7, PC-22	Pathology of the lens.	Cataract, definition, relevance of the problem. Congenital and acquired cataracts - etiopathogenesis - classification - clinic - diagnostics - conservative methods of treatment - surgical, including microinvasive methods of treatment - aphakia, diagnostic signs, correction methods
6	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Glaucoma	Hydrodynamics of the eye. Glaucoma: classification, etiopathogenesis of various forms of glaucoma - - pathogenesis of glaucoma opticoneuropathy - clinic of open-angle and closed-angle forms of glaucoma - methods of early diagnosis --conservative treatment, methods of surgical treatment of open- and closed-angle forms of glaucoma. - congenital glaucoma, methods of treatment, prognosis for visual functions. - secondary glaucoma, treatment methods
7	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Ocular traumas	Modern classification of visual organ injuries - mechanical open injury of the visual organ (injuries of the orbit, the adnexal apparatus of the eye, the eyeball): absolute and relative signs, clinic, diagnosis, complications. - - intraocular foreign bodies (classification, metals) - the concept of sympathetic inflammation (etiopathogenesis, clinic, treatment, prevention). - chemical burns of the visual organ (acid, alkaline). - thermal burns of the visual organ - emergency measures for various types of burn injury.
8	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Pathology of the retina.	Classification of dystrophic lesions of the retina. - hereditary and acquired retinal dystrophy (etiopathogenesis, classification, clinic, diagnosis, complications, treatment). - retinal detachment (etiopathogenesis, clinic, classification) - surgical methods for the treatment of retinal detachment. Vascular diseases of the retina - occlusion of the central retinal artery, etiopathogenesis, clinical signs, diagnosis, complications, urgent measures. - thrombosis of the central retinal vein: etiopathogenesis, clinical signs, diagnosis, complications, urgent measures.

### 5. Volume of the academic discipline and types of academic work

Type of educational work	Labor intensity		Labor intensity (AH) in semesters			
	volume in credit units (CU)	volume in academic hours (AH)	VII			
Classroom work, including		66	66			

Lectures (L)	0,38	14	20			
Laboratory practicum (LP)*						
Practicals (P)	1.45	52	52			
Seminars (S)						
Student's individual work (SIW)	1.17	42	42			
Mid-term assessment						
credit/exam ( <i>specify the type</i> )		credit				
TOTAL LABOR INTENSITY	3	108	108			

## 6. Content of the academic discipline

### 6.1. Sections of the discipline and types of academic work

№	Name of the section of the academic discipline	Types of academic work* (in AH)					
		L	LP	P	S	SIW	total
1	Ophthalmology	14		52		42	108
1.1	Clinical anatomy of the organ of vision and its appendages	2		5		3	
1.2	Physiology of the organ of vision			5		2	
1.3	Methods of eye examination			5			
1.4	Diseases of the orbit, lacrimal apparatus	2		2		3	
1.5	Diseases of the eyelids, conjunctiva			5		3	
1.6	Diseases of the cornea	2		5		2	
1.7	Diseases of the uveal tract			3		4	
1.8	Pathology of the lens	2		2		2	
1.9	Glaucoma	2		5		5	
1.10	Vascular diseases of the retina	2		3		5	
1.11	Pathology of the retina and vitreous body			2		3	
1.12	Mechanical damage to the organ of vision	2		5		5	
1.13	Thermal and radiation damage to the visual organ			5		5	
	TOTAL	14		52		48	108

\* - L – lectures; LP – laboratory practicum; P – practicals; S – seminars; SIW – student's individual work.

### 6.2. Thematic schedule of educational work types:

#### 6.2.1 Thematic schedule of lectures

№	Name of lecture topics	Volume in AH	
		VII Semester	semester
1	Introduction to ophthalmology. Clinical anatomy of the visual organ and its adnexal apparatus	0.5 AH 1.5 AH	
2	Pathology of the orbit and diseases of the lacrimal organs of the eye	2.0 AH	
3	Diseases of the eyelids.. Pathology of the conjunctiva		
4	Pathology of the cornea.	2.0 AH	

5	Diseases of the uveal tract		
6	Pathology of the lens	2.0 AH	
7	Glaucoma	2.0 AH	
8	Mechanical damage to the organ of vision	2.0 AH	
9	Thermal and radiation damage to the visual organ	2.0 AH	
10	Vascular diseases of the retina		
	TOTAL (total - AH)	14 AH	

6.2.2. The thematic plan of laboratory practicums (*if this type of classes is stipulated in the curriculum*)

6.2.3. Thematic plan of practicals

№	Name of practicals	Volume in AH	
		VII semester	semester
1	Anatomy and histology of the eye.	5AH	
2	Physiology of the organ of vision, clinical refraction, its anomalies, methods of correction. Astigmatism.	4 AH 1 AH	
3	Clinical examination of the patients with the pathology of the eye and its additional structures	5 AH	
4	Diseases of the orbit, lacrimal apparatus, Pathology of the eyelids and conjunctiva	3 AH 2 AH	
5	Diseases of the cornea. Pathology of the uveal tract	5 AH 2 AH	
6	Pathology of the lens: cataract. Surgical methods of its treatment	5 AH	
7	Glaucoma. Intraocular pressure measurement	5 AH	
8	Ocular trauma. Chemical, thermal burns.	5 AH	
9	Mechanical damage to the organ of vision	5 AH	
10	Retinal vascular disorders	5 AH	
	TOTAL (total - AH)	52 AH	

6.2.4. Thematic plan of seminars (*if this type of classes is stipulated in the curriculum*)

№	Name of seminar topics	Volume in AH	
		semester	semester
	TOTAL (total - AH)		

6.2.5. Types and topics of student's individual work (SIW)

№	Types and topics of SIW	Volume in AH	
		VII semester	semester
1	Working with literature sources and electronic educational resources: Embryonic development of the organ of vision. Clinical anatomy of the organ of vision and its adnexa.	3 AH	
2	Working with literature sources and electronic educational resources: Refractive errors, types, classification. Diagnostic methods. Methods of correction, prevention.	2 AH	
3	Work with electronic educational resources posted on the educational portal of the University: Pathology of the eyelids and conjunctiva.	2 AH	
4	Work with electronic educational resources posted on the educational portal of the University: Pathology of the uveal tract	2 AH	
5	Registration of the medical history: Topics: Diseases of the orbit, lacrimal organs. Diseases of the eyelids, conjunctiva, cornea, uveal tract Pathology of the lens. Glaucoma.  Writing and defending the medical history of a patient with a pathology of the organ of vision according to the proposed plan with a detailed clinical diagnosis, differential diagnosis and treatment recommendations	10 AH	
6	Report. Infectious lesions of the orbit. Inflammation of the bone walls of the orbit, anterior and posterior periostitis. Subperiosteal abscess of the orbit. Tenonites. Phlegmon of the orbit. Diagnostics. Urgent measures. Principles of treatment. Complications.	5 AH	
7	Preparation for participation in the lesson in an interactive form: Topic: mechanical damage to the eye. non-penetrating wounds and penetrating wounds of the eyelids. Eyelid tears. Conjunctival injuries. Surgical treatment of eyelid and conjunctival wounds. Damage to the eye socket. General characteristics, classification. Damage to bone walls, soft tissues. Radiation research methods. Complications. Principles of treatment. Contusion of the eyeball. Etiopathogenesis. Clinical variants of injuries. Degrees of severity. Differential diagnosis. The consequences of contusion injuries. Treatment	5AH	
8	Working with electronic educational resources posted on the educational portal of the University: Burns and frostbite of the visual organ	3AH	
9	Preparation of the abstract, essay. Topic: Diseases of the retina and vitreous. Retinal detachment, classification, peripheral retinal dystrophy. Hemophthalmos. Classification. Risk factors, methods of diagnosis and treatment.	5 AH	

10	Preparation of a report on the topic: Diabetic retinopathy. The organ of vision in hypertension. Acute circulatory disorders of retinal vessels.	5 AH	
	TOTAL (total - AH)	42 AH	

### 7. Types of assessment formats for ongoing monitoring and mid-term assessment

№	Se mes ter No.	Types of control	Name of section of academic discipline	Competence codes	Assessment formats		
					types	number of test questions	number of test task options
1.		Current monitoring	Anatomy of the eye	UK-1, GPC-4, PC-4, PC-5, PC-6	Test tasks	30	Unlimited (during computer testing)
			Refraction of the eye	UK-1, GPC-4, PC-4, PC-5, PC-6	Test tasks	25	Unlimited
			Diseases of the eyelids, pathology of the conjunctiva, lacrimal tract.	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Test tasks Clinical cases	30 1	Unlimited 5
			Diseases of the cornea.	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Test tasks Clinical cases	30 1	Unlimited 5
			Pathology of the uveal tract	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Test tasks Clinical cases	20 1	Unlimited 5
			Pathology of the lens	GPC- 4, PC-5, PC-6, PC-7, PC-22	Test tasks	20	Unlimited
		Monitoring the student's individual work	Glaucoma	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Test tasks Clinical cases	25 1	Unlimited 5
			Eye injuries	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-22	Test tasks Clinical cases	30 1	Unlimited 5
			Pathology of the retina	GPC- 4, PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-	Test tasks Essay	25 1	Unlimited

					7, PC-22	Report	1	
2.		Mid-term assessment	Credit: Control question Situational tasks	All sections of the discipline		control question clinical cases	2 1	30 25

## 8. Educational, methodological and informational support for mastering the academic discipline (printed, electronic publications, the Internet and other network resources)

### 8.1. Key literature references

№	Name according to bibliographic requirements	Number of copies	
		at the department	in the library
1	Alekseev V.N. Ophthalmology [Electronic resource] : textbook / Alekseev V.N., Astakhov Yu.S., Basinsky S.N. et al. ; Edited by E.A. Egorov - M. : GEOTAR-Media, 2016. – <a href="http://www.studmedlib.ru/book/ISBN9785970436776.html">http://www.studmedlib.ru/book/ISBN9785970436776.html</a>	-	30
2	Kopaeva V.G. Eye diseases: textbook for medical students / ed. by V.G. Kopaeva.- 2nd ed., ispr.- M.: Medicine, 2012.-560s.	1	30
3	Sidorenko E.I., Ophthalmology : textbook / edited by E. I. Sidorenko. - 4th ed., ispr. and add. - M. : GEOTAR-Media, 2018. - 656 p. : ill.		

### 8.2. Further reading

№	Name according to bibliographic requirements	Number of copies	
		at the department	in the library
1	Avetisov S.E. Ophthalmology : National guidelines / edited by S.E. Avetisov, E.A. Egorov, L.K. Moshetova, V.V. Neroev, H.P. Takhchidi ; Publishing house of the organization Society of Ophthalmologists of Russia. – M. : GEOTAR-Media, 2008. – 944 p. : il. tv. + 1 CD-Rom. – (National guidelines)		
2	Avetisov S.E. Atlas of ophthalmology : textbook for students of medical universities / G. K.Kriglstein, K.P. Ionescu-Saypers, M. Severin, M. A. Vobig ; ed. S. E. Avetisov. – M.: Medical Information Agency, 2009. – 432 p.		
3	Avetisov, E.S. Fundamentals of ophthalmology : textbook / E.S. Avetisov, V.G. Kopaeva; Avetisov E.S. ; Kopaeva V.G. - Moscow : Medicine, 2012. - - 552 p. - ISBN ISBN 978-5-225-10009-4. - Text : electronic. - URL: <a href="https://www.studentlibrary.ru/book/ISBN9785225100094.html">https://www.studentlibrary.ru/book/ISBN9785225100094.html</a>		
4	Gundorova R.A. Eye injuries in emergency situations / R.A. Gundorova, V. V. Kashnikov. – N.Novgorod : SB RAMS, 2002. – 240 p.		
5	Gundorova R.A. Eye injuries / general ed. R. Gundorova, V. V. Neroev, V. V. Kashnikov.– 2nd ed., reprint, and supplement - M : GEOTAR-Media, 2014. – 560 s		
6	Egorov, E.A. Emergency ophthalmology: textbook /E.A. Egorov, A.V. Svirin, E.G. Rybakova et al. – M.: GEOTAR-MED, 2006. – 184 p.		
7	Egorov, E.A. Eye diseases : textbook [electronic resource] / E.A. Egorov, L.M. Epifanova; Egorov E.A. ; Epifanova L.M. - Moscow : GEOTAR-Media, 2013. - 160 p. - Text : electronic. - URL: <a href="https://www.studentlibrary.ru/book/ISBN9785970426029.html">https://www.studentlibrary.ru/book/ISBN9785970426029.html</a>		
8	Evgrafov, It Is. I. Cataracts / E. I. Evgrafov, IO. It is. Batmanov. - M.: Med., 2005. - 368 S.		

9	Katsnelson, L.A. Clinical atlas of fundus pathology (illustrated reference) / L.A. Katsnelson, V.S. Lysenko, T.I. Balishanskaya - M.: GEOTAR-MED, 2004. -120c.	
10	Nesterov, Huh.P. Glaucoma/A. P. Nesterov. - M: Medicine, 1995. - 356 C.	
11	Morozov V.I. Diseases of the visual pathway. Clinic. Diagnostics. Treatment / V. I. Morozov, A. A. Yakovlev. – M. : BINOM, 2010. – 680 p.	
12	Somov, E.E. Medicines in modern ophthalmological practice /E.E. Somov. – M.: Medpress-inform, 2003. – 64 p.	
13	Sidorenko E.I.Ophthalmology [Electronic resource] : textbook / edited by E. I. Sidorenko. - 3rd ed., reprint. and additional - M. : GEOTAR-Media, 2015.- - <a href="http://www.studmedlib.ru/book/ISBN9785970433928.html">http://www.studmedlib.ru/book/ISBN9785970433928.html</a>	
14	Svirin A.V. Emergency ophthalmology : a textbook for universities / A.V. Svirin, E. G. Rybakova, T. V. Stavitskaya, T. M. Volobueva, T. B. Romanova, edited by E. A. Egorov. – 2nd ed., ispr. – M. : GEOTAR-Media, 2007. – 184 p.	

### 8.3. Electronic educational resources for teaching academic subjects

#### 8.3.1. Internal Electronic Library System of the University (IELSU)

№	Name of the electronic resource	Brief description (content)	Access conditions	Number of users
	Internal Electronic Library System (EBS) of PIMU	The works of the staff of the ADMU (textbooks, manuals, collections of tasks, manuals, laboratory work, monographs, etc.)	Access by individual login and password from any computer and mobile device	Unlimited

#### 8.3.2. Electronic educational resources acquired by the University

№	Name of the electronic resource	Brief description (content)	Access conditions	Number of users
1	Database "Medicine. Healthcare (VO) and "Medicine. Healthcare (SPO)" as part of the database "Electronic library of a technical university of a technical university (EBS "Student Consultant"	Textbooks and teaching aids for higher medical and pharmaceutical education.	Access by individual login and password from any computer and mobile device	Unlimited
2	Database "Doctor's consultant. Electronic Medical Library"	National guidelines, clinical guidelines, textbooks, monographs, atlases, reference books, etc.	Access by individual login and password from any computer and mobile device	Unlimited
3	Database "Electronic library system "Bukap"	Educational and scientific medical literature of Russian publishers, including translated editions. The collection of subscription publications is formed point-by-point.	Access by individual login and password from any computer and mobile device	Unlimited
4	Electronic periodicals as part of the database "SCIENTIFIC ELECTRONIC LIBRARY eLibrary"	Electronic medical journals	Access by individual login and password from any computer and	Unlimited

			mobile device	
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### 8.3.3 Open access resources

№	Name of the electronic resource	Brief description (content)	Access conditions
	Federal Electronic Medical Library of the Central Medical Library of the I.M. Sechenov First Moscow State Medical University <a href="http://feml.scsmr.rssi.ru/feml">http://feml.scsmr.rssi.ru/feml</a>	FEML includes both full-text electronic copies of printed publications and independent original electronic publications that have no analogues recorded on traditional media.	
	Open Access Scientific Library "CyberLeninka" <a href="http://cyberleninka.ru/about">http://cyberleninka.ru/about</a>	The library is equipped with full texts of articles published in scientific journals of Russia and neighboring countries, including in journals included in the list of the Higher Attestation Commission of the Russian Federation. Electronic copies of the documents are publicly available with the possibility of downloading.	

## 9. Material and technical support for mastering an academic discipline

### 9.1. List of premises for classroom activities for the discipline

The teaching of the discipline is carried out on the basis of the state health institution – State Budgetary Healthcare Institution of the Nizhny Novgorod region Regional Clinical Hospital named after N.A. Semashko

The department has 3 study rooms, and the lecture hall of the hospital is used for reading individual lectures. Use of wards, laboratories, laboratory and instrumental equipment, study rooms for students' work

### 9.2. List of equipment for classroom activities for the discipline

#### 1. Technical means.

2. Sets of ophthalmoscopes

3. A set of skiascopic rulers

4. Electrophthalmoscope

5. Exophthalmometer

6. Sets of optical glasses

7. The perimeter of the Foerster

8. Projection perimeter

9. Rota apparatus

10. Slit lamps

11. Tonometers

12. Ophthalmometer

#### 2. Stands.

1. The eye in general pathology

2. Classification of burns

3. Damage to the organ of vision

4. Glaucoma

5. Classification of primary glaucoma

6. The structure of the front camera angle

1. Multimedia complex (laptop, projector, screen), TV, video camera, slide show, video recorder, PC, video and DVD players, monitors. Sets of tables/multimedia visual materials on various sections of the discipline. Videos. Situational tasks, test tasks on the topics being studied.

### 9.3. A set of licensed and freely distributed software, including domestic production

<b>Item no.</b>	<b>Software</b>	<b>number of licenses</b>	<b>Type of software</b>	<b>Manufacturer</b>	<b>Number in the unified register of Russian software</b>	<b>Contract No. and date</b>
1	Wtware	100	Thin Client Operating System	Kovalev Andrey Alexandrovich	1960	2471/05-18 from 28.05.2018
2	MyOffice is Standard. A corporate user license for educational organizations, with no expiration date, with the right to receive updates for 1 year.	220	Office Application	LLC "NEW CLOUD TECHNOLOGIES"	283	without limitation, with the right to receive updates for 1 year.
3	LibreOffice		Office Application	The Document Foundation	Freely distributed software	
4	Windows 10 Education	700	Operating systems	Microsoft	Azure Dev Tools for Teaching Subscription	
5	Yandex. Browser		Browser	«Yandex»	3722	
6	Subscription to MS Office Pro for 170 PCs for FGBOU VO "PIMU" of the Ministry of Health of Russia	170	Office Application	Microsoft		23618/HN100 30 LLC "Softline Trade" from 04.12.2020

**10. List of changes to the working program (to be filled out by the template)**

Federal State Budgetary Educational Institution of Higher Education  
"Privolzhsky Research Medical University"  
Ministry of Health of the Russian Federation  
(FSBEI HE "PRMU" of the Ministry of Health of Russia)

Department of eye diseases

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**CHANGE REGISTRATION SHEET**

working program for the academic discipline

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*ophthalmology*

Field of study / specialty / scientific specialty: **31.05.01 GENERAL MEDICINE** \_  
(code, name)

Training profile: \_\_\_\_\_  
(name) - for master's degree programs

Mode of study: **FULL-TIME** \_\_\_\_\_  
full-time/mixed attendance mode/extramural

Position	Number and name of the program section	Contents of the changes made	Effective date of the changes	Contributor's signature
1				

Approved at the department meeting  
Protocol No. \_\_\_\_\_ of \_\_\_\_\_ 20\_\_

Head of the Department

\_\_\_\_\_  
department name, academic title

\_\_\_\_\_  
signature

\_\_\_\_\_  
print name