

**Ministry of Health of Ukraine
Bogomolets National Medical University
DEPARTMENT OF OPHTHALMOLOGY**

“Approved”
at the meeting of
the Department of Ophthalmology
protocol No.1
from “01” September 2025

Head of the Department,
Doctor of Medicine, Professor
Zhaboiedov D.G.

**GUIDELINES
for independent work of students
For the lesson "Functions of human visual system"**

Academic discipline "Ophthalmology"
Educational level second "Master"
Field of knowledge 22 "Healthcare"
Specialty 221 "Dentistry"

Author:
Associate Professor Greben N.K.

Kyiv – 2025

2. Topic of the lesson: **"Functions of human visual system"**.

3. Competence.

After studying the topic, students should **know**: the functions of the organ of vision; methods for determining the functions of the organ of vision; **be able to**: determine visual acuity by subjective method; determine color perception using Rabkin's polychromatic tables (or Ishihara test plates); determine the visual field using the confrontation visual field testing and using the arc perimeter (or bowl-shaped Goldmann perimeter); determine the dark adaptation by the indicative method.

4. The didactic goal is to expand, deepen and detail the scientific knowledge gained by students at lectures and in the process of independent work and aimed at increasing the level of assimilation of educational material, instilling skills and abilities, developing scientific thinking and oral speech of students.

5. Number of classroom hours: 2 hours.

6. Equipment: tables, drawings, videos, Golovin-Sivtsev chart, Polyak optotypes, Snellen Eye Chart, ETDRS chart, Rabkin polychromatic tables, Ishihara test plates, arc perimeter (or Goldman perimeter, or automated computer visual field analyzer), table lamp, magnifying glass, ophthalmoscope, hand sanitizers.

Lesson plan:

№	The name of the stage	Description of the stage	Levels of learning	Time
1.	Preparatory (15%). Materials of methodological support: questions, tasks of the second level, written theoretical tasks, tests of the second level.	1. Organization of the lesson. 2. Setting educational goals, motivation of the topic. 3. Control of the initial level of knowledge, skills, abilities: 1) study of visual acuity by subjective method; 2) color vision examination; 3) types of color perception disorders; 4) research on adaptation to darkness; 5) types of dark adaptation disorders; 6) examination of peripheral vision;	II	13 Min.

		7) pathology of peripheral vision.		
2.	Basic (65%). Materials of methodological support: atypical tasks in the forms: patients, case histories, text situational tasks; algorithms for the formation of professional skills.	1. Formation of professional skills and abilities: 1) master the skills of objective examination; 2) substantiate the diagnosis based on the results of the study; 3) to supervise the patient, substantiate and make a clinical diagnosis, prescribe treatment.	III	59 Min.
3.	Final (20%). Materials of methodological support: text situational tasks, tests of the third level, results of patient supervision (medical histories); Approximate map of independent work with literature.	1. Control and correction of the level of professional skills and abilities. 2. Discussion of the results of the supervision of patients. 3. Summing up the results of the lesson (theoretical, practical, organizational). 4. Homework: educational literature on the topic (main, additional).	III	18 Min.

7. Recommended literature:

Basic

1. Zhaboyedov G.D., Kireev V.V. Ophthalmology: practicum: educational guide. - K.: VSV "Medicine", 2013. - 280 p.
2. "Ophthalmology" textbook /OP Vitovska et al.; K.: "Medicine", 2017. - 648 c.

Auxiliary

1. Wills Clinic. Diagnosis and treatment of eye diseases / Ed. Douglas Cullom and Benjamin Chang - Lviv: Medicine of the World, 2019. - 504 p.
2. Augusta Azuara-Blanco and others. Glaucoma terminology and guidelines. 5th edition. – 2021, 170 p.
3. Wenger G.Yu., Soldatova A.M., Wenger L.V. Ophthalmology. Course of lectures. – 2010., 180 p.
4. Zavhorodnia N.G., Sarzhevskaya L.E., Ivakhnenko O.M. etc. Anatomy of the eye. Research methods in ophthalmology: teaching. manual for medical students. facts. - Zaporizhzhia, 2017. - 76 p.
5. Carroll, J. N., & Chris A.. Visual field testing: From one medical student to another. The University of Iowa Department of Ophthalmology and Visual Sciences (<https://eyerounds.org/tutorials/VF-testing/>)
6. Jacob Fondriest. Color Vision. (2023) EyeWiki, American Academy of Ophthalmology https://eyewiki.org/Color_Vision