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FACULTY OF MEDICINE

STUDY PROGRAM 0912.1 MEDICINE

CHAIR OPHTHALMOLOGY

APPROVED

at the meeting of the Commission for Quality Assurance and Evaluation of the Curriculum in Medicine

Minutes No. 7 of 17.06.24
Chairman PhD, associate professor
Suman Serghei _____

APPROVED

at the Council meeting of the Faculty

Minutes No. 10 of 18.06.24
Dean of Faculty of Medicine no 2
PhD, associate professor
Bețiu Mircea _____

APPROVED

approved at the meeting of the chair Ophthalmology

Minutes No. 12 of 16.05.2024

Head of chair PhD, professor

Bendelic Eugeniu _____

SYLLABUS

DISCIPLINE OPHTHALMOLOGY

Integrated studies

Type of course: **Compulsory**

Curriculum developed by the team of authors:

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I. INTRODUCTION

- **General presentation of the discipline: place and role of the discipline in the formation of the specific competences of the professional/specialty training program**

Ophthalmology is a specialty, which deals with the detection, diagnosis, treatment and recovery of patients with diseases of eyeball and its accessory structures. Ophthalmology is an interdisciplinary, integrative clinical medical discipline, the study of which at the university level will allow the creation of the necessary skills to support a correct diagnosis based on anamnesis, clinical and paraclinical examination, acquisition of the practical skills required to solve emergency ophthalmological cases, and choosing the right curative management. The content of the course is structured to provide theoretical support and to cultivate the capabilities, skills and attitudes, which are irreplaceable in medical practice in visual analyzer pathology.

- **Mission of the curriculum (aim) in professional training**

One of the main objectives of the course is to acquire basic knowledge of notions in ophthalmological semiology and propedeutics. The second objective is to develop the professional capacities to provide emergency medical care in ophthalmology. The third objective is to know the protocols for the detection of eye diseases, which lead to blindness, and which can be avoided (e.g. glaucoma, cataract, amblyopia). The fourth objective is the orientation of family medicine training with the ability to detect the most common ocular pathologies (conjunctivitis, glaucoma, cataract, eye trauma, etc.).

- **Language(s) of the discipline:** English;
- **Beneficiaries:** students of the IV year, faculty of Medicine No 2.

II. MANAGEMENT OF THE DISCIPLINE

| | | | |
|---------------------------------------|---|----------------------------|-----------------|
| Code of discipline | S.07.0.058 | | |
| Name of the discipline | Ophthalmology | | |
| Person(s) in charge of the discipline | Professor Eugeniu Bendelic; associate professor Ala Paduca | | |
| Year | IV | Semester/Semesters | VII-VIII |
| Total number of hours, including: | | | 60 |
| Lectures | 14 | Practical/laboratory hours | 14 |
| Seminars | 14 | Self-training | 18 |
| Form of assessment | E | Number of credits | 2 |

III. TRAINING AIMS WITHIN THE DISCIPLINE

At the end of the discipline study the student will be able to:

- **at the level of knowledge and understanding:**
 - ✓ To identify anatomical and physiological features of the visual system;
 - ✓ To establish the topical diagnosis based on defined clinical syndromes;



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- ✓ To know thoroughly the etiopathogenesis, clinical features, diagnosis, treatment principles and prevention of the most common ocular diseases.
- **at the application level:**
 - ✓ To take the anamnesis and evaluate the data about visual system functions;
 - ✓ To perform the ophthalmologic examination;
 - ✓ To apply the diagnostic methods in ocular pathologies;
 - ✓ To evaluate the results of clinical trials and tests, additional diagnostic investigations to appreciate the functional status of the visual system;
 - ✓ To apply the methods of examination of emergency patient, evaluate these results and provide the necessary first aid.
- **at the integration level:**
 - ✓ To appreciate the importance of ophthalmology in the context of Medicine and integration with related medical disciplines;
 - ✓ To appreciate the evolution of the physiological processes and etiology of the pathological processes of the visual system;
 - ✓ To supervise the pathological processes and to use the methods of investigation, treatment and prophylaxis of visual analyzer diseases
 - ✓ To evaluate the results of the diagnostic methods in ophthalmologic diseases;
 - ✓ To develop scientific research projects in Ophthalmology;
 - ✓ To have skills to implement and integrate clinical knowledge;
 - ✓ To be able to assimilate new achievements in clinical disciplines.

IV. PROVISIONAL TERMS AND CONDITIONS

Student of the IV year requires the following:

- ✓ knowledge of the language of education;
- ✓ confirmed competences in lyceum sciences (biology, physics) and thorough knowledge gained in fundamental disciplines such as: anatomy, physiology, biochemistry and others.
- ✓ digital competences (use of the Internet, processing of documents, electronic tables and presentations, use of graphics programs);
- ✓ ability to communicate and to work in a team;
- ✓ such qualities, as tolerance, compassion, autonomy.

V. THEMES AND ESTIMATE ALLOCATION OF HOURS

Lectures, practical hours/ laboratory hours/seminars and self-training

| No. d/o | THEME | Number of hours | | | |
|---------|--|-----------------|----------|-----------------|---------------|
| | | Lectures | Seminars | Practical hours | Self-training |
| 1. | Anatomic and clinical features of the visual analyzer. Particularities of the orbital structure and the orbital relation with the paranasal sinuses. Eye adnexa: the eyelids, the lacrimal system and the conjunctiva: structure and functions. Eyeball: external (cornea and sclera), medium (uvea), internal (retina): layers, structure and functions. Structure of the anterior | 1 | 1 | 1 | 2 |



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| No. d/o | THEME | Number of hours | | | |
|---------|---|-----------------|----------|-----------------|---------------|
| | | Lectures | Seminars | Practical hours | Self-training |
| | chamber angle. Circulation of the aqueous humor. Content of the eyeball: the lens, the vitreous and the aqueous humor. Optical pathway of visual system. | | | | |
| 2. | Functions of the visual system, its possible disturbances and examination methods. Function of rods and cones, the importance of vitamin A in the visual act. Photosensitivity, its disturbances and examination methods. Central vision, examination methods. Peripheral vision, major disturbances and examination methods. Chromatic sense: anomalies of the chromatic sense (congenital, acquired), examination methods. | 1 | 1 | 1 | 2 |
| 3. | Clinical refraction and accommodation of the eye. Optical system of the eye. Clinical refraction and examination methods. Hypermetropia: classification, clinical manifestations, treatment. Myopia: classification, clinical manifestations, complications, treatment. Accommodation of the eye. Disorders of accommodation. | 1 | 1 | 1 | 2 |
| 4. | Binocular vision and its disturbances. Neutralization, amblyopia. Examination methods for binocular vision. Notions in strabismus - classification, etiology, pathogenesis, clinical manifestations. Comitant strabismus vs. incomitant strabismus. Methods of examination. The management of strabismus. Methods of prophylaxis. | 1 | 1 | 1 | 2 |
| 5. | Diseases of the eyelid, conjunctiva, and lacrimal system. Blepharitis: etiology, clinical manifestations, treatment. Eyelids position abnormalities. Hordeolum (stye): clinical manifestations, treatment. Chalazion: etiology, clinical manifestations, treatment. Dacryoadenitis: clinical manifestations, treatment. Acute and chronic dacryocystitis: clinical manifestations, treatment. Bacterial, viral and allergic conjunctivitis: clinical manifestations, treatment, prophylaxis. | 2 | 1 | 1 | 2 |
| 6. | Diseases of the cornea and sclera. Classification of keratitis and etiological factors. Corneal ulcer: clinical manifestations, treatment. Viral (herpetic), bacterial, fungal, parasitic keratitis: clinical manifestations, treatment. Episcleritis and | 1 | 1 | 1 | 2 |



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| No. d/o | THEME | Number of hours | | | |
|--------------|---|-----------------|-----------|-----------------|---------------|
| | | Lectures | Seminars | Practical hours | Self-training |
| | scleritis: etiology, clinical manifestations, treatment. | | | | |
| 7. | Congenital and acquired diseases of the lens. Congenital cataract: etiologic factors, clinical manifestations, treatment. Acquired cataract, etiologic factors, clinical manifestations, treatment | 1 | 1 | 1 | 1 |
| 8. | Diseases of the uvea, retina and optic nerve. Uveitis: classification, etiology. Iridocyclitis: clinical manifestations, treatment. Choroiditis: clinical manifestations, treatment. Hypertensive retinopathy, Diabetic retinopathy. Central retinal artery occlusion (CRA). Thrombosis of the central vein of the retina (CVR). Intraocular tumors: diagnosis, treatment. Retinal detachment: clinical manifestations, treatment. Optical neuritis (papillitis and retrobulbar neuritis). Papillary stasis, etiologic factors, clinical manifestations, treatment. Optic nerve atrophy. | 3 | 2 | 2 | 2 |
| 9. | Glaucoma. Classification, pathogenesis and methods of diagnosis. Primary open-angle glaucoma: clinical manifestations, treatment. Acute glaucoma: clinical manifestations, differential diagnosis, treatment. Secondary glaucoma: etiology, clinical manifestations. Congenital glaucoma: clinical manifestations, treatment. | 1 | 1 | 1 | 1 |
| 10. | Eye trauma. Causes and forms of eye trauma. Clinical signs of orbital lesions, treatment. Eyelid, conjunctiva lesions. Eye contusions: clinical manifestations, treatment. Ocular penetrating trauma: clinical manifestations, treatment. Sympathetic ophthalmia: etiology, clinical manifestations, treatment. Ocular actinic burns: treatment, prophylaxis. Ocular chemical burns: clinical manifestations, treatment. | 2 | 2 | 2 | 2 |
| | Practical skills | | 2 | 2 | |
| Total | | 14 | 14 | 14 | 18 |
| | | 60 | | | |



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VI. PRACTICAL TOOLS PURCHASED AT THE END OF THE COURSE

- Mandatory essential practical tools are:
- ✓ Eyelids and anterior segment examination;
 - ✓ Visual Acuity Examination;
 - ✓ Visual Field Examination;
 - ✓ Chromatic vision examination;
 - ✓ Examination of binocular vision and eye movements;
 - ✓ Light sensibility examination;
 - ✓ Eye refraction examination;
 - ✓ General rules in prescriptions of glasses for: Myopia, Hyperopia, Presbyopia;
 - ✓ Squint examination: Hirschberg method and Cover test;
 - ✓ Examination of lacrimal system (permeability and function);
 - ✓ Examination of Pupillary reflex;
 - ✓ Intraocular pressure (IOP) Measurement;
 - ✓ Ocular Chemical Burn - (emergency) treatment;
 - ✓ Removing of Conjunctival Foreign Body and Corneal Foreign Body;
 - ✓ Localizations of Intraocular Foreign Body;
 - ✓ Posterior Segment Examination (Ophthalmoscopy);
 - ✓ General rules in ocular drops instillation and application ointment.

Note: The essential practical tools characteristic of the discipline, obligatory to be acquired by each student during the module, will be listed. These will serve as a basis for the stage of evaluating practical skills and will constitute their portfolio per study program.

VII. OBJECTIVES AND CONTENT UNITS

| Objective | Content units |
|---|---|
| Chapter 1. Anatomic and clinical features of the visual analyzer. Functions of the visual system. | |
| <ul style="list-style-type: none"> • To define the notions in clinical semiology of the visual system • To know the structure and functions of the eyeball and accessory structures of the eye • To demonstrate the examination of the accessory structures of the eye, the anterior pole of the eye (with diffuse light, focused light). • To apply the collection and interpretation of the ophthalmological anamnesis • To determine the light perception and its disturbances; to determine visual acuity (VA) in adults and children • To possess skills for local administration of ophthalmic medicines • To examine the visual field (comparative method, perimetry, campimetry), visual field disturbances: scotomas, hemianopsias, etc. and to interpret them • To determine the chromatic sense and detect | <p>Accessory structures of the eye: the eyelids, the lacrimal system and the conjunctiva: structure and functions. Coats of the eyeball: external (cornea and sclera), medium (uvea), internal (retina): structure and functions. Structure of the anterior chamber angle. Ways of production and evacuation of the aqueous humor. Content of the eyeball: the lens, the vitreous and the aqueous humor. Optical pathway of visual system. Oculo-motor system. Oculo-motor nerves. Function of rods and cones, the importance of vitamin A in the visual act. Photosensitivity, its disturbances and examination methods. Central vision, examination methods. Peripheral vision, major disturbances and examination methods. Chromatic</p> |



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| Objective | Content units |
|---|--|
| dyschromatopsia. | sense: anomalies of the chromatic sense (congenital, acquired), examination methods. |
| Chapter 2. Clinical optics (refraction) of the eye. Accommodation of the eye. Binocular vision and its disturbances. Notions in strabismus. | |
| <ul style="list-style-type: none"> To know the basic symptoms of the ocular refraction errors To detect refractive errors by the subjective method To know the basic principles of management of ocular refractive errors To know the mechanism of ocular accommodation and its disorders To know the principle of optical management of presbyopia | <p>Clinical and physical refraction. Errors of ocular refraction - Myopia, Hypermetropia - symptomatology, management.</p> <p>Accommodation of the eye. Disorders of accommodation - presbyopia, spasm of accommodation, paralysis of accommodation</p> |
| <ul style="list-style-type: none"> To know the mechanism of binocular vision development, its importance To know the basic methods of examination of binocular vision To know the major binocular and monocular vision disorders. To know the major types and forms of strabismus To be able to distinguish a functional strabismus from a paralytic one To evaluate the degree of ocular deviation using the Hirshberg method To know the basic principles of strabismus management | <p>Binocular vision - development, examination.</p> <p>Disorders of binocular and monocular vision, neutralization and amblyopia - causes, management, prophylaxis.</p> <p>Notions in strabismus.</p> <p>Differential diagnosis of paralytic and functional strabismus.</p> <p>Management of patients with strabismus and prophylaxis.</p> |
| Chapter 3. Diseases of the eyelid, conjunctiva, and lacrimal system. Diseases of the cornea and sclera. | |
| <ul style="list-style-type: none"> To perform eyelid eversion, examination of palpebral conjunctiva, inferior and superior conjunctival fornix and conjunctival layer of bulb To define the symptoms of "dry eye" and "wet eye" To examine the function of the lacrimal gland and the permeability of the tear pathways To differentiate the symptoms of bacterial conjunctivitis from viral and allergic conjunctivitis To know the particularities of corneal disease symptoms (corneal syndrome) based on clinical cases To examine corneal sensitivity with | <p>Blepharitis. Blepharospasm, ptosis, lagophthalmos. Hordeolum. Chalazion. Dacryoadenitis. Acute and chronic dacryocystitis. Bacterial, viral and allergic conjunctivitis. Pterygium.</p> <p>Diseases of the cornea and sclera. Corneal ulcer. Viral (herpetic), bacterial, fungal, parasitic keratitis: clinical manifestations, treatment.</p> <p>Keratoconus.</p> <p>Episcleritis and scleritis.</p> <p>Myopia. Hypermetropia.</p> <p>Astigmatism. Presbyopia.</p> |



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| Objective | Content units |
|--|--|
| distinguishing of corneo-conjunctival lesions (fluorescein test). | |
| Chapter 4. Congenital and acquired diseases of the lens. Glaucoma. | |
| <ul style="list-style-type: none"> To know the particularities of examining patients with lens diseases, based on clinical cases To know general principles of cataract treatment and indications for surgical treatment To integrate differentiation of primary open-angle and angle closure glaucoma symptoms To differentiate primary and secondary glaucoma To determine the intraocular pressure To apply diagnostic methods to confirm or infirm glaucoma To provide emergency medical care in acute glaucoma To know the principles of complex glaucoma treatment To integrate the particularities of the conduct of glaucoma patients | Congenial cataract. Acquired cataract. Glaucoma. Classification, pathogenesis and methods of diagnosis. Primary open-angle glaucoma. Acute glaucoma. Secondary glaucoma. Congenital glaucoma. |
| Chapter 5. Diseases of the uvea, retina and optic nerve. | |
| <ul style="list-style-type: none"> To examine the pupil reflexes To examine the uveal tract and the posterior pole: optic nerve, macular region, retinal vessels, retinal periphery (principles of ophthalmoscopy). To know the particularities of the symptoms of inflammatory diseases at different levels of the uveal tract. To integrate acute iridocyclitis management into differential diagnosis To know the particularities of retinal disease symptomatology based on clinical cases To apply central artery and vein occlusion management To perform the differential diagnosis of primary and secondary retinal detachment To differentiate the symptoms of papillitis, retrobulbar neuritis and papillary stasis. | Uveitis. Iridocyclitis. Choroiditis. Hypertensive retinopathy, Diabetic retinopathy. Central retinal artery occlusion (CRA). Thrombosis of the central vein of the retina (CVR). Intraocular tumors. Retinal detachment. Optical neuritis (papillitis and retrobulbar neuritis). Papillary stasis, optic nerve atrophy. |
| Chapter 6. Eye and ocular adnexa trauma | |
| <ul style="list-style-type: none"> To provide urgent medical first aid in case of conjunctival and corneal foreign bodies To apply monocular and binocular bandages To know the particularities of the | Eye trauma. Orbital traumatic lesions. Eyelid, conjunctival lesions. Eye contusion. Ocular penetrating trauma. Sympathetic ophthalmia. Ocular actinic |



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| Objective | Content units |
|--|---|
| symptomatology and the primary management of penetrating ocular injuries <ul style="list-style-type: none">• To know the methods of detection of intraocular foreign bodies• To know the particularities of symptomatology and medical care in ocular contusion• To know and to possess the first aid (emergency medical care) in case of ocular burns | burns. Ocular chemical burns. Particularities of trauma in children. Occupational eye diseases. |

VIII. PROFESSIONAL (SPECIFIC (SC)) AND TRANSVERSAL (TC) COMPETENCES AND STUDY FINALITIES

✓ **Professional (specific) (SC) competences**

- PC1. Responsible execution of professional tasks with the application of the values and norms of professional ethics, as well as the provisions of the legislation in force.
- PC2. Adequate knowledge of the sciences about the structure of the body, physiological functions and behavior of the human body in various physiological and pathological conditions, as well as the relationships between health, physical and social environment.
- PC3. Resolving clinical situations by developing a plan for diagnosis, treatment and rehabilitation in various pathological situations and selecting appropriate therapeutic procedures for them, including providing emergency medical care.
- PC4. Promoting a healthy lifestyle, applying prevention and self-care measures.
- PC5. Interdisciplinary integration of the doctor's activity in a team with efficient use of all resources.
- PC6. Carrying out scientific research in the field of health and other branches of science.

✓ **Transversal competences (TC)**

- TC1. Autonomy and responsibility in the activity.

✓ **Study finalities**

- To appreciate the importance of ophthalmology in the context of Medicine and integration with related medical disciplines;
- To be competent to use critical and reliable scientific information obtained using the new information and communication technologies;
- To appreciate the evolution of the physiological processes and etiology of the pathological processes of the visual analyzer;
- To supervise the pathological processes and to use the methods of investigation, treatment and prophylaxis of visual analyzer diseases;
- To evaluate the results of the diagnostic methods in ophthalmologic diseases;
- To develop scientific research projects in Ophthalmology;
- To have skills to implement and integrate clinical knowledge;
- To be able to assimilate new achievements in clinical disciplines.

Note. Discipline finalities (are deduced from the professional competences and the formative valences of the informational content of the discipline).



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IX. STUDENT'S SELF-TRAINING

| No. | Expected product | Implementation strategies | Assessment criteria | Implementation terms |
|-----|---|--|---|----------------------|
| 1. | Work with information sources | <p>Mindful study of the lecture or the material in the manual on the theme.</p> <p>Reading the questions on the theme, which require a reflection on the subject.</p> <p>To get acquainted with the list of additional information sources on the topic. Select the source of additional information for that theme.</p> <p>Reading the text entirely, mindfully and writing the essential content.</p> <p>Formulating of generalizations and conclusions regarding the importance of the theme/subject.</p> | Ability to extract the essentials; interpretative skills; volume of work | During the semester |
| 2. | Work with activity book | <p>To analyze the information and images on the respective subject in the lecture and handbook until solving the tasks in the notebook. Consecutive solving of tasks. Formulating conclusions at the end of each lesson. Verifying the finalities of the respective lesson and appreciating of their achievement. Selection of additional information, using electronic addresses and additional bibliography.</p> | Volume of work, solving of the situational problems, ability to formulate conclusions. | During the semester |
| 3. | Practice of different studying techniques | | Volume of work, degree of understanding the essence of different topics, level of scientific argumentation, quality of conclusions, elements of | During the semester |

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| No. | Expected product | Implementation strategies | Assessment criteria | Implementation terms |
|-----|--|--|--|----------------------|
| | | | creativity, demonstration of understanding the problem, formation of personal attitude | |
| 4. | Work with online sources | Online self-evaluation, study of online materials from the chair site, expressing own opinions through forum and chat. | Number and duration of entries on the site, self-evaluation results | During the semester |
| 5. | Elaboration and presenting of presentations/portfolios | Choosing of the research theme, establishment of the research plan, setting the terms of realization. Establishing Power Point project/theme components - theme, purpose, results, conclusions, practical applications, bibliography. Colleagues reviews. Teacher reviews. | Volume of work, degree of understanding the essence of the project theme, the level of scientific argumentation, the quality of conclusions, elements of creativity, formation of the personal attitude, coherence of the explanation and the scientific correctness, graphic presentation, way of presentation. | During the semester |

X. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

✓ Teaching and learning methods used

The teaching of the Ophthalmology discipline uses different ways and didactic methods, oriented towards the efficient acquisition and achievement of the objectives of the didactic process. In the theoretical lessons, along with traditional methods (lesson-exposure, lesson-conversation, synthesis lesson), modern methods (lesson-discussion, lesson-conference, problem-lesson) are also used. There are used individual, frontal, group activity forms in the practical hours. In order to assimilate deeper the material, different semiotic systems (scientific language, graphical and computerized language) and teaching materials (tables, diagrams, posters) are used. During the lessons and extracurricular activities there are used Communication Technologies – Power Point presentations.

Recommended learning methods:

- ✓ **Observation** - Identification of the elements characteristic for structures or biological phenomena, description of these elements or phenomena.
- ✓ **Analysis** - Imaginary decomposition of the whole into component parts. Highlighting the essential elements. Studying each element as part of the whole.

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- ✓ **Scheme/figure analysis** - Selection of the necessary information. Recognition of structures shown in schemes and figures based on selected knowledge and information. Analysis of the functions/role of recognized structures.
 - ✓ **Comparison** - Analysis of the first object/process from a group and determination of its essential features. Analysis of the second object/process and determination of its essential features. Comparing objects/processes and highlighting common features. Comparing objects/processes and determining differences. Establishment of difference criteria. Formulation of conclusions.
 - ✓ **Classification** - Identification of the structures / processes that should be classified. Determining the criteria on which classification is should be made. Distribution of structures/processes by groups according to established criteria.
 - ✓ **Elaboration of the scheme** - Selection of elements, which must be included in the scheme. Interpretation of selected elements with different symbols/colors and indicating their relationships. Formulation of an appropriate title and legend of the symbols used.
 - ✓ **Modeling** - Identifying and selecting the elements needed to model the phenomenon. The imaging (graphical, schematic) of the studied phenomenon. Realizing the phenomenon using the developed model. Formulation of conclusions, deduced from arguments or findings.
 - ✓ **Experiment** - Formulation of a hypothesis, based on known facts, on the studied process/phenomenon. Verifying the hypothesis by performing the studied processes/phenomena in laboratory conditions. Formulation of conclusions, deduced from arguments or findings.
- ✓ **Applied (specific to the discipline) teaching strategies / technologies**
- "Brainstorming" "Multi-voting"; "Round table"; "Group Interview"; "Clinical case study"; "Creative Controversy"; "Focus-group technique", "Portfolio". Virtual Practical work.
- ✓ **Methods of assessment (including the method of final mark calculation)**
- ✓ **Current:** frontal and/or individual control through
 1. (a) applying docimological tests,
 2. (b) analysis of case studies.
 - ✓ **Final:** is a standardized exam, scheduled in the exam sessions, which contains two evaluation modes: practical test and written test (SIMU).

Practical test. Student has 30 minutes for preparation after which the teacher examines the level reached in the training of practical skills, specific abilities and capacities according to the obligatory list. The test is scored from 0 to 10. The mark will be announced to the student at the end of the practical test.

Written test. The grid test includes variants of 50 questions each, from all subjects covered in the analytical curriculum of the discipline, according to the unique bibliography of the study discipline, displayed and announced to students at the beginning of the semester. The student has 50 minutes to complete the test. All students in the year support the grid test under the same conditions (same time interval). The score is from 0 to 10. ALL of the notes are posted public.

The final mark will consist of the average mark of four current tests (part 0.5), the marks of all of the final examination stages (practical skills - part 0.2, written test - part 0.3).



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Method of mark rounding at different assessment stages

| Intermediate marks scale (annual average, marks from the examination stages) | National Assessment System | ECTS Equivalent |
|--|----------------------------|-----------------|
| 1,00-3,00 | 2 | F |
| 3,01-4,99 | 4 | FX |
| 5,00 | 5 | E |
| 5,01-5,50 | 5,5 | |
| 5,51-6,0 | 6 | |
| 6,01-6,50 | 6,5 | D |
| 6,51-7,00 | 7 | |
| 7,01-7,50 | 7,5 | C |
| 7,51-8,00 | 8 | |
| 8,01-8,50 | 8,5 | B |
| 8,51-9,00 | 9 | |
| 9,01-9,50 | 9,5 | A |
| 9,51-10,0 | 10 | |

The average annual mark and the marks of all stages of final examination (computer assisted, test, oral) - are expressed in numbers according to the mark scale (according to the table), and the final mark obtained is expressed in number with two decimals, which is transferred to student's record-book.

Absence on examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations in the failed exam.

XI. RECOMMENDED LITERATURE:

A. Compulsory:

1. Lecture material.
2. Adam T. Gerstenblith, Michael P. Rabinowitz. The Wills eye manual. Office and Emergency Room. Diagnosis and Treatment of Eye Disease/ Sixth edition. - ISBN 13:978-1-4511-7584-4.
3. International Council of Ophthalmology Handbook for Medical Students Learning Ophthalmology [PDF]. ICO Handbook for Medical Students Learning Ophthalmology. www.icoph.org/downloads/icomedicalstudentenglish.pdf.
4. Nicula, Cristina. Ophthalmology. /C. Nicula; University of Medicine and Pharmacy "Iuliu Hațieganu", Cluj-Napoca. - Cluj-Napoca: Editura Medicală Universitară "Iuliu Hațieganu", 2011. - 136 p.. - ISBN 978-973-693-435-3.
5. Clinical Ophthalmology Made Easy. A Samuel Gnanadoss. Jaypee Brothers Medical Publishers/ First Edition: 2009. ISBN 978-81-8448-611-7.

B. Additional:

1. Basic and Clinical Science Course. The Foundation of the American Academy of Ophthalmology. 12 Vol. 2002-2003.



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2. Bowling, Brad. Kanski's clinical ophthalmology: a systematic approach. - 8th ed.. - [S. l.]: Elsevier, 2016.
3. Daniel Vaughan, Taylor Asbury. General Ophthalmology. California. Lange Medical Publications. 7 th Edition.
4. Kanski J. Clinical Ophthalmology a systematic approach. – Oxford, 2002.
5. Ophthalmology. A Short Textbook, New York, 2000, Gerhard K. Lang, M. D. 305 Illustrations.
www.gulfkids.com/pdf/ATLAS%20-%20Ophthalmology.pdf
6. Review of Ophthalmology. AK Knurana/ Sixth Edition: 2015. – The Health Sciences Publisher. ISBN 978-93-5152-948-4.
7. Practical Ophthalmology (PDF Download Available).
https://www.researchgate.net/publication/316107859_Practical_Ophthalmology