INTERNATIONAL HIGHER SCHOOL OF MEDICINE
SPECIAL CLINICAL DISCIPLINES DEPARTMENT
OPHTHALMOLOGY

SYLLABUS
Ophthalmology

2026-2027 academic year
For students of medical faculty 4th Course VIIIth Semester
1 – 8 groups of the Central Campus
1-3 groups of the Issykkul Campus
4 credits (120 h, including auditorial -72 h, independent work – 48 h)

Lectures:	**Lecturers:**
1-8 groups Central Campus	**Bazarbaeva Chinara Satybaldievna** 0 558 110 174 (Whatsapp) Email: chinarabazarbaeva@yahoo.com
1,2,3 groups Issykkul Campus	**Beknazarova Baian Achilovna** **0 554 044 819** (Whatsapp) Email: beknazarova_77@list.ru
Practical classes:	
1,3,4 groups Central Campus	**Bazarbaeva Chinara Satybaldievna** 0 558 110 174 (Whatsapp) Email: chinarabazarbaeva@yahoo.com
2,5 groups Central Campus	**Umetova Aynazik Ubaidildaevna** 0 505 008 208 (Whatsapp) Email: ainazik.umetova@gmail.com
6,7,8 groups Central Campus	**Sagynbekova Gulzada Sagynbekovna** 0702 500 502 (Whatsapp)
1,2,3 groups Issykkul Campus	**Beknazarova Baian Achilovna** **0 554 044 819** (Whatsapp) Email: beknazarova_77@list.ru

Organizing specifications to students:
Lectures: online using zoom
Practice: «Vedanta plus», 1B Fuchik str., classroom № 203, 206, 307.

The Syllabus is considered
at the meeting of the department of Special clinical disciplines
Protocol №___1__dated____28th of August 2026

Head of the department_____D.A. Maktybaeva

Course Objective: to acquire theoretical knowledge and practical skills needed to be a doctor of General practice to provide eye care to adults and children with pathology of the eye.

After study of the discipline the student must:

Know:

- methods of examination of the organ of vision;
- the procedure for examining children and adolescents when prescribing optical correction of ametropia;
- general semiotics of eye diseases, clinic of widespread inflammatory diseases of the organs of vision,

pathology of the cornea and lens in adults and children;

- clinical signs of glaucoma;
- clinical syndromes of emergency conditions in ophthalmology (vascular disorders, acute attack of angle

closure glaucoma, injuries, wounds, burns, frostbite);

- principles of clinical diagnosis of common eye diseases and emergency conditions in ophthalmology in

adults and children;

- forprinciples of clinical diagnosis of common eye diseases and emergency conditions in ophthalmology in adults and children;
- forms and methods of topical application of medicines in ophthalmology;
- principles of organizing the work of doctors of various specialties in the provision of emergency first aid

in emergency conditions in ophthalmologyms and methods of topical application of medicines in ophthalmology

Be able to:

- freely use clinical examination methods;
- to evaluate the data of anamnesis, clinical examination, laboratory data to build a clinical diagnosis;
- prescribe adequate treatment;
- evaluate the outcome of the disease, outline the ways of rehabilitation of patients;
- to apply in professional activity the knowledge, abilities, skills acquired in the course of mastering the discipline

Attitude:

- skills to determine visual acuity,
- the skills of determining the type of refraction by the subjective method,
- skills in the selection of spherical glasses,
- skills in the study of peripheral vision (control method, perimetry),
- skills for determining color perception
- skills in determining binocular vision,
- skills of examination of the organ of vision: in side illumination, in transmitted light,
- skills of conducting ophthalmoscopy in reverse, in direct form
- eyelid eversion methods,
- skills in instillation of eye drops,
- skills in laying eye ointment,
- skills to study the patency of the lacrimal ducts (tubular and nasal samples),
- skills to study the sensitivity of the cornea and the integrity of its epithelium,
- skills in conducting biomicroscopy of the anterior segment of the eye,
- skills to remove foreign bodies from the conjunctiva and cornea,
- skills in determining ophthalmotonus (by palpation and tonometer),
- skills in applying mono- and binocular bandages,

- skills of X-ray localization of foreign bodies in the eye,
- skills in writing prescriptions for the treatment of the most common diseases of the eye,
- skills of registration of medical documentation (outpatient card, medical history, etc.

Pre-requisites. Anatomy (macro-microanatomy), pathological anatomy, pathological physiology, medical biology, medical physics, bioethics, therapy
Post-requisites. Family medicine

THEMATIC PLAN OF LECTURES

№	Theme of lecture	Hours	Date
1.	Introduction to ophthalmology. Achievements of international ophthalmology. Embryogenesis and clinical anatomy of the eye and adnexa. Age dynamics of the visual functions of the eye.	2	1.09.2026
2.	Optical system of the eye. Clinical refraction. Refraction errors	2	2.09.2026
3.	Binocular vision. Strabismus.	2	3.09.2026
4.	Diseases of anterior segment of eye. Blepharitis. Diseases of lacrimal organs. Diseases of the conjunctiva.	2	4.09.2026
5.	Keratitis. Uveitis	2	5.09.2026
6.	Cataract. Glaucoma. Classification. Types. Clinic. Treatment	2	7.09.2026
7.	Injury of the organ of vision. Classification. Diagnostics. Clinical signs.	2	08.09.2026
8.	Diseases of the retina and optic nerve.	2	09.09.2026

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours	Date
1.	Clinical anatomy of the eye adnexa.	2	21.09.26-26.09.26
2.	Clinical anatomy of the eye.	2	21.09.26-26.09.26
3.	Physiology of vision. Central vision. Central vision disorders	2	28.09.26-03.10.26
4.	Physiology of vision. Peripheral vision. Peripheral vision disorders	2	28.09.26-03.10.26
5.	Optic system of the eye. Clinical refraction. Emmetropia. Accommodation.	2	05.10.26-10.10.26
6.	Astigmatism. Myopia, sign and symptoms. Hypermetropia, sign and symptoms. Correction, treatment	2	05.10.26-10.10.26
7.	Module №1	2	12.10.26-17.10.26
8.	Binocular vision. Strabismus.	2	12.10.26-17.10.26
9.	Methods of examination in ophthalmology.	2	19.10.26-24.10.26
10.	Blepharitis. Conjunctivitis.	2	19.10.26-24.10.26

11.	Keratitis. Scleritis.	2	26.10.26-31.10.26
12.	Diseases of lacrimal system. Orbital disorders.	2	26.10.26-31.10.26
13.	Anterior uveitis.	2	02.11.26-07.11.26
14.	Posterior and systemic uveitis.	2	02.11.26-07.11.26
15.	Module №2	2	09.11.26-14.11.26
16.	Cataract. Classification. Symptoms. Treatment.	2	09.11.26-14.11.26
17.	Glaucoma. Etiology. Classification. Congenital glaucoma.	2	16.11.26-21.11.26
18.	Primary glaucoma. Classification, diagnostics, treatment.	2	16.11.26-21.11.26
19.	Secondary glaucoma. Diagnostics, treatment.	2	23.11.26-28.11.26
20.	Injury of the orbit and organ of vision. Classification. Diagnostics.	2	23.11.26-28.11.26
21.	Penetrating eye injuries with or without foreign bodies. Diagnostics. Treatment. Complications	2	30.11.26-05.12.26
22.	Burns the organ of vision.	2	30.11.26-05.12.26
23.	Diseases of retina.	2	07.12.26-12.12.26
24.	Diseases of optic nerve.	2	07.12.26-12.12.26
25.	Diabetes of eye.	2	14.12.26-19.12.26
26.	Endocrine ophthalmopathology.	2	14.12.26-19.12.26
27.	Lesions of organ of vision in general diseases (HIV and AIDS, tuberculosis and syphilis of eye)	2	21.12.26-26.12.26
28.	Module №3	2	21.12.26-26.12.26

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

Unit №	Theme of independent work	Hours	Date
1.	Organization of ophthalmic services in India, Pakistan	3	21.09.26-26.09.26
2.	Types of perimetry. Topical diagnostics of abnormalities of visual field according of localization.	3	28.09.26-03.10.26
3.	Computer-visual syndrome.	3	05.10.26-10.10.26
4.	Current refractive surgery of ametropia.	3	12.10.26-17.10.26
5.	Myopic disease	3	19.10.26-24.10.26

6.	Methods of treatment in ophthalmology.	3	26.10.26-31.10.26
7.	Principles of conservative and surgical treatment of strabismus.	3	02.11.26-07.11.26
8.	Red eye syndrome without visual impairment	3	09.11.26-14.11.26
9.	Damage to the organ of vision in tropical diseases.	3	16.11.26-21.11.26
10.	Uveopathies	3	23.11.26-28.11.26
11.	Syndromes associated with uveitis.	3	30.11.26-05.12.26
12.	Current cataract surgery	3	07.12.26-12.12.26
13.	Current glaucoma surgery	3	14.12.26-19.12.26
14.	Syndrome of White eye with gradual decreasing vision	3	21.12.26-26.12.26
15.	Diabetes of eye.	3	21.12.26-26.12.26
16.	Retinal detachment.	3	21.12.26-26.12.26

Recommended reading for the discipline:

Basic:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures (methodical manual) Bazarbaeva Ch.S. 2015

Additional:

1. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2018-2019
2. Kanski. Clinical ophthalmology. 2015
3. Atlas of Ophthalmology. Kanski
4. Comprehensive ophthalmology /Khurana/.-Kolkata, 2011
5. Basic Ophthalmology. 9 editions
6. Practical ophthalmology. Fred M Wilson
7. Parson’s Diseases of the eye. Twentieth edition. Ramanjit Sihota. 2007

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):
current score - 40 points
independent work - 20 points
control score (final assessment of knowledge per unit) - 40 points
Maximum score - 100 (40+20+40)

Grading system for student’s achievements

Grading criteria per discipline

Maximum score	Intervals			
	«unsatisfactory»	«satisfactory»	«good»	«excellent»
Current control - 40	0-23	24-30	31-35	36-40
Interval description	Student misses classes often, does not do homework, does not prepare for class, is not active. Unable to apply acquired knowledge	Student misses classes sometimes, completes tasks, but with gross errors, is active in class, but does not differentiate the diagnosis	Student misses classes rarely, is active, almost always ready for the lesson. Able to solve clinical problems with small errors	Attends all classes, correctly analyzes the clinical problem with various diseases
Independent work - 20	0-11	12-15	16-17	18-20
Interval description	Tasks are not completed, or there are many errors, the requirements for compiling the work are not met	Tasks are completed, but with errors	Tasks run mostly without errors	All tasks are completed without errors, the work is designed according to the model
Control work (module) - 40	0-23	24-30	31-35	36-40
Interval description	The answer is disparate knowledge with significant errors, there is fragmentation, fragmentation, the student is not aware of the connection of the question with other objects. Speech is illiterate, errors in demonstrating exercises, incorrect	The answer is not complete, with errors, does not show the ability to reveal the meaning of generalized knowledge, speech design requires amendments, logic and sequence have violations, there is no ability to independently identify essential features and cause-and-	A full detailed answer is given to the question posed, the ability to identify essential signs of cause-and-effect relationships is shown, the story is not logical enough with single errors, lack of confidence in the demonstration of exercises, single errors	A complete detailed answer to the question is given The answer shows a clear structure, a logical sequence that reflects the essence of the disclosed concepts, theories, phenomena The correct choice of tactics for performing exercises, the answers to

	choice of tactics for this disease, incorrect answers to questions	effect relationships Mistakes in choosing the right treatment tactics	in the technique of performing exercises	questions are clear

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).
- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-5 points.

Academic Ethics Policy.
- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-5 points.

Guidelines for the lessons of the discipline

Key questions covered in lesson 1. Clinical anatomy of the eye adnexa.

1. Anatomy, topography of the eye adnexa on tables, models, slides and eyes of animals (bull eyes).
2. Innervation, blood supply to the eye and adnexa
3. Anatomy and physiology of the optic-neural pathway.
4. Orbit and Ocular adnexa. Orbital anatomy. Extraocular Muscles. Eyelids.
5. Lacrimal Gland and Excretory System. Tear Film. Conjunctiva. Tenon's capsule. Vascular Supply and Drainage of the Orbit.

Recommended reading for the class:
1. Course of lectures - Bazarbaeva Ch.S. P. 20-27
2. Atlas of Ophthalmology. Kanski
3. Comprehensive ophthalmology /Khurana/. -Kolkata, 2011

Key questions covered in lesson 2. Clinical anatomy of the eye

1. Clinical anatomy of eye. Topographic features of the globe. Embryology.
2. Anatomy of the Eye. Cornea. Iris and Ciliary body. Aqueous Humor. Lens. Vitreous. Retina.
3. Cranial Nerves: Central and Peripheral Connections. Optic nerve. Optic Chiasm. Optic Tract. Cortex.
4. Blood supply and innervations all of these structures.

Recommended reading for the class:
1. Course of lectures - Bazarbaeva Ch.S. P. 20-27

2. Atlas of Ophthalmology. Kanski
3. Comprehensive ophthalmology /Khurana/. -Kolkata, 2011

Key questions covered in lesson 3. Physiology of vision. Central vision. Central vision disorders

1. Central vision. Visual Acuity. Clinical Measurement of Visual Acuity. Entoptic Phenomena.
2. Visual Fields, defects.
3. Color Vision. Disorders of color vision. Contrast Sensitivity.
4. Dark adaptation. Disorders of dark adaptation.

Recommended reading for the class:

1) Basic

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures. Bazarbaeva Ch.S.

2) Additional

1. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2004-2005
2. Atlas of Ophthalmology. Kanski
3. Comprehensive ophthalmology /Khurana/. -Kolkata,2003
4. Basic Ophthalmology. 9 editions
5. Practical ophthalmology. Fred M Wilson

Key questions covered in lesson 4. Physiology of vision. Peripheral vision. Peripheral vision disorders

1. The Human Eye as an Optical System.
2. Clinical Refraction.
3. Astigmatism.
4. Accommodation. average accommodative amplitudes for different ages.
5. Presbyopia. Prescribing lenses and glasses.

Recommended reading for the class:

1) Basic

3. Basic ophthalmology. Renu Jogi. 2006
4. Course of lectures. Bazarbaeva Ch.S.

3) Additional

6. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2004-2005
7. Atlas of Ophthalmology. Kanski
8. Comprehensive ophthalmology /Khurana/. -Kolkata,2003
9. Basic Ophthalmology. 9 editions
10. Practical ophthalmology. Fred M Wilson

Key questions covered in lesson 5. Optic system of the eye. Clinical refraction. Emmetropia. Accommodation.

1. Clinical refraction.
2. Pathogenesis of refractive errors and their relations to eye length, corneal curvature, and lens status.
3. Accomodation, correction.

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures – доц. Базарбаева Ч.С.

3. Theory and practice of Optics and refraction. AK Khurana. 2011

Key questions covered in lesson 6. Astigmatism. Myopia, sign and symptoms. Hypermetropia, sign and symptoms. Correction, treatment.

1. Astigmatism, types of astigmatism, metods of correction.
2. Types of Myopia, hypermetropia, signs and symptoms, correction of refractive errors
3. Effectiveness of refractive surgery. Risks associated with refractive surgery. Success in refractive surgery depends on: Careful preoperative evaluation.
4. Contact lenses. Indications, contraindications.

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures – Bazarbaeva Ch.S.
3. Theory and practice of Optics and refraction. AK Khurana.2011

Key questions covered in lesson 7. Module №1

1. PASS UNIT #1

Recommended reading for the class:

1) Basic

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures. Bazarbaeva Ch.S.

2)Additional

1. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2004-2005
2. Atlas of Ophthalmology. Kanski
3. Comprehensive ophthalmology /Khurana/. -Kolkata,2003
4. Basic Ophthalmology. 9 editions
5. Practical ophthalmology. Fred M Wilson

Key questions covered in lesson 8. Binocular vision. Strabismus.

1. Anatomy, physiology and pathology of visual development and of the neuro-muscular mechanisms serving ocular motility and binocular vision
2. Methods of examination for the detection and assessment of sensory and ocular motor disorders.
3. Clinical features, differential diagnosis, natural course and management of the various types of comitant and incomitant deviations.
4. Diplopia, types, differential diagnosis
5. Amblyopia, types, diagnosis.
6. Treatment of strabismus, conservative and surgical. Conservative – principles of treatment, treatment using Botulinum toxin. Principles and the complications of surgery upon the extraocular muscles

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006

2. Course of lectures – Bazarbaeva Ch.S. 2015

3. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2016-2017

4. Basic Ophthalmology. 9 editions

5. Practical ophthalmology. Fred M Wilson

Key questions covered in lesson 9. Methods of examination on ophthalmology.

1. Slit lamp examination, principles of investigations
2. Ophthalmoscopy-direct, indirect, principles of investigations
3. Gonioscopy, principles of investigations
4. FA, principles of investigations
5. perimetry, principles of investigations
6. visometry, principles of investigations
7. refractometry, principles of investigations
8. Tonometry, principles of investigations
9. OCT, principles of investigations
10. pachymetry, principles of investigations
11. MRI, principles of investigations
12. US, principles of investigations
13. X-ray, principles of investigations

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures – Bazarbaeva Ch.S.2015

Key questions covered in lesson 10. Blepharitis. Conjunctivitis.

1. Classification and Management of Eyelid Disorders. Etiology, pathogenesis, classification, signs and symptoms, diagnosis and treatment of Blepharitis. Sign and symptoms
2. Ocular Surface Disorders. Diagnostic Approach. Clinical Aspects.
3. Pathogenesis of Ocular Infections. . Etiology, pathogenesis, classification, signs and symptoms, diagnosis and treatment of Conjunctivitis.
4. Degenerations of the Conjunctiva. Tumors of the Conjunctiva.

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures – Bazarbaeva Ch.S.2015

Key questions covered in lesson 11. Keratitis. Scleritis.

1. Etiology, pathogenesis, classification, signs and symptoms, diagnosis and treatment of keratitis, classification of corneal disorders, principles of treatment.
2. Etiology, pathogenesis, classification, signs and symptoms, diagnosis and treatment of Scleritis. Classification, systemic diseases manifestations

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures – Bazarbaeva Ch.S.2015

Key questions covered in lesson 12. Diseases of lacrimal system. Orbital disorders.

1. Anatomy, embryology and physiology of the structures comprising the lacrymal system
2. Developmental Abnormalities of the Lacrimal System
3. Dacryoadenitis, canaliculitis, dacryocystitis, clinical pictures. Dacryocystorhinostomy
4. Infectious and Inflammatory Disorders of the Orbit

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectures – Bazarbaeva Ch.S.2015

Key questions covered in lesson 13. Anterior uveitis.

1. Anterior and Posterior Uveitis. Endophthalmitis. Complications of Uveitis.

2. Classification of uveitis, etiology, pathogenesis
3. Signs and symptoms of uveitis

Recommended reading for the class:
1) Basic
Basic ophthalmology. Renu Jogi. 2006
Course of lectires – Bazarbaeva Ch.S. 2015
2) Additional
1. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2004-2005
2. Kanski. Clinical ophthalmology. 2007
3. Atlas of Ophthalmology. Kanski
4. Comprehensive ophthalmology /Khurana/.-Kolkata, 2011

Key questions covered in lesson 14. Posterior and systemic uveitis.

1. Diagnosis of intermediate, posterior uveitis and panuveitis
2. Principles of treatment
3. Complications of uveitis
4. Fuchs syndrome, Behchet syndrome, Bechterev syndrome, Vogt-Kayanagi-Harada syndrome

Recommended reading for the class:
1) Basic
1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015
2) Additional
1. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2004-2005
2. Kanski. Clinical ophthalmology. 2007
3. Atlas of Ophthalmology. Kanski
4. Comprehensive ophthalmology /Khurana/.-Kolkata, 2011

Key questions covered in lesson 15. Module N 2

1. PASS UNIT#2

Recommended reading for the class:
1) Basic
1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015
2) Additional
1. Basic and clinical science course on ophthalmology. 14 Sections. American Academy of Ophthalmology. 2004-2005
2. Kanski. Clinical ophthalmology. 2007
3. Atlas of Ophthalmology. Kanski
4. Comprehensive ophthalmology /Khurana/.-Kolkata, 2011

Key questions covered in lesson 16. Cataract. Classification. Symptoms. Treatment.

1. Pathology of the Lens. Congenital Anomalies.
2. Evaluation and Management of Cataract in Adults.
3. Classification. Clinical features. Treatment of cataract. Surgery for Cataract. Complications of Cataract Surgery.
4. IOL, indications, contraindications to surgery.

Recommended reading for the class:

1) Basic
1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 17. Glaucoma. Etiology. Classification. Congenital glaucoma.
Glaucoma. Congenital glaucoma: risk factors, signs, symptoms of congenital gl.
Medical Management of congenital Glaucoma. Surgical Therapy for Glaucoma

1. Etiology of glaucoma
2. Classification of glaucoma
3. Diagnostics of glaucoma

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 18. Primary glaucoma. Classification, diagnostics, treatment.

1. Anterior segment anatomy, circulation of aqueous humor in the normal human eye and in primary open angle glaucoma and primary angle closure glaucoma.
2. Risk factors, signs, symptoms of POAG and ACG
3. Primary glaucoma. Medical Management of primary Glaucoma.

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 19. Secondary glaucoma. Diagnostics, treatment.

1. Secondary glaucoma
2. Principles of glaucoma treatment.

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006

2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 20. Injury of the orbit and organ of vision. Classification. Diagnostics.

1. Trauma of Eye. Mechanisms of ocular trauma. Blunt Injuries
2. Pathogenesis, mechanisms of ocular trauma.
3. Injuries of orbit.

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 21. **Penetrating eye injuries with or without foreign bodies. Diagnostics. Treatment. Complications.**

1. Penetrating Injures, mechanism, sign and symptoms.
2. Intraocular foreign bodies, classification, sign and symptoms.
3. Differentiate blunt and penetrating trauma, penetrating or nonpenetrating trauma.
4. Management of Injures. Principles of surgical treatment

Recommended reading for the class:

1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 22. Burns the organ of vision.

1. Classification of burns, clinical features, principles of treatment, complications.

Keratoprosthetics

2. Burns. Thermal and chemical burns, clinical features.
3. Differential diagnosis between acidic and alkali burns
4. Management of burns

Recommended reading for the class:
1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 23. Diseases of retina.

1. Retinal Disorders, etiology, anatomy of retina
2. Normal appearance and function of the retina. Abnormal anatomy
3. Signs and symptoms of conditions that are associated with RD
4. Macular degeneration, diabetic retinopathy, central retinal artery and vein occlusion.

Recommended reading for the class:
1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 24. Diseases of optic nerve.

1. Optic Nerve Disorders. Optic nerve anatomy, etiology of optic neuritis
2. Ischemic Neuropathy. Papillitis. Papilledema.
3. Optic Neuritis. Traumatic Optic Neuropathy.
4. Optic Atrophy. Toxic Neuropathy

Recommended reading for the class:
1. Basic ophthalmology. Renu Jogi. 2006
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 25. Diabetes of eye

1. Diabetes of eye.
2. Complications of diabetes of eye.

Recommended reading for the class:
1. Basic ophthalmology. Renu Jogi. 2006

Key questions covered in lesson 26. Endocryne ophthalmopathology.

1. Thyrotoxicosis. Symptoms, diagnostics.
2. Complications.

Recommended reading for the class:
1. Basic ophthalmology. Renu Jogi. 2006

Key questions covered in lesson 27. Lesions of organ of vision in general diseases (HIV and AIDS, tuberculosis and syphilis of eye)

1. Ocular involvement in HIV and AIDS
2. Ocular involvement in Tuberculosis
3. Syphilis of eye

Recommended reading for the class:
1. Comprehensive ophthalmology /Khurana/. -Kolkata, 2011
2. Course of lectires – Bazarbaeva Ch.S. 2015

Key questions covered in lesson 28. Module #3

Final control. Solution of situational tasks.

Methodological instructions for the implementation of independent work on the discipline

Important role in the study of the discipline played by rational means: the methods of independent work organization, working conditions, daily routine, equipment labor, etc.

During the study of the discipline identify the following types of independent student learning:

- hearing lectures, participation in seminars, performance of practical and laboratory works;

- development of the topics of the lectures and seminars, performance of practical and laboratory works students of the correspondence form of training (FTRA);

- preparation of abstracts and course works, writing of the thesis; the preparation of modular control and examination;

- work with literature etc. Each of these types requires students resistant independent work.

In the process of preparation for the seminar, students independently practice literature (educational, methodological, scientific), learn to critically evaluate various sources of knowledge. The researcher organizes a discussion on pre-determined topics for which students prepare abstracts or individually completed abstracts. Such seminars are also called discussion seminars.

For independent work to be effective, the student must be deeply aware of its necessity, purpose and further usefulness for themselves. Mandatory conditions for successful implementation are:

- accurate and specific definition of the task,

- its motivation,

- the presence and knowledge of the student's methods of implementation, timing, forms and types of control, the

provision of advisory assistance by the teacher.

Materials for independent work, its volumes are selected by the scientific and pedagogical worker, he also defines

schedules, terms of performance, forms of control. Develops a system of tasks, topics of abstracts, course, qualification, diploma works, methodical recommendations and instructions, lists of obligatory and additional literature.