



Syllabus For Academic Program “Ophthalmology”

1. General information

Name of the faculty	Medical faculty
Educational program (industry, specialty, level of higher education, form of education)	22 Health, 222 Medicine higher level (master's) of education, full-time
Academic year	2023-2024 yrs
Name of discipline , code (e-mail address is on the website of Danylo Halytsky LNMU)	Ophthalmology kaf_ophthalmology@meduniv.ua
Department (name, address, phone e-mail)	Department of Ophthalmology FOPE Danylo Halytsky LNMU, Lviv, 35 Nekrasova st phone: (032) 236 84 59, (032) 236 82 55 kaf_ophthalmology_fpge@meduniv.lviv.ua
Head of the department (contact e-mail)	prof. Hudz AS hudz_andriy@meduniv.lviv.ua
Year of study (year in which the study of the discipline)	4th year
Semester (semester in which the study of the discipline is implemented)	7, 8 semester
Type of discipline / module (compulsory, optional)	Form of control – differential credit, required
Teachers (names, surnames, scientific degrees and titles of teachers who teach the discipline, contact's email)	1. Yurevych Vsevolod Romanovych - Candidate of Medical Sciences, Associate Professor yurevych_vsevolod@meduniv.lviv.ua
Erasmus yes / no (availability of the discipline for students within the Erasmus + program)	-
Person responsible for syllabus (person to be commented on syllabus, contact email)	Assoc. prof. Michel VD mikhel_veronika@meduniv.lviv.ua
Amount of ECTS credits	3 credit hours
Number of credit hours (lectures / practical classes / independent work of students)	Lectures - 8 hours / practical classes - 37 hours. / independent work -45 hours Total: 90 credit hours
Language	English
Information about consultations	On the website of Danylo Halytsky LNMU in the misa system, on the web page of the Department of Ophthalmology of Danylo Halytsky LNMU; Department of Ophthalmology - on the wallstands
Address, telephone and rules of operation of the clinical base, office... (if necessary)	Department of Ophthalmology FOPE Danylo Halytsky LNMU Lviv, 35 Nekrasova st, tel. (032) 236 84 59

2. Short course annotation:

The study of the discipline "Ophthalmology" is carried out in the 4th year of study.

Description of the discipline abstract.

Ophthalmology is a clinical discipline that studies the anatomy, physiology and pathology of the visual organ and the auxiliary apparatus of the eye. The importance and necessity of its teaching at the final stage of doctor's training is due to the fact that diseases of the visual organ are in one of the first places among human diseases and account for about 20% of all appeals to medical institutions. Eye diseases lead to early disability or to a restriction in the choice of profession, so it is safe to say that an ophthalmologist may be among the first doctors in health care.

Types of educational activities of students according to the curriculum are:

lecture material;

practical training;

independent work of students;

consultations.

Practical classes include:

study of the discipline of ophthalmology;

mastering practical skills.

During practical classes on the subject "Ophthalmology" students are recommended:

- perform written tasks (test control to determine the initial level of knowledge, situational tasks for the final control of the level of knowledge of students);
- watching educational videos (use of diagrams, tables, slides, models, computer presentations);
- practical skills (indirect and direct ophthalmoscope, skiascopy rulers, Maklakov tonometer, anomaloskop, 4-point color test, biomicroscope, multifocal lens).

3. Purpose and goals of the course:

1. The purpose of teaching the discipline "Ophthalmology" is to master the methods of diagnosis, treatment and prevention of diseases of the visual organ, especially the most common.

To achieve this educational goal, the student must know: anatomy and physiology of the visual organ, special methods of laboratory and instrumental research.

2. The main tasks of studying the discipline "Ophthalmology" are the study of anatomy, physiology and pathology of the visual organ and additional structures of the eye.

The subject of study of the discipline is clinical anatomy, physiology, methods of research of the visual organ, etiology, pathogenesis, diagnosis and treatment of the most common diseases of the visual organ.

1. Evaluate the results of the examination of the organ of vision:

perform visometry, ophthalmoscopy, sciascopy, tonometry, perimetry, biomicroscopy, 4-point color test, determine tear production, perform Schirmer test

2. Recognize the most common diseases of the visual organ and their complications:

Among the complaints and anamnesis of the patient to choose the symptoms that suspect the presence of eye diseases, to find out the causes of the disease. Assess and compare the most informative and objective signs of this disease. Compare subjective and objective data confirming the diagnosis of the patient. Investigate the functions of the visual organ using visometry. Evaluate the typical types of computed tomography in the norm, in the case of lesions of the neuroretinal ring. Evaluate the data of X-ray examination of the organ of vision and ultrasound examination. Evaluate the data of laboratory research methods (general blood test, coagulogram, conjunctival lavage). Establish a preliminary diagnosis and be able to make a differential diagnosis of eye diseases.

3. Prescribe treatment for these diseases.

Make a plan for examination of the visual organ. Make a treatment plan for a patient with this pathology. If necessary, perform manipulations: instill drops and apply medicated ointments, perform superficial anesthesia of the conjunctiva. To appoint the corresponding treatment of diseases of an organ of sight, to make the scheme of treatment of patients.

The student must accomplish:

1. Typical methods of examination of an ophthalmic patient:

- conduct examination of an ophthalmic patient.
- perform visometry, biomicroscopy, tonometry, ophthalmoscopy (with the method of direct and indirect ophthalmoscopy)

2. Practical skills:

- be able to perform typical manipulations: washing the conjunctival cavity, instilling therapeutic drops and ointments in the conjunctival sac, applying binocular and monocular bandage, have an idea of the method of dacryocystorhinostomy.
- perform the following manipulations: taking swabs from the conjunctival cavity, irrigation and installation of drops in the conjunctival sac.
- be able to perform eyelid massage.
- master the skills of subconjunctival injections.

3. Methods of providing emergency care to patients with injuries, foreign bodies, bleeding of the visual organ are:

- perform the eye socket, perform anesthesia of the mucous membrane of the eye, (infiltration).
- perform examination (external examination, palpation), assess the condition of the conjunctiva (presence or absence of redness, infiltration, edema, rupture).
- among complaints and medical history of the patient to choose the symptoms that give reason to suspect the presence of a foreign body, a combined injury. Perform a visual examination. Highlight the most informative and objective signs that confirm the presence of foreign bodies, injuries, bleeding. Evaluate the data of radiographs, computed tomography and magnetic resonance imaging. Make a treatment plan for a patient with this pathology. Remove foreign bodies from the organ of vision.

Provide first aid for eye injuries, contusions and burns.

Apply a binocular bandage.

The study of the discipline involves the supervision of patients with writing a medical history, solving situational problems, testing, computer control in assessing the initial, current and final level of knowledge.

3. Competences and learning outcomes, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education seekers, formulated in terms of learning outcomes in the Standard of Higher Education).

In accordance with the requirements of the Standard of Higher Education, the discipline provides students with the acquisition of competencies:

A) general:

- ability to abstract thinking, analysis and synthesis;
- ability to learn and possess modern knowledge;
- ability to examine the patient;
- ability to apply knowledge in practical situations;
- ability to differentiate and analyze terms;
- ability to diagnose, apply methods of diagnosis and treatment.

B) special (professional, subject):

- ability to perform a subtest of test tasks of the professional direction of the licensing exam STEP -2 and passing the exam in the discipline of "Otorhinolaryngology" direction as part of the state qualifying exam;
- ability to use the technique of using the frontal reflector;
- ability to conduct a medical consultation;
- ability to draw up a patient's medical history, diagnosis, treatment;
- ability to conduct research;
- ability to use modern information technology.

Detailing of competencies according to NQF descriptors in the form of "Competence Matrix".

4. Prerequisites of the course

Program competencies:

1. Ability to abstract thinking, analysis and synthesis.
2. Knowledge and understanding of the subject area and understanding of professional activity.
3. Ability to apply knowledge in practice.
4. Ability to communicate in the state language both orally and in writing.
5. Ability to communicate in English.
6. Skills in the use of information and communication technologies.
7. Ability to search, process and analyze information from various sources.
8. Ability to adapt and act in a new situation.
9. Ability to identify, pose and solve problems.
10. Ability to be critical and self-critical.
11. Ability to work in a team.
12. The desire to preserve the environment.
13. Ability to act socially responsibly and consciously.
14. Ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine.
15. Ability to preserve and increase moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques and technologies, use different types and forms of motor activities for active recreation and a healthy lifestyle.

Professional competencies of the specialty (FC)

1. Ability to gather medical information about patients and analyze clinical data.
2. Capability to determine the necessary list of laboratory and instrumental tests and assess their results.
3. Ability to establish a preliminary and clinical diagnosis of diseases.
4. Capability to determine the necessary work and rest regimen for treatment and disease prevention.
5. Ability to define the principles and nature of nutrition in treatment and disease prevention.
6. Capability to determine the principles and nature of treatment and disease prevention
7. Ability to diagnose urgent medical conditions.
8. Capability to determine tactics and provide emergency medical care.
9. Ability to conduct medical evacuation measures.
10. Capability to perform medical procedures.
11. Ability to conduct sanitary and hygienic and preventive measures.
12. Ability to maintain medical documentation, including electronic forms.
13. Capability to analyze the activities of a physician, department, healthcare facility, ensure the quality of medical care, and improve the efficiency of medical resource utilization.
14. Adherence to ethical principles when working with patients and laboratory animals.
15. Adherence to professional and academic integrity, taking responsibility for the accuracy of obtained scientific results.

Learning outcomes:

Integrative final program learning outcomes, the formation of which is facilitated by the discipline "Ophthalmology":

- evaluate the patient's complaints, medical history, patient's life history,
- examine the examination of the organ of vision: examination in lateral lighting, biomicroscopy and ophthalmoscopy
- on the basis of the received data to define the preliminary diagnosis, to make the plan of additional inspections, to choose medical tactics.

5. Program learning outcomes

List of learning results		
Learning results code	The content of the learning results	Reference to the

		code of the competence matrix
<i>Code to create when filling the syllabus (category: Zn-knowledge, Mind-skills, K-competence, AV-autonomy and responsibility)</i>	<i>Learning outcomes determine that the student must know how to understand and be able to perform after completing the discipline. Learning outcomes follow from the set learning goals. To enroll in the discipline, it is necessary to confirm the achievement of each learning outcome.</i>	Symbol of the Program Learning Outcome Code in the Higher Education Standard
Know -1:	Clinical anatomy and physiology of the visual organ and modern methods of their research; etiology, pathogenesis, clinic, methods of treatment and prevention of diseases of the visual organ, as well as the complications caused by them.	PR-1
Be able to do-1:	Evaluate the results of the examination of the visual organ; recognize the most common eye diseases and their complications; prescribe treatment for these diseases.	
Competence-1:	Ability to collect medical information about the patient and analyze clinical data. Ability to perform a subtest of test tasks of the professional direction of the license exam KROK-2 and obtain credit in the discipline of ophthalmology as part of the state qualifying exam.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Ability to have the technique of using direct and indirect ophthalmoscope, to master the technique and practice the technique of direct and indirect ophthalmoscopy, biomicroretinoscopy, biomicroscopy, tonometry.	PR-2
Be able to do-1:	Perform direct and indirect ophthalmoscopy, biomicroscopy, tonometry.	
Competence-1:	Ability to interpret the results of laboratory and instrumental research. Procedure, methods and techniques examination of an ophthalmic patient; normal ophthalmoscopic picture of the fundus, the condition of the anterior structures of the eye, as well as possible typical pathological deviations in their biomicroscopic picture; clinical anatomy, physiology of the visual organ, research methods.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Collect data on patient complaints, medical history, life history, conduct examinations: biomicroscopy, ophthalmoscopy (direct and indirect), tonometry, visometry.	PR-3
Be able to do-1:	Evaluate the results of the examination of the visual organ; -recognize the most common eye diseases and their complications; -assign treatment for these diseases.	
Competence-1:	Ability to diagnose: determine the preliminary, clinical, final, concomitant diagnosis, emergencies. Ability to conduct a medical consultation.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan.	PR-4
Be able to do-1:	Evaluate the results of the examination of the visual organ.	

Competence-1:	Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to communicate in the state language both orally and in writing. Ability to communicate in English (if necessary). Registration of the patient's medical history, diagnosis, treatment.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan (emergency conditions)	PR-5
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to communicate in the state language both orally and in writing. Ability to communicate in English (if necessary). Registration of the patient's medical history, diagnosis, treatment.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up a plan of examination, treatment plan. (Means of prevention).	PR-6
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to communicate in the state language both orally and in writing. Ability to communicate in English (if necessary). Registration of the patient's medical history, diagnosis, treatment.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan (contact with infectious factors).	PR-7
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to communicate in the state language both orally and in writing. Ability to communicate in English (if necessary) Skills in the use of information and communication technologies.	

	<p>Ability to search, process and analyze information from various sources.</p> <p>Ability to adapt and act in a new situation.</p> <p>Ability to identify, pose and solve problems.</p> <p>The ability to be critical and self-critical.</p> <p>Ability to work in a team.</p> <p>Ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques and technologies. active recreation and a healthy lifestyle.</p> <p>Registration of the patient's medical history, diagnosis, treatment appointment.</p>	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan.	IIP-8
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	<p>Ability to abstract thinking, analysis and synthesis.</p> <p>Knowledge and understanding of the subject area and understanding of professional activity.</p> <p>Ability to apply knowledge in practice.</p> <p>Ability to communicate in the state language both orally and in writing.</p> <p>Ability to communicate in English (if necessary).</p> <p>Registration of the patient's medical history, diagnosis, treatment.</p>	
Autonomy and responsibility - 1:	Independence, responsibility.	
Знати -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan.	PR-9
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	<p>Ability to abstract thinking, analysis and synthesis.</p> <p>Knowledge and understanding of the subject area and understanding of professional activity.</p> <p>Ability to apply knowledge in practice.</p> <p>Ability to communicate in the state language both orally and in writing.</p> <p>Ability to assess the impact of the environment on the health of the population (individual, family, population).</p> <p>Registration of the patient's medical history, diagnosis, treatment appointment;</p>	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan.	PR-10
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	<p>Ability to abstract thinking, analysis and synthesis.</p> <p>Knowledge and understanding of the subject area and</p>	

	<p>understanding of professional activity. Ability to apply knowledge in practice. Registration of the patient's medical history, diagnosis, treatment.</p>	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan.	PR-11
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	<p>Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Registration of the patient's medical history, diagnosis, treatment.</p>	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan.	PR-12
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	<p>Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to work in a team. The desire to preserve the environment. The ability to act socially responsibly and consciously. The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the rule of law, human and civil rights and freedoms in Ukraine. Ability to organize and conduct medical and evacuation measures. Ability to determine tactics, methods and provide emergency medical care. Registration of the patient's medical history, diagnosis, treatment appointment.</p>	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history of the patient's life, examination, draw up an examination plan, treatment plan.	PR-13
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	<p>Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to work in a team. The ability to act socially responsibly and consciously.</p>	

	Ability to provide home care according to the protocols of tactical medicine. Registration of the patient's medical history, diagnosis, treatment.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Writing reports, making a presentation, using literature.	PR-14
Be able to do-1:	Present a report, speak to the audience, answer questions.	
Competence-1:	Ability to conduct research.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Writing reports, making a presentation, using literature, using the Internet, the misa system.	PR-15
Be able to do-1:	Present a report, speak to the audience, answer questions.	
Competence-1:	Ability to use modern information technology. Ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, techniques and technologies. active recreation and a healthy lifestyle.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Writing reports, making a presentation, using literature, using the Internet, the misa system.	PR-16
Be able to do-1:	Present a report, speak to the audience, answer questions.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Writing reports, making a presentation, using literature, using the Internet, the misa system.	PR-17
Be able to do-1:	Present a report, speak to the audience, answer questions.	
Competence-1:	Ability to use modern information technology. Ability to plan and implement measures for the prevention of diseases of the visual organ. Ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the visual organ.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Writing reports, making a presentation, using literature, using the Internet, the misa system.	PR-18
Be able to do-1:	Present a report, speak to the audience, answer questions.	
Competence-1:	Ability to use modern information technology. Ability to plan and implement measures for the prevention of diseases of the visual organ. Ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the uterus. Ability to maintain regulatory medical records. Processing of state, social and medical information. Ability to organize and conduct rehabilitation activities and	

	care for patients with diseases of the visual organ. Ability to provide legal support for one's own professional activity.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Writing reports, making a presentation, using literature, using the Internet, the misa system.	PR-19
Be able to do-1:	Present a report, speak to the audience, answer questions.	
Competence-1:	Ability to use modern information technology. Ability to plan and implement measures for the prevention of diseases of the visual organ. Ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the organ. Ability to maintain regulatory medical records. Processing of state, social and medical information. Ability to organize and conduct rehabilitation activities and care for patients with diseases of the visual organ. Ability to provide legal support for one's own professional activity.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	Writing reports, making a presentation, using literature, using the Internet, the misa system.	PR-20
Be able to do-1:	Present a report, speak to the audience, answer questions.	
Competence-1:	Ability to use modern information technology. Ability to plan and implement measures for the prevention of diseases of the body. Ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of the organ. Ability to maintain regulatory medical records. Processing of state, social and medical information. Ability to organize and conduct rehabilitation activities and care for patients with diseases of the visual organ. Ability to provide legal support for one's own professional activity.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history, patient's life, examination, draw up an examination plan, treatment plan, how to perform manipulations, use of anesthesia.	PR-21
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Registration of the patient's medical history, diagnosis, treatment.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history, patient's life, examination, draw up an examination plan,	PR-22

	treatment plan, how to perform manipulations, use of anesthesia.	
Be able to do-1:	Evaluate the results of the examination of the visual organ..	
Competence-1:	Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to determine the management of patients with diseases of the visual organ with concomitant somatic diseases. Ability to perform medical manipulations. Registration of the patient's medical history, diagnosis, treatment.	
Autonomy and responsibility - 1:	Independence, responsibility.	
To Know -1:	How to describe and collect complaints, medical history, patient's life, examination, draw up an examination plan, treatment plan, how to perform manipulations, use of anesthesia..	PR-23
Be able to do-1:	Evaluate the results of the examination of the visual organ.	
Competence-1:	Ability to abstract thinking, analysis and synthesis. Knowledge and understanding of the subject area and understanding of professional activity. Ability to apply knowledge in practice. Ability to determine the management of patients with diseases of the visual organ with concomitant somatic diseases. Ability to perform medical manipulations. Ability to treat major diseases of the visual organ. Registration of the patient's medical history, diagnosis, treatment.	
Autonomy and responsibility - 1:	Independence, responsibility.	
Program learning outcomes:		
<ol style="list-style-type: none"> 1. Identify and identify the leading clinical symptoms and syndromes; according to standard methods, using preliminary data of the patient's anamnesis, 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 visual organ. 2. Collect information about the general condition of the patient, assess the psychomotor and physical development of the patient, the condition of the visual organ, based on the results of laboratory and instrumental studies to assess information about the diagnosis. 3. Prescribe and analyze additional (mandatory and optional) methods of examination (laboratory, radiological, functional and / or instrumental), patients with diseases of the visual organ for differential diagnosis of diseases. 4. Determine the final clinical diagnosis in accordance with the relevant ethical and legal norms, by making an informed decision and logical analysis of subjective and objective data of clinical, additional examination, differential diagnosis under the supervision of a doctor in a medical institution. 5. To diagnose emergencies under any circumstances (at home, on the street, in a medical institution), in an emergency, martial law, lack of information and limited time. 6. Plan and implement measures to prevent eye diseases among the population to prevent the spread of diseases of the visual organ. 7. Analyze the epidemiological situation and carry out measures of mass and individual, general and 		

- local drug and non-drug prevention of eye diseases.
8. To determine the approach, plan, type and principle of treatment of diseases of the visual organ by making an informed decision according to existing algorithms and standard schemes.
 9. Determine the nature of the mode of work, rest and the necessary diet in the treatment of eye diseases on the basis of preliminary or final clinical diagnosis by making an informed decision according to existing algorithms and standard schemes.
 10. To determine the tactics of patient management in pathology of the visual organ by making an informed decision according to existing algorithms and standard schemes.
 11. Carry out treatment of the basic eye diseases according to existing algorithms and standard schemes under the control of the doctor-head in the conditions of medical institution.
 12. To organize carrying out of medical and evacuation actions among the population, military men, in the conditions of an emergency situation, including martial law, during the detailed stages of medical evacuation, taking into account the existing system of medical and evacuation support.
 13. Determine the tactics of emergency medical care, using the recommended algorithms, under any circumstances on the basis of the diagnosis of an emergency in a limited time.
 14. Analyze and evaluate state, social and medical information using standard approaches and computer information technologies.
 15. Assess the impact of the environment on the health of the population in a medical institution by standard methods.
 16. To form the purposes and to define structure of personal activity on the basis of result of the analysis of certain public and personal needs.
 17. Adhere to a healthy lifestyle, use the techniques of self-regulation and self-control.
 18. To be aware of and guided in their activities by civil rights, freedoms and responsibilities, to raise the general cultural level.
 19. Adhere to the requirements of ethics, bioethics and deontology in their professional activities.
 20. Organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity.
 21. Perform medical manipulations on the basis of preliminary and / or final clinical diagnosis for different segments of the population and in different conditions.
 22. Perform medical ophthalmic manipulations on the basis of preliminary and / or final clinical diagnosis for different segments of the population and in different conditions.
 23. Manipulate the provision of emergency medical care, using standard schemes, under any circumstances on the basis of a diagnosis of emergency in a limited time.

6. Format and volume of the course

Course format (specify full-time or part-time)		
Types of course	Number of hours	Number of groups
Lectures (full-time)	8	
Practical (full-time)	37	
Independent (full-time)	45	

7. Topics and content of the course

Types of course	Topic	Content of training	Learning outcome code	Teacher
Lectures (full-time)-1	1 Diagnosis and emergency care, prevention of inflammation of the eyelids, lacrimal organs and orbit (barley, eyelid	presentations	K-knowledge, S-skills C- competence, AR-autonomy and responsibility	1.Assoc. prof. Yurevych VR

	<p>abscess, dacryocystitis, periostitis, orbital phlegmon). Diagnosis of inflammation of the conjunctiva and membranes of the eye ("red eye" - conjunctivitis, keratitis, iridocyclitis, uveitis, endophthalmitis, panophthalmitis). Diagnosis and treatment. Prevention.</p> <p>2. Gradual decrease in vision: Presbyopia. Cataract: congenital, acquired (traumatic, complicated, secondary, senile). Glaucoma. Diagnosis, treatment, prevention</p> <p>3. Damage to the organ of vision and additional apparatus of the eye. Emergency aid. Prevention, medical examination.</p>			
<p>Practical Lesson-1</p>	<p>1 1. Functions of the organ of vision.</p> <p>2 2. Refraction and accommodation. Strabismus.</p> <p>3 3. Diseases of the eyelids, lacrimal organs and orbit, conjunctiva</p> <p>4 4. Diseases of the cornea, sclera, choroid</p> <p>5 5. Diseases of the lens. Dystrophic diseases of the vitreous. Glaucoma.</p> <p>6 6. Diseases of the retina, optic nerve. Changes in the organ of vision in general diseases.</p> <p>7 7. Damage to the organ of vision. Emergency aid. Curation.</p> <p>8 8. Emergencies in ophthalmology (acute obstruction of the central vein and artery of the retina and its branches, retinal detachment, phlegmon of the orbit).</p>	<p>oral and written interview in the system misa test control</p>	<p>knowledge, skills competence, autonomy and responsibility</p>	<p>1.Assoc. prof. Yurevych VR</p>

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Self- work -1	<ol style="list-style-type: none"> 1. History of the development of ophthalmology in the 17-20 centuries 2. Anatomy, physiology of the visual organ 3. Diseases of the sclera 4. Neoplasms of the organ of vision 5. Examination in ophthalmology 6. Changes in the organ of vision in general diseases 	abstract, presentations	knowledge, skills competence, autonomy and responsibility	1.Assoc. prof. Yurevych VR

8.Verification of learning outcomes

Current control

Assessment of students' knowledge is carried out after the completion of all types of work, which the student is obliged to perform during the current, final control, independent work, individual tasks and criteria for their assessment. The current educational activities of students are monitored in practical classes in accordance with specific goals. The following tools are used to diagnose the level of preparation of students: computer tests, solving situational problems, curation of thematic patients, interpretation of laboratory and special studies characterizing the functional state of the upper respiratory tract and ears, control of practical skills, and others.

During the assessment of mastering each topic for the current educational activity of the student grades are given on the 4th point (national). This takes into account all types of work provided by the discipline program. The student must receive a grade from each topic for further conversion of grades into points on a multi-point (200-point) scale.

The set of knowledge, skills, abilities, other competencies acquired by the applicant in higher education in the process of learning in each topic of the discipline is tentatively assessed by the following criteria

5 / "excellent" - the student has mastered the theoretical material of the topic, demonstrates deep and comprehensive knowledge of the topic, the main provisions of scientific sources and recommended literature, thinks logically and builds the answer, freely uses the acquired theoretical knowledge in analyzing practical material, expresses his attitude to certain problems, demonstrates a high level of practical skills;

4 / "good" - the student has mastered the theoretical material of the lesson, has the basic aspects of primary sources and recommended literature, teaches it; has practical skills, expresses his views on certain issues, but assumes certain inaccuracies and errors in the logic of the presentation of theoretical content or in the implementation of practical skills;

3 / "satisfactory" - the student has mainly mastered the theoretical knowledge of the subject, is guided by primary sources and recommended literature, but unconvincingly answers, confuses concepts, additional questions cause the student uncertainty or lack of stable knowledge; answering questions of a practical nature, reveals inaccuracies in knowledge, is unable to assess facts and phenomena, relate them to future activities, makes mistakes in the implementation of practical skills;

2 / "unsatisfactory" - the student has not mastered the study material of the topic, does not know the scientific facts, definitions, almost does not navigate in the original sources and recommended literature, no scientific thinking, practical skills are not formed.

Learning outcome code	Knowledge code type	Verification method learning outcomes	Enrollment criteria
<p><i>K-1</i></p> <ol style="list-style-type: none"> 1. Methods and examination of an ophthalmic patient. 2. Ophthalmoscopic picture of the organ of vision. 3. Clinical anatomy, physiology, methods of examination of the organ of vision. <p><i>S-1</i></p> <ol style="list-style-type: none"> 1. Use direct and indirect ophthalmoscope, biomicroscope, skiascopic rulers, tonometer and multifocal lens. 2. Carry out direct and indirect ophthalmoscopy, biomicroscopy, tonometry, retinoscopy. 3. Investigate vision using Golovin-Sivtsev tables. 4. Evaluate the typical picture of optical coherence tomography of the retina and optic nerve in normal and in case of damage to the neuroretinal ring. 	<p><i>P-1</i></p>	<p>Topic 1</p> <ol style="list-style-type: none"> 1. Determining the initial level of students' knowledge of anatomy and physiology of the visual organ. 2. Determining the final level of students' knowledge. 3. Solving situational problems, working with test tasks. 4. Independent work of students, mastering practical habits. 5. Writing self-training. 	<p>Evaluation on a 4-point (national) scale.</p>
<p><i>K-1</i></p> <ol style="list-style-type: none"> 1. Types of clinical refraction. 2. Clinic, diagnosis and complications of myopia. 3. Clinic, diagnosis and complications of hyperopia. 4. Clinic and diagnosis of astigmatism. 5. Methods of correction of refraction anomalies. 6. Principles of accommodation mechanism. 7. Types of strabismus and its treatment. <p><i>S-1</i></p> <ol style="list-style-type: none"> 1. Determine the visual acuity of the patient. 2. Determine the type of refraction. 3. Determine the accommodative capabilities of the eye. 4. Determine the value of the interpupillary distance. 5. Be able to perform a skiascopy. 6. Write a prescription for glasses. 7. Determine the angle of inclination according to Hirschberg. 	<p><i>P-1</i></p>	<p>Topic 2</p> <ol style="list-style-type: none"> 1. Determining the final level of knowledge of students. 2. Solving situational problems, working with test tasks. 3. Independent work of students, mastering practical habits. 4. Writing self-training. 	<p>Evaluation on a 4-point (national) scale.</p>
<p><i>K-1</i></p> <ol style="list-style-type: none"> 1. Etiology, pathogenesis of diseases of the eyelids, 	<p><i>P-1</i></p>	<p>Topic 3</p> <ol style="list-style-type: none"> 1. Determining 	<p>Evaluation on a 4-point</p>

<p>lacrimal organs and orbit, conjunctiva</p> <p>2. Clinic and diagnosis of these diseases.</p> <p>3. Principles of treatment of these diseases.</p> <p>S-1</p> <p>1. Based on complaints and medical history of the patient to choose the symptoms that give reason to suspect the presence. diseases of the eyelids, lacrimal organs and orbits, conjunctiva.</p> <p>2. Perform visometry, biomicroscopy, external examination, instillation of drops into the conjunctival sac, eyelid massage.</p> <p>3. Evaluate and compare the most informative objective signs that confirm the patient's diagnosis of eyelid disease, lacrimal organs and orbit, conjunctiva</p> <p>4. Perform vision research, evaluate visometry, external examination, biomicroscopy.</p>		<p>the final level of knowledge of students.</p> <p>2. Solving situational problems, working with test tasks.</p> <p>3. Independent work of students, mastering practical habits.</p> <p>4. Writing self-training.</p>	<p>(national) scale.</p>
<p>K-1</p> <p>1. Etiology, pathogenesis, diseases of the cornea, sclera, choroid.</p> <p>2. Clinic and methods of diagnosis of these diseases.</p> <p>3. Principles of their treatment and prevention.</p> <p>S-1</p> <p>1. Choose the symptoms that make it possible to suspect diseases of the cornea, sclera, choroid.</p> <p>2. Perform vision research, evaluate visometry, biomicroscopy, ophthalmoscopy.</p> <p>3. Evaluate anigography data.</p>	<p>P-1</p>	<p>Topic 4</p> <p>1. Determining the final level of knowledge of students.</p> <p>2. Solving situational problems, working with test tasks.</p> <p>3. Independent work of students, mastering practical habits.</p> <p>4. Writing self-training.</p>	<p>Evaluation on a 4-point (national) scale.</p>
<p>K-1</p> <p>1. Etiology, pathogenesis of lens diseases. Dystrophic diseases of the vitreous. Glaucoma.</p> <p>2. Clinic and methods of diagnosis of these diseases.</p> <p>3. Principles of their treatment and prevention.</p> <p>S-1</p> <p>1. Choose the symptoms that make it possible to suspect the precursors of glaucoma</p> <p>2. Perform visometry, perimetry, biomicroscopy, ophthalmoscopy, evaluate the OCT data of the retina and optic disc.</p>	<p>P-1</p>	<p>Topic 5</p> <p>1. Determining the final level of knowledge of students.</p> <p>2. Solving situational problems, working with test tasks.</p> <p>3. Independent work of students, mastering practical habits.</p> <p>4. Writing self-training.</p>	<p>Evaluation on a 4-point (national) scale.</p>

<p><i>K-I</i> 11. Etiology, pathogenesis, diseases of the retina, optic nerve and changes in the organ of vision in general diseases. 2. Conservative and surgical treatments for these diseases. <i>S-I</i>, 1. Conduct a survey patients with pathology of the retina, optic nerve and changes in the organ of vision in general diseases. 2. To establish a preliminary diagnosis and be able to make a differential diagnosis of age-related macular degeneration, central serous chorioretinitis, Coates' disease, retinitis pigmentosa, hypoplasia and stagnation of DZN, atrophy of ZN. 3. Carry out direct and indirect ophthalmoscopy, determine the field of view by the control method and with the help of the perimeter, determine the dark adaptation by the control method.</p>	<p><i>P-I</i></p>	<p>Topic 6 1. Determining the final level of knowledge of students. 2. Solving situational problems, working with test tasks. 3. Independent work of students, mastering practical skills. 4. Writing self-training.</p>	<p>Evaluation on a 4-point (national) scale.</p>
<p><i>K-I</i> 1. Classification of eye injuries. 2. Symptoms of orbital fractures. 3. Contusion of the organ of vision, the main symptoms and first aid. 4. Absolute and relative symptoms of penetrating injury. 5. Differential diagnosis of penetrating and non-penetrating injuries. 6. First aid for injuries. 7. Diagnosis of foreign bodies. 8. Clinic of chalcosis and siderosis. 9. Sympathetic ophthalmia, principles of prevention. 10. Burns of the visual organ, classification, main symptoms. 11. First aid for various types of burns, possible complications. <i>S-I</i> 1. Perform instillation of drops. 2. Apply eye ointment. 3. Rinse the eye. 4. Perform the inversion of the upper eyelid. 5. Apply monocular and binocular bandages. 6. Carry out a fluorescein test. 7. Remove the foreign body of the conjunctiva. 8. Remove the foreign body from the surface layers of the cornea and be able to prevent possible complications. 9. Provide emergency care for injuries. 10. Provide first aid for burns.</p>	<p><i>P-I</i></p>	<p>Topic 7 1. Determining the final level of knowledge of students. 2. Solving situational problems, working with test tasks. 3. Independent work of students, mastering practical skills. 4. Writing self-training.</p>	<p>Evaluation on a 4-point (national) scale.</p>
<p><i>K-I</i> 1. Etiology, pathogenesis of emergencies in ophthalmology (acute obstruction of the central vein of the retina and its branches, embolism of the central</p>	<p><i>P-I</i></p>	<p>Topic 8 1. Determining the final level of knowledge of</p>	<p>Evaluation on a 4-point (national) scale.</p>

<p>retinal artery, retinal detachment, phlegmon of the orbit).</p> <p>2. Anatomical and physiological features of the retina and optic nerve.</p> <p>3. Clinic of acute disturbance of blood supply to the retina and optic nerve, optic neuritis, acute glaucoma, retinal detachment.</p> <p>4. Methods of diagnosis of pathology of the retina and optic nerve.</p> <p>5. Treatment of acute disorders of retinal and optic nerve blood supply, optic neuritis, acute glaucoma, retinal detachment.</p> <p>Mind-1</p> <p>1. Conduct a survey patients with pathology of the retina and orbit.</p> <p>2. To establish the preliminary diagnosis and to be able to carry out differential diagnosis of diseases, to make the scheme of treatment of patients with acute disturbance of blood supply of a retina and an optic nerve, a neuritis of an optic nerve, an acute attack of glaucoma, retinal detachment.</p> <p>3. Carry out direct and indirect ophthalmoscopy in acute disorders of retinal blood supply, retinal detachment.</p> <p>2. Be able to interpret the results of ophthalmoscopic examinations. 3. Master the skills of diagnosing orbital phlegmon.</p>	<p>students.</p> <p>2. Solving situational problems, working with test tasks.</p> <p>3. Independent work of students, mastering practical skills.</p> <p>4. Writing self-training.</p>
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Final control

General evaluation system	Participation in the work during the semester 100% on a 200-point scale	
Rating scales	Traditional 4-point scale multi-point (200-point) scale, ECTS rating scale	
Conditions of admission to the final control	The student attended all practical classes and received at least 120 points for current performance	
Type of final control	Methods of final control	Enrollment criteria
Differential credit	All topics must be included, submitted for current control. Grades from the 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the Regulation "Criteria for rules and procedures for evaluating the results of students' learning activities."	<i>The maximum number of points that a student can score for the current educational activity in the study of the discipline is -200.</i> <i>The minimum number of points that a student must score for the current academic activity for enrollment in the discipline is 120.</i>

The calculation of the number of points is based on the grades obtained by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:

For convenience, the table of recalculation on a 200-point scale is given:

Recalculation of the average grade for current activity in a multi-point scale for disciplines ending in differential credit

For convenience, the table of recalculation on a 200-point scale is given:

Recalculation of the average grade for current activity in a multi-point scale for disciplines ending in differential credit

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.45	107	3.91	94	3.37	81
4.95	119	4.41	106	3.87	93	3.33	80
4.91	118	4.37	105	3.83	92	3.29	79
4.87	117	4.33	104	3.79	91	3.25	78
4.83	116	4.29	103	3.74	90	3.2	77
4.79	115	4.25	102	3.7	89	3.16	76
4.75	114	4.2	101	3.66	88	3.12	75
4.7	113	4.16	100	3.62	87	3.08	74
4.66	112	4.12	99	3.58	86	3.04	73
4.62	111	4.08	98	3.54	85	3.	72
4.58	110	4.04	97	3.49	84	Less than 3	Not enough
4.54	109	3.33	96	3.45	83		
4.5	108	3.95	95	3.41	82		

Students' independent work is assessed during the current control of the topic in the relevant lesson. Assimilation of topics, which are submitted only for independent work, is controlled during the final control.

9. Course policy

Obligatory observance of academic integrity by students, independent performance of all types of work, tasks, forms of control provided by the work program of this academic discipline.

10. Literature

1. Vitovska O.V., P.A. Bezditko P.A., Bezkorovayna I.M. et al. / Ophthalmology: textbook; 2nd edition. – 2020. – 648 pages.
2. Kanski Jack J. Clinical Ophthalmology: a systematic approach / Butterworth-Heinemann; 5 edition – 2003. – 748 pages.
3. Khurana A.K. Ophthalmology / New Delphi, 2006.

Additional literature

1. Taylor Asbury, John P. Whitchee / McGraw-Hill Medical; 16th Edition: – 2003. – 466 pages.
2. Lang Gerhard K. Ophthalmology: a short textbook / Stuttgart – New York, 2000.
3. Vaughan & Asbury's General Ophthalmology: Paul Riordan-Eva, Emmett Cunningham / LANGE Clinical Medicine - series / McGraw-Hill Professional; 18 edition - 2011 - 504 pages.
4. Kanski Jack J., Brad Bowling Clinical Ophthalmology: A Systematic Approach: Expert Consult: Online and Print/ Saunders; 7 edition – 2011. – 920 pages.

11. Equipment, logistics and software of the discipline / course

Ophthalmic microscope. 3-seater, operating microscope, AFL-2 laser therapy unit, ophthalmoscopes, ophthalmic combine, slit lamps, lens set, semi-automatic adapter, light test device, Rabkin tables, skiascopic rulers, ophthalmic sign projector, etc.

Methodical support

In textbooks, lecture materials, guidelines updated sections of situational tasks, sections of test tasks for preliminary control in the discipline of "Ophthalmology", updated list of questions for final control and a list of practical skills, thematic plans for independent work of students.

1. Preparation materials for lectures.

2. Lecture presentations.
3. Materials of preparation for practical classes.
4. Methodical instructions for practical classes.
5. Task options for independent and individual work of students.
6. Test tasks for final control.
7. Test tasks for daily control.
8. Variants of theoretical questions for independent study.
9. Situational tasks for practical classes.
10. Situational tasks for final control.

12. Additional information

Syllabus compiler:
Assoc. prof. Kuryltsiv NB

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