COURSE DATA

Data Subject	
Code	34310
Name	Binocular vision anomalies
Cycle	Grade
ECTS Credits	4.5
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. year	Period
1207 - Degree in Optics and Optometry	Faculty of Physics	3	First term

Subject-matter

Degree	Subject-matter	Character
1207 - Degree in Optics and Optometry	15 - Ocular pathology and pharmacology	Obligatory

Coordination

Name	Department
BUENO GIMENO, INMACULADA	280 - Optics and Optometry and Vision Sciences

SUMMARY

This subject examines the various defects binoculars, the fundamentals of techniques to diagnose and measure them, and the different therapies and the criteria on which you base your prescription.

The main objective of this course is to train optometrist in a series of theoretical knowledge and practical skills that allow detection tasks and different treatment of binocular vision anomalies, so the student must acquire the knowledge necessary to assess the various disorders of binocular vision in all kinds of people, even those requiring special cases where there are objective methods of communication problems. You should also be able to evaluate cases neuroftalmológicas etiologies. Also must be able to apply treatments, visual therapy methods and application of prisms or redirect the patient to other health professionals.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

To successfully address the subject, it is essential that the student, upon arriving at this subject, possess previous knowledge of Optometry I, Practices of Optometry I, the basis of Physiological Optics, Vision Psychophysics, Binocular Vision, Optometry II, Practices of Optometry II and Optometry III..

OUTCOMES

1207 - Degree in Optics and Optometry

- To know the properties and functions of the different elements that make up the visual system.
- To recognize the different types of mechanisms and pathophysiological processes that trigger eye diseases.
- To know the symptoms of visual diseases and to recognize the signs associated with them. To recognize the alterations that modify normal functioning and trigger pathological processes that affect vision.
- To know and to apply the procedures and indications of the different methods of clinical examination and complementary diagnostic techniques.
- To know the forms of presentation and general routes of administration of drugs.
- To know the general principles of pharmacokinetics and pharmacodynamics.
- To know the pharmacological actions, the collateral effects and drug interactions.
- To know the ocular topical preparations, with special attention to the use of drugs that facilitate the visual and optometric examination.
- To know the most frequent adverse systemic effects after the application of the usual ocular topical drugs.
- To detect and to assess the main ophthalmological disorders, in order to refer patients to the ophthalmologist for study and treatment.
- To know the manifestations of systemic diseases at the ocular level.
- To know the epidemiological models of the main visual pathologies.
- To know and to apply health education techniques and the main generic eye health problems. To know the principles of health and disease.
- To know the manifestations of the pathological processes and the mechanisms by which the main human diseases occur.

- To know some of the most common psychophysical techniques in clinical practice.
- To apply standard psychophysical techniques to characterize anomalous visual systems.

LEARNING OUTCOMES

Resultados de aprendizaje

At the end of the course the student must be able to:

- Measure, interpret and treat binocular anomalies (strabismus and amblyopia) with optometric techniques.

- Make decisions about the dysfunction of the subject and possible optometric treatment, for which, you must learn to integrate all the assessments in an analytical sequence and the results of this will allow you to reach the detection of the dysfunction.

- Know the sensory and oculomotor mechanisms of binocular vision.

- Use the theoretical knowledge in making decisions about the most appropriate optical or prismatic correction in all patients, adults and children.

- Use clinical and instrumental protocols in the associated exploration.

- Apply new technologies in the field of optometric clinic.

- Establish collaboration with other optometrists (teamwork).

- Acquire the skills related to interprofessional relations with other specialists dedicated to vision care, fundamentally "with other optometrists and ophthalmologists, which will allow the optometrist's task to be as useful as possible to the Society."

- Understand the psychological aspects in the relationship between the optometrist and the patient.

- Know the legal and psychosocial aspects of the profession.

- Develop communication skills, data recording and clinical record preparation.

- Acquire the skill for the interpretation and clinical judgment of the results of the

visual tests, to establish the diagnosis and the most appropriate treatment.

DESCRIPTION OF CONTENTS

1. EXAMINATION OR SPECIFIC EVALUATION

A review is made of the anatomy of the extraocular muscles, their innervation and their main actions. In addition, the etiology of the Binocular Vision Anomalies, the sensory adaptations that occur in strabismus and evaluation are studied, to further deepen the specific optometric examination in strabismus.

2. EVALUATION AND TREATMENT OF AMBLIOPIA

In the Didactic Unit II, the evaluation and treatment of Amblyopia is studied in depth, with special emphasis on the New Technologies for the treatment of Amblyopia.

3. DIAGNOSIS AND TREATMENT OF THE STRABISMUS

In Didactic Unit III the types of strabismus, their diagnosis and treatment are studied: Endotropia, Exotropia, Vertical Strabismus and Oculomotor Paralysis.

4. TREATMENT AND PRESCRIPTION

In Didactic Unit IV, the basic principles of strabismus treatment are studied, especially the surgical and pharmacological treatment of strabismus. There is also a brief review of the applications of the prisms in strabismus, as a prism should be prescribed and the tolerance of them.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Tutorials	7,50	100
Laboratory practices	7,50	100
Attendance at events and external activities	5,00	0
Development of group work	10,00	0
Development of individual work	10,00	0
Study and independent work	10,00	0
Readings supplementary material	5,00	0
Preparation of evaluation activities	10,00	0
Preparing lectures	10,00	0
Resolution of case studies	5,00	0
Resolution of online questionnaires	2,50	0
TOTAL	**112,50**	

TEACHING METHODOLOGY

Theory: classroom that will be used in the lesson taught expository and theoretical content of matter. Be supported with the use of audiovisual methodology.

- Seminars: in small groups to encourage student participation in the actual case is proposed to analyze and solve together.

- Problem-based learning: develop practical exercises of the theoretical.

- Jobs wards: analyze and discuss specific topics of matter, the student actively involved, both individually and in groups. Simultaneously, the teacher can keep track of work individually.

- Tutorials: connection to activate individual student-teacher advisory and serve in the various activities that the student must develop.

- Practices in laboratory where they can develop the theoretical concepts in the cabinet of optometry.

EVALUATION

The evaluation will be continuous throughout the course regarding the activities carried out, and in the participative attitude of the student in the various activities proposed in class. A written test of short questions and a test type will be carried out that will count 60% of the total grade. It will also be necessary to present a work in class on topics that will be proposed, which will count 20% of the final mark, 10% will be of the attendance to class, participation in seminars and resolution of questions proposed in class and the other 10 % remaining will be from the practices in the laboratory. In the practices, the student must deliver two clinical cases resolved.

To pass the subject, it is obligatory to approve each part, that is to say, obtain 50% in each of the sections evaluated.

REFERENCES

Basic

- Referencia b1: Caloroso E., Rouse M. Tratamiento clínico del estrabismo. Ciagami. Madrid.1999
  Referencia b2: Ciancia A; Cornejo MC. Ortóptica y pleóptica. Los tratamientos reeducativos del estrabismo. Buenos Aires, Macchi, 1966
  Referencia b3: Ciuffreda K J., Levi D M ; Selenow A. Amblyopia : basic and clinical aspects. Boston : Butterworth-Heinemann, 1991
  Referencia b4: Martín Herranz R, Vecilla Antolínez G. Manual de Optometría. Ed Panamericana. 2011
  Referencia b5: Montés-Micó R. Optometría: aspectos avanzados y consideraciones especiales. Barcelona. Elsevier. 2011
  Referencia b6: Perea, J., Estrabismos. Artes gráf. Toledo. España. 2008.
  Referencia b7: Prieto Diaz J., Prieto Souza C. Estrabismos. Buenos Aires Ediciones Científicas

Argentinas. 2005.
Referencia b8: Von Noorden GK. Atlas de estrabismos. Madrid. Edit. Ciagami. 1997
Referencia b9: Von Noorden GK, Helveston EM. Estrabismos: decisiones clínicas. Madrid. Edit. Ciagami. 1997

Additional

- Referencia c1: GRIFFIN, JR. GRISHAM, JD. Binocular anomalies. Diagnosis and vision therapy. 4th Elsevier. 2002
Referencia c2: GROSVENOR, T. Optometría de atención primaria. Elsevier-Masson. 2005
Referencia c3: Hatfield C Visual training: the joy of Optmetry. Col. Introduction to behavioral Optometry. Ed. Optometric Extensión Program Foundation. Santa Ana, USA, 1999.
Referencia c4: Oftalmologia pediática y estrabismo. American Academy of Ophthalmology. The eye M.D. Association. Elsevier 2007-2008.
Referencia c5: Scheiman MH, Wick B. Clinical management of binocular vision. Heterophoric, accommodative and eye movement disorders. Lippincott Williams & Wilkins. 3ª ed. 2008