

Curriculum of Ophthalmology

Isfahan University of Medical Sciences
Non-surgical courses



General diseases and the eye 1st and 2nd years 2h/w

- 1-Infectious diseases
- 2-hypertension
- 3- Cerebrovascular diseases
- 4-Acquired heart diseases
- 5- Hypercholesterolemia
- 6- Pulmonary diseases
- 7-hematologic disorders
- 8- Rheumatic disorders
- 9-Endocrine disorders
- 10-Geriatrics
- 11- Cancer and genetics
- 12- Behavioral and neurologic diseases
- 13- Preventive medicine, computer and statistics, research methodology in public health
- 14-Medical emergencies
- 15-Peri operative management in ocular surgery
- 16- Using statistics in practice and work
- 17-APPLIED ENGLISH LANGUAGE FOR OPTOMETRY AND VISUAL SCIENCE

Glaucoma 1st, 2nd and 3rd years 2h Lecture, 2h practical/w

- 1-Introduction to glaucoma: Terminology
- 2-intraocular pressure and aqueous humor and IOP measurement (GTA), Tonopen
- 3-Clinical evaluation and Gonioscopy
- 4-Open angle glaucoma
- 5- Angle closure glaucoma
- 6-Childhood glaucoma
- 7-Medical management of glaucoma
- 8- Surgical therapy for glaucoma incisional and laser
- 9-Optic nerve head evaluation and imaging techniques
- 10- PERIPHERAL VISION AND Static and Dynamic visual field test

Lens and cataract 1st, 2nd 3rd years 2h Lecture, 2h practical/w

- 1-Anatomy and histology of the visual system
- 2- Biochemistry
- 3- Physiology
- 4-Embryology
- 5-Pathology and microbiology
- 6-Epidemiology of cataract
- 7- Evaluation and management of cataracts in adults
- 8 -Complications of cataract surgery
- 9- Ocular biometry

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Retina and vitreous 1st 2nd 3rd 4th years 3h Lecture, 2h practical/w

Part 1

Fundamentals and diagnostics

- 1- Basic anatomy
- 2- Diagnostic approach to retinal diseases
- 3- Retinal physiology and psychophysics
- 4- Electrophysiology of the retina

Part 2

Disorders of the retina and vitreous

1. Acquired diseases affecting the macula
2. Retinal vascular diseases
3. Choroidal diseases
4. Focal and diffuse choroidal and retinal diseases
5. Congenital and stationary retinal diseases
6. Hereditary choroidal and retinal dystrophies
7. Retinal degenerations
8. Peripheral retinal abnormalities
9. Diseases of the vitreous
10. Posterior segment manifestations of trauma
11. Imaging in retinal disease, OCT

Fundamentals and principles of ophthalmology 1st year 2h Lecture

Part1

Anatomy

1. Orbital and ocular adnexa
2. The eye
3. Cranial nerves: cranial and peripheral connections

Part 2

Embryology

1. Ocular development

Part 3

Genetics

1. Molecular genetics
2. Clinical genetics

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Part 4

Biochemistry and metabolism

1. Tear film
2. Cornea
3. Iris and ciliary body
4. Aqueous humor
5. Lens
6. Vitreous
7. Retina
8. Retinal pigment epithelium
9. Free radicals and anti oxidants

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Part 5

Ocular pharmacology

1. Pharmacologic principles
2. Ocular pharmacotherapeutics

Clinical optics 1st 2nd 3rd 4th years 3 h Lecture, 3h practical/w

- 1-Physical optics
- 2-Geometrical and physical optics 1, 2
- 3-Optics of the human eye, optic lab 1
- 4-Clinical refraction
- 5-Contact lenses
- 6-Intraocular lenses
- 7-Optical considerations in refractive surgery
- 8-Vision rehabilitation
- 9-Telescopes and optical instruments, rehabilitation in optometry
- 10-ocular electrophysiology
- 11-Optometry 1
- 12--Optometry 2
- 13--Optometry 3
- 14-Pediatric optometry
- 15-BINOCULAR VISION ANOMALY AND TREATMENT

Ophthalmic pathology and intra-ocular tumors 1st 2nd 3rd years 2h Lecture

Part 1

Introduction to part one

- 1- Disease process
- 2- Wound repair
- 3- Specimen handling
- 4- Special procedures
- 5- Conjunctiva, layers in eye 1, 2
- 6- Cornea
- 7- Anterior chamber and trabecular meshwork
- 8- Sclera
- 9- Lens
- 10- Vitreous
- 11- Retina and retinal pigment epithelium
- 12- Uveal tract
- 13- Eyelids
- 14- Orbit
- 15- Optic nerve

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Part 2

Introduction to part 2

1. Melanocytic tumors
2. Angiomatous tumors
3. Retinoblastom
4. Secondary tumors of the eye
5. Lymphomatous tumors

Neuro-ophthalmology 3rd 4th years 2h Lecture, 2h practical/w

- 1-Neuro-ophthalmic anatomy
- 2-Neuroimaging in neuro ophthalmology
- 3-The patient with decreased vision: Evaluation
- 4-The Patient with decreased vision
- 5-The patient with transient visual loss
- 6-The patient with illusions, hallucinations and disorders of higher cortical function
- 7-The patient with supranuclear disorders of ocular motility
- 8-The patient with diplopia
- 9-The patient with nystagmus and spontaneous eye movement disorders
- 10-The patient with pupillary abnormalities
- 11-the patient with eyelids or facial abnormalities
- 12-The patient with head ocular or facial pain
- 13- Th patient with non-organic ophthalmic disorders
- 14-Selected systemic conditions with neuro ophthalmic signs

Pediatric ophthalmology and strabismus 2nd 3rd years 2h Lecture, 2h practical/w

Part 1

Strabismus

Introduction to strabismus

- 1- Anatomy of the extraocular muscles and motor physiology
- 2- Sensory physiology and pathology
- 3- Amblyopia
- 4- Diagnostic techniques for strabismus
- 5- Esodeviations
- 6- Exodeviations
- 7- A and v pattern
- 8- Vertical deviations
- 9- Special forms of strabismus
- 10- Childhood nystagmus
- 11- Chemo denervation treatment of strabismus and blepharospasm using botulinum toxin
- 12- Binocular vision anomalies



Part 2

Pediatric Ophthalmology

Introduction to part 2

1. Growth and development of the eye
2. Congenital abnormalities
3. Orbital dysmorphology and eyelid disorders
4. Infectious and allergic ocular diseases
5. The lacrimal drainage system
6. Diseases of cornea and anterior segment
7. Iris abnormalities
8. Pediatric glaucoma
9. Childhood cataracts and ocular pediatrics lens disorders
10. Uveitis in the pediatric age group classification
11. Vitreous and retinal diseases and disorders
12. Optic discs abnormalities
13. Ocular and periocular tumors in childhood
14. Phacomatosis
15. Craniofacial malformations
16. Ocular findings and inborn errors of metabolism treatment
17. Ocular trauma in childhood
18. Decreased vision in infants and children

Orbit, eyelids and lachrimal system 3rd 4th year 2h Lecture, 2h practical/w

Part 1

Orbit

- 1-Orbital anatomy
- 2-Evaluation of orbital disorders
- 3-Congenital orbital anomalies
- 4-Infectious and inflammatory disorders
- 5-Orbital neoplasm
- 6-Orbital trauma

Part 2

Periocular soft tissues

1. Anatom
2. Facial and eyelid surgery
3. Classification and management of eyelid disorders
4. Periocular malposition and evolutionary changes

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Part 3

Lacrimal system

1. development, anatomy and physiology of the lacrimal secretory and drainage system

External diseases and cornea 1st 2nd 3rd years 2h Lecture, 2h practical/w

Part 1

Basic and clinical concepts of corneal and external eye diseases

- 1-structure and functions of the external eye and cornea
- 2- Examination techniques for the external eye and cornea
- 3-Fitting contact lenses

Part 2

Ocular surface disorders

1. Normal physiology of the ocular surface
2. Diagnostic approach to ocular surface diseases
3. Dry eye syndrome

Part 3

Infectious diseases of the external eye and cornea

- 1.infectious diseases of the external eye: basic concepts
- 2.infectious diseases of the external eye: clinical aspects

Part4

Immune mediated disorders of the external eye and cornea

- 1.Ocular immunology
- 2.Clinical approach to immune-related disorders of the external eye

Part 5

Neoplastic disorders of the eyelids, conjunctiva and cornea

1. Tumor cell biology and diagnostic approach to ocular surface neoplasia
2. Clinical approach to neoplastic disorders of the conjunctiva and cornea

Part 6

Basic concepts of congenital anomalies of the cornea and sclera

- 1.Clinical aspects of the congenital anomalies of the cornea and sclera

Part 7

Corneal dystrophies and metabolic disorders of the conjunctiva, cornea and sclera

- 1.Molecular genetics of corneal dystrophies and metabolic disorders
- 2.Clinical approach to corneal dystrophies and metabolic disorders

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Part 8

Degenerative disorders of the conjunctiva, cornea and sclera

1. Degenerative and aging processes of the conjunctiva, cornea and sclera
2. Clinical approach to deposition and degenerations of the conjunctiva, cornea and sclera

Part 9

Toxic and traumatic injuries of the anterior surface

1. Wound healing of the conjunctiva, cornea and sclera
2. Clinical aspects of toxic and traumatic injuries of the anterior segment

Intraocular inflammation and uveitis 2nd 3rd 4th years

2h/w

Part 1

Basic concepts in immunology

- 1- Immunization and adaptive immunity: the immune response arc
- 2- Ocular immune responses
- 3- Mechanisms of immune effectors reactivity
- 4- Special topics in ocular immunology

Part 2

Intraocular inflammation and uveitis

- 1- Clinical approach to uveitis
- 2- Non-infectious (autoimmune uveitis)
- 3- Infectious uveitis
- 4- Endophthalmitis
- 5- Masquerade syndrome
- 6- Complications of uveitis
- 7- Ocular involvement in AIDS

Clinics and operating rooms

- 1- General ophthalmology clinics 1
- 2- General ophthalmology clinics 2
- 3- Ocular Surface
- 4- Cornea and anterior segment 1
- 5- Cornea and anterior segment 2
- 6- Uveal tract
- 7- Strabismus

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Clinics and operating rooms

- 1-Cataract 1
- 2-orbit and Lacrimal System
- 3-Neurophthalmology
- 4-Glaucoma
- 5-Vitroeous and retina
- 6-Refractive surgery
- 7-Emergency Room
- 8-cornea and anterior segment 2
- 9-Cataract2
- 10- vitreous and retina 2
- 11-emergency room2

Please do not to hesitate to contact us, would you need any further information

Best regards,
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