

**COURSE DATA****Data Subject**

Code	34485
Name	Ophtalmology
Cycle	Grade
ECTS Credits	4.5
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
1204 - Degree in Medicine	Faculty of Medicine and Odontology	3	First term

Subject-matter

Degree	Subject-matter	Character
1204 - Degree in Medicine	15 - Human clinical training IV	Obligatory

Coordination

Name	Department
PINAZO DURAN, MARIA DOLORES	40 - Surgery

SUMMARY

The subject *Ophthalmology* tries to extend the student's knowledge about the different diseases that can affect the visual system, both the diseases of the eyeball and the visual pathway, including the systemic diseases with regard to the vision. A journey through the different structures of the eyeballs and the visual pathway insisting on the most frequent pathologies, such as the glaucoma, the cataract, the macular degeneration associated with age or the diabetic retinopathy. The student will learn notions of differential diagnosis of the different pathologies and how to perform their reference to the ophthalmologist.

The student will also learn the different existent therapeutic alternatives of the ocular diseases, insisting on the pharmacological and surgical treatment used, their efficiency and their secondary effects.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

It is highly advisable to have knowledge about anatomy and physiology of the visual pathway, as well as knowledge about the general pathology to understand the impact on the visual system of the different systemic and neuro-ophtalmological diseases.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1204 - Degree in Medicine

- Obtain and elaborate a clinical history with relevant information.
- Perform a physical examination and a mental health assessment.
- Have the capacity to make an initial diagnosis and establish a reasonable strategy of diagnosis.
- Establish the diagnosis, prognosis and treatment, applying principles based on the best information available and on conditions of clinical safety.
- Indicate the most accurate therapy in acute and chronic processes prevailing, as well as for terminally ill patients.
- Plan and propose appropriate preventive measures for each clinical situation.
- Acquire proper clinical experience in hospitals, health care centres and other health institutions, under supervision, as well as basic knowledge of clinical management focused on the patient and the correct use of tests, medicines and other resources available in the health care system.
- Know how to use the sources of clinical and biomedical information available, and value them critically in order to obtain, organise, interpret and communicate scientific and sanitary information.
- Know how to use IT in clinical, therapeutic and preventive activities, and those of research.
- Understand the importance and the limitations of scientific thinking in the study, prevention and management of diseases.
- Proper organisation and planning of the workload and timing in professional activities.
- Team-working skills and engaging with other people in the same line of work or different.
- Criticism and self-criticism skills.
- Capacity for communicating with professional circles from other domains.
- Acknowledge diversity and multiculturality.
- Consideration of ethics as a fundamental value in the professional practise.



- Working capacity to function in an international context.
- Recognises, diagnoses, and guides the management of the main ophthalmological pathologies.
- Knows how to perform a complete anamnesis, focused on the patient and orientated to various pathologies, interpreting its meaning.
- Knows how to evaluate modifications in clinical parameters at different ages.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

Once the teaching period is finished, the student must acquire the following skills in the different aforementioned areas:

Area of the update of the Ophthalmology study: knowing how to perform an ophthalmological clinical history.

Area of the eyelids, conjunctive and lachrymal system: knowing how to perform the eyelids eversion, performing and interpreting a Schirmer's test and the use of Bengal Rose and lissamina green, and knowing the exploratory ways of the excretory lachrymal pathway.

Area of the anterior segment: knowing how to explore the cornea with torch, magnifying glass and fluorescein eyewash; knowing how to handle the slit lamp and exploring the anterior chamber and the crystalline.

Area of the uvea: knowing how to establish the positive diagnosis and guide the clinical history and the exploration looking for the etiological cause.

Area of the glaucoma: knowing how the ocular tension can be determined; evaluation of the visual field pain and knowing the different pharmacological lines that are used on its treatment.

Area of the posterior segment: knowing how to handle the ophthalmoscope and being able to interpret an ocular fundus; interpreting the visual fields.

Area of the neuro-ophthalmology: knowing the general scheme of the optic and pupil pathways; knowing how to evaluate the different images that can present the optic disc; knowing the semiology of the visual fields; knowing how to explore the pupil reflex.

Area of refraction: recognising the visual affectation in the different pathologies with visual affectation.

Area of the strabismus: knowing how to diagnose an ocular deviation by the cover-test; diagnosing an amblyopia: knowing how to explore the actions of the muscle groups.

Area of the orbit: knowing how to perform a simple orbital exploration, without instrumental mediums; recognising and handling an endocrine exophthalmos.



Area of traumatology: knowing how to evaluate and know the main cares in a traumatized eye; management of the hyphema; immediate action in corruptions, perforations and suspect of intra-ocular strange body; knowing how to diagnose and treat the cornea erosions and cornea-conjunctive strange bodies.

Knowledge:

The student must know the anatomy and physiology of the visual system.

Area of the eyelids, conjunctive and lachrymal system: the student must know how to diagnose and treat swelling and palpebral tumours; disorders in the disposition of the eyelids; inflammation of the palpebral glands; inflammation of the eyelids free corner; every clinical way of the conjunctivitis; pinguecula and pterygium; the production of the tears and pathology of the evacuator system.

Area of the anterior segment: the student must know the physiopathology of the edema and the cornea cicatrization; semiology of the cornea pathology; clinical ways, diagnosis and treatment of both superficial and deep keratitis; cornea degenerations and dystrophies; clinical ways of scleral affectation; methods to explore the crystalline; congenital pathology of the crystalline and physiopathology, management and treatment of the patient with cataracts.

Area of the uvea: the student must know the symptoms, the diagnostic way and treatment of the anterior, middle and posterior uveitis, as well as the different clinical ways.

Area of the glaucoma: the student must know the formation, circulation and evacuation circuit of the aqueous humour; how to explore the ocular tension and its consequences; concepts and clinical ways of the glaucoma (congenital, open angle, closed angle and secondary); possible treatments.

Area of the posterior segment: the student must know the anatomy, physiology and functions of the vitreous and its pathology (opacity, hemorrhages, effusion). The retina anatomy and physiology and the exploration methods; every pathological episodes that affect the arterial retinal circulation (including HTN and obstructions), the venous ones (including obstructions) and capillary ones (including the diabetic retinopathy); the macular pathology (ARMD); phakomatosis; retina infections; retina effusions; retina tumours.

Area of the neuro-ophtalmology: the student must know the anatomy and vascularization of the optic nerve; the exploration of the papilla in the deep eye; the semiology of the visual fields; knowing how to differentiate the papilla edema from the optic neuritis; knowing the optic atrophy (etiological and clinical); the pathology of the chiasm, its clinical impact and treatment; the visual field impact that triggers the retro-chiasmatic pathology; the anatomical ways of the pupil reflexes; knowing how to study these reflexes and knowing their disorders.

Area of the refraction: knowing how and to what extent the visual affectation is produced in the different ocular diseases.



Area of the strabismus: the student must know the anatomy, innervation and physiology of the ocular extrinsic muscles; the concepts of binocular vision, retina correspondence, amblyopia and diplopia; the exploration methods of the motility: static, dynamic and the binocular vision; causes, diagnosis, clinical ways and treatment of the strabismus, ocular paralysis and nystagmus.

Area of the orbit: the student must know the area of the orbit and the exploration methods; the clinic, diagnosis and treatment of the endocrine exophthalmos; the vascular and tumour pathology of the orbit.

Area of the traumatology: the students must know the contusions, injuries and palpebral and corneal-scleral strange bodies; the anterior and posterior contusive syndromes, the corrosions and the intraocular strange bodies.

DESCRIPTION OF CONTENTS

1. Refraction defects.

Hyperopia. Myopia. Astigmatism. Presbyopia. Treatment of the refraction defects.

2. Pathology of the lachrymal system.

Secretor part: dacryoadenitis, tumors and functional disorders: dry eye. Excretory part: epiphora by alterations in point, canaliculi and lachrymal sac. Dacryocystitis, types.

3. Pathology of eyelids.

Cutaneous affections. Inflammations. Position disorders. Tumors.

4. Pathology of the conjunctiva.

Subconjunctival bleeding. Inflammations: conjunctivitis. Degenerations. Tumors.

5. Pathology of the cornea.

Inflammations: Keratitis. Degenerations. Corneal manifestations of systematic diseases.

6. Pathology of the lens.

Disorder in transparency: cataract. Position disorder: lens subluxation and luxation.



7. Glaucoma.

Congenital. Acquired, primary: acute glaucoma/simple chronic glaucoma. Secondary glaucoma. Absolute glaucoma.

8. Pathology of the sclera.

Congenital disorders. Inflammations: episcleritis and scleritis. Degenerations.

9. Pathology of the uvea

Pathology of the uvea (1) Inflammations: anterior uveitis.

Pathology of the uvea (2) Immediate uveitis. Posterior uveitis and pan-uveitis. Uvea tumors: melanomas and metastasis.

10. Pathology of the vitreous.

Congenital disorders. Vitreous detachment. Deposits in vitreous. Bleedings in vitreous. Pathology of the retina (1) Retina Detachment.

11. Pathology of the retina (2)

Vascular pathology of the retina: arterial/venous occlusion. Hypertensive retinopathy. Diabetic retinopathy. Prematurity retinopathy.

12. Pathology of the retina (3)

Tumors: retinoblastoma. Retinal degenerations: Retinitis pigmentosa and ARMD (age-related macular degeneration).

13. Pathology of the optic nerve, optical path and pupil path.

Papilledema. Inflammations: papillitis, retrobulbar neuritis. Optic atrophy. Visual field defects by injuries in the different levels of the optical paths. Pupil disorders.

14. Ocular motility (1)

Anatomic-physiology. Visual development. Amblyopia. Concomitant strabismus.



15. Ocular motility (2)

Paralytic strabismus. Paralysis of the pair III, IV and VI.

16. Pathology of the orbital.

Exophthalmos: endocrine, inflammatory, vascular, tumor. Enophthalmos.

17. Traumatisms of the visual system.

Contusions, injuries and foreign bodies. Physical traumatisms. Chemical traumatisms.

18. PRACTICES

SEMINARS

- 1.- Medical history in Ophthalmology. Anatomical and functional exploration of the visual system.
- 2.- Differential diagnosis of the red eye.
- 3.- Urgencies in ophthalmology (1).
- 4.- Urgencies in ophthalmology (2).
- 5.- Ophthalmology and systemic diseases.

CLINICAL CASES

- 1.- Clinical cases of the anterior segment.
- 2.- Clinical cases of the posterior segment.
- 3.- Clinical cases of pediatrics ophthalmology.
- 4.- Clinical cases by loss of progressive, bilateral and painless vision.
- 5.- Clinical cases of glaucoma.
- 6.- Clinical cases of neuro-ophthalmology.
- 7.- Systemic retinopathies.



WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	19,00	100
Seminars	17,00	100
Clinical practice	20,01	100
Development of individual work	2,00	0
Readings supplementary material	8,00	0
Preparation of evaluation activities	2,00	0
Preparing lectures	33,00	0
Preparation of practical classes and problem	6,25	0
Resolution of case studies	5,00	0
TOTAL	112,26	

TEACHING METHODOLOGY

The lessons will be taught with theoretical content on presence-based modality. The student will be provided with audiovisual support through Aula Virtual.

Practical sessions with reduced groups (Seminars): they are sessions focused on the students' group work, with proposals of real cases that must be analysed and studied by the group. The interaction will be encouraged through the oral presentations and examples in the classroom, being evaluated as continuous assessment.

Clinical practices lessons: they are lessons with presence-based modality where the theoretical concepts are developed practically in the clinical consultation of Ophtalmology. These practices, with reduced groups, will be carried out with real patients for the students to develop the skills needed in this specialty.

Individual tutorials: they will be made with presence-based modality or online through the mechanisms that the Aula Virtual provides.

EVALUATION

Theoretical assessment: 50% of the final mark. It will be made through a written test with multiple-choice questions that will have as the main objective the acquisition of knowledge. The content of the test will be the same for each group of the same subject. Each three wrong questions will subtract one right question. Questions without answer will not have any positive or negative value.

Practical assessment: 50% of the final mark. It will be made through the continuous assessment of the participation in the different activities and with the fulfillment of a test that assesses the acquisition of skills related with the general and specific competencies that will include essay questions or clinical cases where the student will be asked to develop the diagnostic and therapeutic guidance with possible support of one or several images.



Students are reminded of the importance of carrying out evaluation surveys on all the teaching staff of the degree subjects.

REFERENCES

Basic

- KANSKI, J.J. Oftalmología Clínica. Barcelona. S.A. Elsevier España.2012.
- LANG G.K. Oftalmología. Texto y atlas en color. Ed. MASSON. Barcelona 2006
- KANSKI Y NISCHAL: Atlas de Oftalmología. A.A. Elsevier España. 1999.
- J.C. PASTOR GIMENO: Guiones de Oftalmología. Editorial McGraw Hill-Interamericana.
- SERGIO Y ELENA BONAFONTE. Esquemas Clínico-visuales en Oftalmología, Ed. Elsevier-Masson.
- JACK KANSKI. Diagnóstico Clínico en Oftalmología, S.A. Elsevier España. 2007.
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