

MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

Department of Ophthalmology

CONFIRMED by

Acting vice-rector for scientific and pedagogical
work



Sytlana KOTYUZHYNSKA
« 01 » 09 2022

WORKING PROGRAM IN THE DISCIPLINE

«OPHTHALMOLOGY»

Level of higher education: second (master's degree)

Field of knowledge: 22 «Health care»

Specialty: 221 «Stomatology»

Educational and professional program: Stomatology

2022 - 2023

The working program is compiled on the basis of the educational and professional program «Stomatology» for the training of specialists of the second (master's) level of higher education in the specialty 221 «Stomatology» of the field of knowledge 22 «Health care», approved by the Academic Council of ONMedU (protocol № 9 dated 23/06/2022).

Authors:

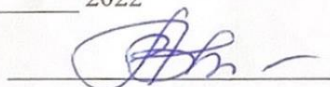
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The working program is approved at the meeting of the Department of Ophthalmology

Protocol № 7 dated "15" 06 2022

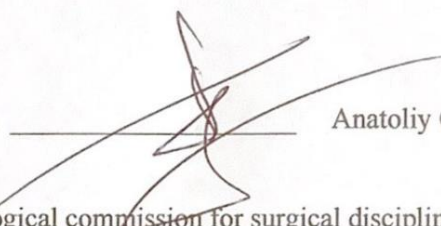
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Liudmyla VENGER

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Approved by the subject-cycle methodological commission for surgical disciplines of ONMedU

Protocol № 6 dated "30" sept 2022

Head of the subject-cycle methodological commission for surgical disciplines



Vasylysh MISHCHENKO

Revised and approved at the department meeting _____

Protocol № ___ dated "___" _____ 20__ y.

Head of Department

(_____)

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(First Name Last Name)

Revised and approved at the department meeting _____

Protocol № ___ dated "___" _____ 20__ y.

Head of Department

(_____)

(signature)

(First Name Last Name)

1. Description of the academic discipline

Name of indicators	Field of knowledge, specialty, specialization, level of higher education	Characteristics of the academic discipline
Total number:	Field of knowledge 22 «Health care»	<i>Full-time education</i> <i>Compulsory discipline</i>
Credits of ECTS: 1	Specialty 221 «Stomatology»	<i>A year of training 4</i>
Hours: 30		<i>Semester VII-VIII</i>
Content modules: 1	Level of higher education second (master's degree)	<i>Lectures (hours) 4</i>
		<i>Seminars (hours) 0</i>
		<i>Practical classes (hours) 16</i>
		<i>Laboratories (hours) 0</i>
		<i>Independent work (hours) 10</i> <i>including individual tasks (0 hours)</i>
		<i>The form of the final control - credit</i>

2. The purpose and tasks of the educational discipline, competencies, program learning outcomes.

The purpose is to master the knowledge and to form the elements of the professional competencies and practical skills in the field of ophthalmology acquired during the study of previous disciplines.

The tasks of the discipline are the following:

1. Formation of systematized knowledge on the organization of ophthalmic care.
2. Formation of systematized knowledge on the examination of an ophthalmic patient, methods of diagnosis, treatment and prevention of the most common ophthalmic diseases.
3. Mastering the ability to determine the tactics of emergency ophthalmic care, diagnose traumatic injuries of the organ of vision and its appendages, and provide first aid.

The process of studying the discipline is aimed at forming elements of the following **competencies**:

– **general (GC):**

GC1 – Ability to abstract thinking, analysis and synthesis.

GC2 – Knowledge and understanding of the subject area and understanding of professional activity

GC3 – Ability to apply knowledge in practical situations.

GC4 – Ability to communicate in English.

GC7 – Ability to search, process and analyze information from various sources.

GC11 – Ability to work in a team.

– **special (SC):**

SC1 – Ability to collect medical information about the patient and analyze clinical data.

SC2 – The ability to interpret the results of laboratory and instrumental examinations.

SC3 – Ability to diagnose: determine preliminary, clinical, final, concomitant diagnosis, emergency conditions.

SC11 – Ability to determine tactics, methods and provision of emergency medical assistance.

Program learning outcomes (PLO):

PLO1 - Identify leading clinical symptoms and syndromes (according to list 1); according to

standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, to establish a probable nosological or syndromic preliminary clinical diagnosis of the disease (according to list 2)

As a result of studying the discipline, the student has to:

– **Know:**

- methods and features of examination of a patient with ophthalmopathology;
- clinic, diagnosis and treatment of purulent-inflammatory diseases of the appendages of the organ of vision, conjunctiva and cornea;
- diagnosis of inflammatory diseases of the choroid of the eye, clinical manifestations, differential diagnosis, features of treatment;
- tactics for detecting glaucoma, clinical manifestations of various stages, their diagnosis, measures of conservative and surgical treatment.

– **Be able:**

- conduct anamnesis collection and objective examination of an ophthalmic patient;
- to diagnose various inflammatory and non-inflammatory processes of the organ of vision and its appendages;
- choose appropriate conservative tactics for different stages of development of inflammation of the organ of vision and its appendages;
- provide first aid for various traumatic injuries to the organ of sight and its appendages.

3. The content of the educational discipline

Content module 1.

Topic 1. FUNCTIONS OF THE ORGAN OF VISION (VISUAL ACUITY, FIELD OF VISION)

Visual sensory system (visual analyzer, its main and auxiliary structures). Auxiliary structures (oculomotor apparatus and light-conducting apparatus). The main elements of the visual act: light perception, peripheral vision, form vision, binocular vision.

Study of central vision. Visual acuity, unit of its measurement, angle of vision. The value of the minimum angle of vision. The principle of building charts for measuring visual acuity. Determination of visual acuity using charts.

Examination of color vision. Color and its main features. Trichromasia of the normal human eye. Dichromasia. Explanation of errors made by dichromate. Diagnosis of color blindness. Polychromatic charts.

Study of peripheral vision - field of vision. Normal limits of the field of vision, physiological scotoma. Methods of determining the field of vision: control, perimetry, campimetry. Concentric narrowing of the field of vision. Sector-like defects, half loss of the field of vision of both eyes (hemianopsia), limited defects in the field of vision (scotoma). Types of scotoma (central, peripheral, relative, absolute, negative, positive).

Optical coherence tomography of the retina. Fluorescent angiography. Methodology of conducting. Evaluation of the choroidal, arterial and venous phase.

Topic 2. REFRACTION AND ACCOMMODATION OF THE EYE. STRABISMUS.

The concept of physical refraction of the eye and the age-related dynamics of its development. Objective and subjective methods of determining clinical refraction. Dependence of clinical refraction on the refractive power of optical media and the length of the eye axis. Characteristics of clinical refraction and its varieties: emmetropia, myopia, hypermetropia. Methods of examination. The concept of commensurate and incommensurate clinical refraction

(emmetropia, ametropia, anisometropia). Age characteristic and specific weight of different types of refraction.

Emmetropia, its clinical characteristics, distribution, methods of determination.

Hypermetropia (farsightedness). Age dynamics, distribution. Features of optical correction of hypermetropia.

Myopia (short-sightedness). Characteristics, age dynamics and distribution. Congenital and progressive myopia. Changes in the membranes of the eye during progressive myopia. Pathogenesis, classification, role of unfavorable factors. Principles of medical and surgical treatment. Prevention.

Accommodation. Age-related changes in accommodation. Spasm and paralysis of accommodation, their causes. Presbyopia and its correction depending on the initial clinical refraction and age.

Study of binocular vision. Methods of determining binocular vision: establishing movement, test using two pencils, examination with a "hole in the palm". Violation of binocular vision.

Topic 3. DISEASES OF THE EYELIDS, LACRIMAL ORGANS, CONJUNCTIVUS

Blepharitis, stye, chalazion, abscess, phlegmon of the eyelid. Ptosis, lagophthalmos. Congenital anomalies (coloboma of the eyelids, ankyloblepharon, eyelid twist, inversion of the eyelids, epicanthus, ptosis). Eyelid diseases caused by demodicosis (features of the clinical picture, diagnosis, treatment and prevention).

Dacryoadenitis. Etiology, clinic, diagnostic methods, course, complications. Principles of treatment. Sjögren's syndrome ("dry" eye syndrome during damage to the lacrimal and other exocrine glands). Pathogenesis, stages of the clinical course, consequences. Methods of diagnosis and therapy.

Dacryocystitis of newborns. Clinical signs, causes and time of appearance. Methods of diagnosis and treatment, possible complications.

Acute dacryocystitis (phlegmon of the lacrimal bladder). Clinic, course, consequences. Principles of treatment and prevention.

Conjunctivitis. Acute conjunctivitis, complaints, discharge, appearance of the conjunctiva, conjunctival injection of the eyeball and difference from pericorneal. Etiology. Methods of treatment.

Honoblenorrhoea of newborns and adults. Its prevention and treatment. Effects. General and local treatment.

Viral conjunctivitis (herpesvirus, adenovirus). Features of diagnosis and treatment.

Injuries of the accessory apparatus of the organ of vision. Injuries of the conjunctiva.

Topic 4. DISEASES OF THE CORNEA. DIAGNOSIS, TREATMENT.

Keratitis of exogenous origin. Infectious keratitis of bacterial origin. Corneal ulcer. Creeping corneal ulcer. Clinic, course, consequences.

Keratitis of viral etiology. Adenovirus keratoconjunctivitis. Clinic. Course. Treatment is local and general.

Keratitis of endogenous origin. Infectious keratitis. Keratitis in congenital syphilis (parenchymal). Clinic. Effects. Causes of occurrence.

Tuberculous keratitis. Hematogenous tuberculous keratitis. Pathogenesis. Clinic. Treatment.

Neuroparalytic keratitis during trigeminal nerve damage. Herpetic keratitis. Clinic of various forms. Course. Effects. Treatment.

Fungal lesions of the cornea. Clinic, course, diagnostic features. Specific methods of treatment.

Avitaminosis keratitis. Damage to the cornea in vitamin deficiency A. Prexerosis. Xerosis of the cornea. Keratomalacia. Clinic. Course. Treatment. Prevention.

Corneal dystrophies. Causes, features of the clinic and treatment.

Traumatic damage to the cornea.

Topic 5. DISEASES OF THE VASCULAR MEMBRANE. DIAGNOSIS, TREATMENT.

Inflammation of the vascular tract (uveitis). Classification of uveitis according to course, localization, clinical and morphological picture, etiology, immunological status. The main clinical signs of uveitis (iridocyclitis, choroiditis, panuveitis). Treatment of anterior and posterior uveitis depending on the etiology and nature of the process. Effects. Prevention.

Anomalies of the development of the choroid (coloboma of the iris, coloboma of the ciliary body, coloboma of the choroid, aniridia, polycoria, chorioidermia, albinism, residual pupillary membrane).

Injuries of the vascular membrane. Hyphema.

Topic 6. PATHOLOGY OF THE LENS.

Congenital and acquired cataract (senile, secondary, complicated, traumatic), its development, pathogenesis, classification. Signs of cataract maturity. Methods of treatment. Indications for surgery.

Aphakia, methods of correction.

Congenital cataract (clinic, diagnosis, treatment). Anomalies of lens development.

Acquired pathology of the vitreous body (hemorrhage, destruction). Diagnostics, modern methods of treatment.

Topic 7. GLAUCOMA. INTRAOCULAR PRESSURE METHODS OF EXAMINATION.

Classification. Open-angle and closed-angle glaucoma (diagnosis, clinical course). Acute attack of glaucoma. Differential diagnosis with acute iridocyclitis. Treatment. Indications and terms of surgical treatment. Regimen of a glaucoma patient. Dispensary.

Congenital glaucoma (etiology, pathogenesis), clinical features and treatment.

Secondary glaucoma, clinical forms, principles of diagnosis and treatment.

Blindness due to glaucoma. Prevention, methods of early diagnosis of glaucoma.

Topic 8. SUDDEN DECREASE OF VISION. RETINA AND OPTIC NERVE DISEASES.

Acute obstruction of the central vein of the retina and its branches. Clinic, diagnosis, treatment. Emergency aid. Prognosis, consequences. Embolism of the central retinal artery, features of the clinical course, diagnosis, treatment, emergency care, consequences.

Detachment of the retina. Etiology, pathogenesis, features of the ophthalmological picture. Terms and methods of operative interventions. Use of modern methods of treatment. The role of photo- and laser coagulation in the prevention and treatment of retinal detachment. Effects.

Neoplasm of the retina. Features of the clinical course, ophthalmoscopic picture of retinoblastoma. Modern methods of diagnosis and treatment.

Inflammation of the optic nerve (neuritis). Papillitis and retrobulbar neuritis (etiology, clinic), diagnostic features. Emergency aid. Principles of treatment. Effects.

Congestive disc of the optic nerve. Causes of development, stages of development. Features of each stage. Differential diagnosis with optic neuritis. Features of treatment.

Credit.

4. The structure of the academic discipline

Names of topics	Number of hours					
	In total	including				
		lectures	seminars	practical	laboratory	IW
Content module 1.						
Topic 1. Functions of the organ of vision (visual acuity, visual field)	5	-	-	2	-	3
Topic 2. Refraction and accommodation of the eye. Strabismus.	3	-	-	2	-	1
Topic 3. Diseases of the eyelids, lacrimal organs, conjunctiva	7	1	-	2	-	4
Topic 4. Diseases of the cornea. Diagnosis, treatment.	2,5	0,5	-	2	-	-
Topic 5. Diseases of the choroid. Diagnosis, treatment.	3,5	0,5	-	2	-	1
Topic 6. Lens pathology.	2,5	0,5	-	2	-	-
Topic 7. Glaucoma. Methods of IOP examination.	3,75	0,75	-	2	-	1
Topic 8. Sudden decrease in vision. Diseases of the retina and optic nerve.	2,75	0,75	-	2	-	-
<i>Together according to the content module 1</i>	30	4	-	16	-	10
Exam	-	-	-	-	-	-
Total hours	30	4	-	16	-	10

5. Topics of lectures / seminars / practical / laboratory classes

5.1. Topics of lectures

Nº	Topic name	Number of hours
1	„Red eye”. (Diagnosis and emergency care, prevention of inflammation of the eyelids, lacrimal organs, conjunctiva (stye, eyelid abscess, dacryocystitis, conjunctivitis). Inflammatory diseases of the cornea and vascular tract (keratitis, uveitis, endophthalmitis, panophthalmitis). Diagnosis and treatment, prevention).	2
2	Gradual and sudden decrease in vision. (Glaucomas. Regulation mechanisms, intraocular pressure examination methods. Classification, clinic and treatment of glaucoma. Cataracts: congenital, acquired (traumatic, complicated, secondary, senile). Diseases of the retina and optic nerve. Neoplasms of the eyeball. Changes in the organ of vision in general diseases. Diagnosis, treatment, prevention).	2
	Total	4

5.2. Topics of seminar classes

Seminar classes are not provided.

5.3. Topics of practical classes

№	Topic name	Number of hours
1	Topic 1. Functions of the organ of vision (visual acuity, visual field)	2
2	Topic 2. Refraction and accommodation of the eye. Strabismus.	2
3	Topic 3. Diseases of the eyelids, lacrimal organs, conjunctiva	2
4	Topic 4. Diseases of the cornea. Diagnosis, treatment.	2
5	Topic 5. Diseases of the choroid. Diagnosis, treatment.	2
6	Topic 6. Lens pathology.	2
7	Topic 7. Glaucoma. Methods of IOP examination.	2
8	Topic 8. Sudden decrease in vision. Diseases of the retina and optic nerve.	2
	Credit	-
	Total	16

5.4. Topics of laboratory classes

Laboratory classes are not provided.

6. Independent work of a student of higher education

№	Title of the topic / types of tasks	Number of hours
1	Trachoma.	2
2	Individual tasks - preparation for practical classes - theoretical preparation and development of practical skills	
	1. Determine visual acuity (topic 1)	1
	2. Determine the field of vision (topic 1)	1
	3. Define color vision (topic 1)	1
	4. Define clinical refraction (topic 2)	1
	5. Determine tear production (topic 3)	1
	6. Determine patency of tear ducts and interpret changes (topic 3)	1
	7. Determine ciliary sensitivity (topic 5)	1
	8. Determine intraocular pressure by palpation (topic 7)	1
	Total	10

7. Teaching methods

The following methods will be used during lectures and practical classes:

- *Verbal*: lectures (problematic, lectures with analysis of specific situations), explanation, discussion, discussion of clinical situations.

- *Visually*: illustrations (including multimedia presentations), demonstrations, the method of direct observation.

- *Practical*: solving clinical tasks; performance of individual tasks.

Practical training: conversation, solving clinical situational problems, practicing patient examination skills.

During practical classes, a large part of the time (at least 60%) should be devoted to working with patients. The rest of the time is for the analysis and joint discussion of the results of the higher education applicant's independent work with error correction.

Independent and individual work when studying an academic discipline, it is provided by methodical developments based on the independent work of a student of higher education,

visual teaching aids (presentations, educational films), information resources of the department, algorithms for performing practical skills, algorithms for self- and mutual control of knowledge and skills, test tasks of the "Step-2" type to each class. Mastery of topics that are presented only for independent work is checked during practical classes.

8. Forms of control and evaluation methods (including criteria for evaluating learning outcomes)

Current control is carried out at each practical session by means of an oral survey or written control. After studying each section, the mastery of practical skills is monitored based on the control of theoretical knowledge, practical skills and abilities.

The main forms of current control are: oral survey, testing, assessment of the performance of practical skills, solution of situational clinical tasks, assessment of activity in class. The current educational activity of a student of higher education is evaluated in a practical session according to a traditional 4-point scale.

Evaluation of the current educational activity in a practical session:

1. Evaluation of theoretical knowledge on the subject of the lesson:
 - methods: survey, solving a situational clinical problem
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
2. Evaluation of practical skills and manipulations on the subject of the lesson:
 - methods: assessment of the correctness of the performance of practical skills
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.
3. Evaluation of work with a patient on the subject of the lesson:
 - methods: assessment of: a) communication skills of communicating with the patient, b) the correctness of prescribing and evaluating laboratory and instrumental examinations, c) compliance with the differential diagnosis algorithm, d) substantiating the clinical diagnosis, e) drawing up a treatment plan;
 - the maximum score is 5, the minimum score is 3, the unsatisfactory score is 2.

The grade for one practical lesson is the arithmetic average of all components and can only have an integer value (5, 4, 3, 2), which is rounded according to the statistical method.

Criteria for evaluating the work of a student of higher education in a practical session

«5»	«4»	«3»	«2»
<i>Criteria for evaluating practical skills</i>			
The student of higher education independently performed this or that practical skill, clearly chose the necessary method of providing assistance in this or that clinical situation	The student of higher education independently performed this or that practical skill, but at the same time made two or three insignificant mistakes.	A student of higher education cannot independently choose an adequate method of assistance in this or that clinical situation, makes gross mistakes when performing practical skills	A student of higher education does not demonstrate knowledge of how to provide assistance in a particular clinical situation, cannot give any correct answer to a question.
<i>Criteria for evaluating theoretical knowledge</i>			
The student of higher education independently, clearly and consistently, with exhaustive completeness, using data from additional literature, answered all the questions.	The student of higher education maturely orients himself in the material, but when answering, he made two or three fundamentally unimportant mistakes.	knows the actual material in the full scope of the course program, but finds it difficult to independently and systematically present the answers, forcing the teacher to offer him leading questions.	The student of higher education does not demonstrate knowledge and is poorly oriented in the main theoretical material of the ophthalmology course, which is revealed by offering

			him additional questions.
Criteria for evaluating the performance of test tasks			
90-100 %	70-80 %	50-60 %	Less than 50 %
Evaluation criteria for solving situational problems			
3 from 3	2 from 3	1 from 3	none have been resolved
Criteria for evaluating the activity of a student of higher education			
Very active	Active	Less active	Passive
The student of higher education works actively during the entire practical session, is able to express his own attitude to alternative considerations on the given problem, demonstrates the ability to independently and reasonably present the material, analyze phenomena and facts, make independent generalizations and conclusions. Shows the ability to work in a group (is a leader), plan time, produce new ideas, evaluate the quality of the work performed, be critical and self-critical, evaluate his knowledge and the knowledge of others.	The student of higher education actively works during the practical session, the presentation of the material is logical, the coverage of issues is completed with conclusions, the student has demonstrated the ability to perform educational tasks. Shows the ability to work in a group, plan time, produce new ideas, evaluate the quality of the work performed, be critical and self-critical, evaluate his knowledge and the knowledge of others. But in order to manifest its qualities, it needs an external stimulus.	The student of higher education has generally mastered the essence of questions on this topic, tries to analyze questions, draw conclusions and solve problems. But he behaves passively in class, he responds only when called upon by the teacher. Does not show activity in the group, or only after the leader's remark.	A student of higher education does not show activity when working independently and as part of a group. Shows lack of interest and desire to work.

The average grade for all activities of a student of higher education during the practical session becomes final.

Evaluation of the educational activity of all higher education students is not mandatory at every practical session. However, at least 50% of the students should be interviewed at the practical session.

At the end of the study of the discipline, the current success rate is calculated as the average score of all grades received by the student of higher education on a traditional scale, rounded to two decimal places.

Current evaluation criteria in practical training

The results of academic performance of a higher education applicant are presented in the form of an assessment on a national scale, a 200-point scale and the ECTS scale and have standardized generalized criteria for assessing knowledge:

national scale:

– rating "**excellent**" is awarded to a student of higher education who has worked systematically during the semester, has shown versatile and in-depth knowledge of the program material during the differential assessment, is able to successfully perform the tasks provided for in the program, has mastered the content of the main and additional literature, has realized the

interrelationship of individual sections of the discipline, their importance for future profession, showed creative abilities in understanding and using educational program material, showed the ability to independently update and replenish knowledge; level of competence - high (creative);

– rating "**good**" is presented to a student of higher education who has demonstrated full knowledge of the curriculum material, successfully performs the tasks provided for by the program, has mastered the basic literature recommended by the program, has shown a sufficient level of knowledge in the discipline and is capable of their independent updating and renewal during further education and professional activity; level of competence - sufficient (constructive and variable);

– rating "**satisfactory**" is presented to a student of higher education who has demonstrated knowledge of the basic curriculum material to the extent necessary for further education and subsequent work in the profession, copes with the tasks provided for in the program, made individual mistakes in answers on differential exam and when completing exam tasks, but possesses the necessary knowledge to overcome the mistakes made under the guidance of a scientific and pedagogical worker; level of competence — average (reproductive);

– rating "**unsatisfactory**" is presented to a student of higher education who did not demonstrate sufficient knowledge of the main curriculum material, made fundamental mistakes in the performance of the tasks provided for in the program, cannot use the knowledge in further studies without the help of a teacher, did not manage to master the skills of independent work; the level of competence is low (receptive-productive).

The form of the **final control** is the credit.

Test are carried out by scientific and pedagogical workers who conducted practical classes in an academic group. Applicants of higher education who have completed the curriculum in the educational component in full, have no academic debt, their current grade point average is 3.00 or more, receive credit in the last class, which is presented as "passed" / "failed".

If a student of higher education has received a minimum grade point average of 3.00 for the current performance, even in the case of unworked unsatisfactory grades, he receives credit.

9. Methodical support

The teaching of the academic discipline in lectures is provided by methodical development of each lecture, published lecture texts, visual teaching aids for each lecture (presentations, educational films), information resource of the department.

The teaching of the academic discipline **in practical classes** is provided by methodical development of each practical class, visual teaching aids for each class (presentations, educational films), sets of diagnostic and therapeutic tools, information resources of the departments, topics of independent and individual tasks for each task, algorithms for performing practical skills and structured skill control algorithms, test tasks of the "Step-2" type for each lesson.

Independent and individual work when studying an academic discipline, it is provided by methodological developments from the independent work of a higher education student, visual teaching aids (presentations, educational films), information resources of departments, algorithms for performing practical skills, test tasks of the "Step-2" type for each lesson.

10. List of recommended literature:

Basic:

1. Ophthalmology: textbook / O. P. Vitovska, P. A. Bezditko, I. M. Bezkorovayna et al.; edited by O. P. Vitovska. - Kyiv: AUS Medicine Publishing, 2017. - 648 p. ISBN 978-617-505-598-4
2. Atlas of Glaucoma. Second edition: textbook / Neil T. Choplin, Diane C. Lundy. - Informa healthcare, United Kingdom, 2007. -364 p. ISBN-10: 1841845183.
3. Common Eye Diseases and their Management: textbook / N. R. Galloway, W.M.K. Amoaku, P. H. Galloway and A. C. Browning; -Springer - Verlag London Limited, 2006. – 208 p. ISBN 1-85233-050-32.

4. 5. Ophthalmology at a Glance: textbook / JANE OLVER, LORRAINE CASSIDY; - by Blackwell Science Ltd a Blackwell Publishing company, USA, 2005. -113 p. ISBN-10: 0-632-06473-0.

Additional:

1. Eye Diseases. Course of lectures: textbook / G. E. Venger, A. M. Soldatova, L. V. Venger; edited by V. M. Zaporozhan. - Odessa: Odessa Medical University, 2005. – 157p.
2. Ophthalmology: textbook. / Gerhard K. Lang, edited by J. Amann, O. Gareis, Gabriele E. Lang, Doris Recker, C.W. Spraul, P. Wagner. - Thieme Stuttgart. New York, 2000. - 604 p. ISBN 0-86577-936-8.
3. EYE Atlas. Online Atlas of Ophthalmology. / All rights Reserved, Oculisti Online. Copyright 2001. -408 p.
4. ABC of Eyes, Fourth Edition: textbook / P. T. Khaw, P. Shah, A. R. Elkington. - by BMJ Publishing Group Ltd, BMA House, Tavistock Square, London, 2005. - 97 p. ISBN 0 7279 1659

11. Electronic information resources

1. <https://info.odmu.edu.ua/chair/ophthalmology/>
2. <https://repo.odmu.edu.ua/xmlui/>
3. <http://library.gov.ua/>
4. <http://www.nbu.gov.ua/>
5. https://library.gov.ua/svitovi-e-resursy/dir_category/general/
6. <http://nmuofficial.com/zagalni-vidomosti/biblioteky/>
7. <https://guidelines.moz.gov.ua/documents>
8. www.ama-assn.org – American Medical Association
9. www.dec.gov.ua/mtd/home/
10. <http://bma.org.uk>
11. www.gmc-uk.org