



## COURSE DATA

### DATA SUBJECT

**Code:** 34320  
**Name:** Low vision, orthoptics and visual therapy  
**Cycle:** Undergraduate Studies  
**ECTS Credits:** 6  
**Academic year:** 2025-26

### STUDY (S)

| Degree                                | Center             | Acad. year | Period         |
|---------------------------------------|--------------------|------------|----------------|
| 1207 - Degree in Optics and Optometry | Facultat de Física | 4          | Second quarter |

### SUBJECT-MATTER

| Degree                                | Subject-matter     | Character |
|---------------------------------------|--------------------|-----------|
| 1207 - Degree in Optics and Optometry | Advanced optometry | ELECTIVES |

### COORDINATION

MONTALT RODRIGO JUAN CARLOS

## SUMMARY

LOW VISION, ORTHOPTICS, AND VISION THERAPY is a 6-ECTS credit course that is part of the ADVANCED OPTOMETRY module. It is taught in the fourth year and is optional.

The course is divided into two parts: I: LOW VISION and II: ORTHOPTICS AND VISION THERAPY.

It aims to apply the knowledge acquired in previous courses and focus specifically on optometric care in low vision and vision therapy.

It strengthens skills acquired in other courses and develops aspects such as care for special populations with visual impairments and patients with binocular vision abnormalities, both strabismic and non-strabismic.

## 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 take this course it is recommended that students have completed previously the courses Optometry, Contact Lenses, Assembly and Adjustment of ophthalmic lenses, and ocular pathology. It also requires



knowledge of optical and optometric instruments.

## COMPETENCES / LEARNING OUTCOMES

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Being able to gather and interpret relevant data to make judgments.

Being able to transmit information, ideas, problems and solutions to both a specialized and non-specialized audience.

Development of learning skills necessary to undertake further studies with a high degree of autonomy.

Knowing how to apply the knowledge acquired to professional activity, knowing how to solve problems and develop and defend arguments.

To have and to understand the fundamentals of Optometry for its correct clinical and healthcare application.

To know the applicable legislation in professional practice, with special attention to matters of gender equality between men and women, human rights, solidarity, sustainability, protection of the environment and promotion of the culture of peace.

## DESCRIPTION OF CONTENTS

### 1. LOW VISION

Unit 1: Historical introduction. National and international definitions. Visual boundaries that define legal blindness and low vision. Prevalence, incidence and projection of low vision.

Unit 2: Psychological aspects of patients with low vision, children, adults, motivation. Psychological and sociological factors of low vision. Attitude of the specialist and the patient. Differentiation patient with acquired and congenital visual loss.

Unit 3: Probability of success, mobility, functional classification of anomalies in low vision patient. Evaluation of signs and symptoms that predict success in low vision. Knowledge of the ride and handling of the patient in the consultation. Abnormalities in low vision visual field loss and AV.

Unit 4: Preliminary examination and management of patients with low vision.

Knowledge and development of special techniques used in optometric low vision examination.

Unit 5: retinal pathologies affecting low vision.

Identification ophthalmologic symptoms and signs of patients with low vision.

Unit 6: Test to test vision. Characteristics, properties. Annotation of the AV. Equivalence between different annotations of the AV.

Description of the test used in far and near low vision. Evaluation of the AV and transfer to different notes.

Unit 7: Description optometric examination for patients with low vision.

Action Protocol in optometric low vision examination. Calculating increases depending on the patient's vision needs.

Unit 8: Physical characteristics of optical instruments used in low vision.



Optical aids (telescope, microscope, tele microscopes, magnifiers), no optical, and electronic. Centered, adjustment and training of its use.

## 2. LOW VISION PRACTICES

Practice 1: Simulators and mobility.

Experience and identification of different vision loss in diseases that affect low vision. Driving practices "lazarillo technique and use of baton" of patients with low vision.

Practice 2: Assessment of vision loss and visual field.

Scotomas detection method and congenital visual field loss. Take the test and AV with different distances at different scales step. Estimates of increases for the AV objective

Practice 3: Using optical aids.

Calculation of the characteristics of a low vision aid. Technical criteria according to patient characteristics. Learning practical use for best results.

## 3. ORTHOPTICS AND VISUAL THERAPY

UNIT 1: Vision therapy: Introduction and concept

Introduction, concept, story, streams of Optometry and Vision Therapy. Integration of skills. The visual problem.

UNIT 2: Patient characteristics and factors that determine the need for vision therapy.

Patient characteristics: indications, age and intelligence, psychology and motivation. Data analysis: diagnosis, general treatment. Forecast. Duration of therapy.

UNIT 3: Organization of the consultation and management of patients in vision therapy.

Previous considerations. Structuring of the query. Material needed. Classification of instruments and methods. Phases of therapy. General guide for therapy. Techniques used in vision therapy.

UNIT 4: Treatment of oculomotor dysfunctions.

Characteristics of oculomotor dysfunctions. Evaluation. Differential Diagnosis. Therapy Program: treatment exercises.

UNIT 5: Treatment of accommodative dysfunctions.

Features accommodative anomalies. Evaluation. Differential Diagnosis. Therapy Program: treatment exercises.

UNIT 6: Treatment vergenciales anomalies.

Features vergenciales dysfunctions: condition AC / A low, high and normal. Evaluation. Differential Diagnosis. Therapy Program: treatment exercises.

UNIT 7: Treatment of amblyopia.

Characteristics of amblyopia. Evaluation. Forecast. Treatment: optical correction, occlusion, penalization, prisms, Pleoptics, vision therapy.

UNIT 8: Treatment of strabismus.

Features strabismus. Evaluación.Tratamiento: optical correction, occlusion, prisms, drugs, orthoptics surgery.

## 4. ORTHOPTICS AND VISUAL THERAPY PRACTICES

Practice 1: Exercises and tools in vision therapy.

Visual examination protocol. Organization of the query. Handling equipment used in vision therapy.



Practice 2: Techniques of vision therapy in non-strabismic anomalies.

Identification of oculomotor abnormalities, accommodative and binoculars. Application of vision therapy treatments.

Practice 3: Techniques and Pleoptics orthoptics in strabismic anomalies.

Identification of different strabismic binocular vision anomalies. Application of treatments and Pleoptics orthoptics.

## WORKLOAD

### PRESENCIAL ACTIVITIES

| Activity           | Hours        |
|--------------------|--------------|
| Tutorials          | 15,00        |
| Theory             | 30,00        |
| Other activities   | 15,00        |
| <b>Total hours</b> | <b>60,00</b> |

### NON PRESENCIAL ACTIVITIES

| Activity                              | Hours        |
|---------------------------------------|--------------|
| Attendance at other activities        | 2,00         |
| Individual or group project           | 35,00        |
| Independent study and work            | 15,00        |
| Preparation of lessons                | 20,00        |
| Preparation for assessment activities | 13,00        |
| Resolution of case studies            | 5,00         |
| <b>Total hours</b>                    | <b>90,00</b> |

## TEACHING METHODOLOGY

The course will consist of three types of classes with differentiated methodology:

a) Theoretical and practical classes where the basic theoretical content of the course will be taught, as well as practical examples to further illustrate them. To increase the presentation/assimilation ratio, graphic tools may be used to present content, such as slides, including graphs, drawings, videos, and animations, in combination with whiteboard discussions/presentations. Likewise, simple practical demonstrations, particularly relevant examples, applets, simulations, etc., may be presented to illustrate some of the concepts explained. Students will be encouraged and guided to expand on the content taught in each class through the recommended bibliography, as well as the possibility of expanding their knowledge in future courses.

b) Seminars. Activities to solve proposed topics, bibliography discussion sessions, previously assigned to different groups of students, and the development and discussion of practical cases.

c) Practical laboratory classes. Students will work in groups with different diagnostic devices, both for the optical and neural components of the visual system, and complete the specific tasks assigned to each device. They will participate in simulations led by the faculty.



## EVALUATION

The assessment system for this subject will be structured through three types of tests:

A) Written assessment (60% of the grade), consisting of theoretical questions that allow students to verify their understanding of the theoretical foundations of the subject and theoretical and practical questions that assess their ability to carry out real-life applications of the techniques and models studied. Students' critical thinking skills will always be assessed, as well as the accuracy of their arguments and justifications. A minimum of 4 points out of 10 is required to pass the subject.

B) Seminar assessment through continuous assessment (20% of the grade), based on proposed topics or clinical case studies. Students will complete a project and give an oral presentation.

C) Practical assessment (20% of the grade), consisting of tests in an optometry office on visual assessment techniques and various therapies. In this case, a practice sheet will assess both the student's skills and ability, as well as their ability to adapt to different situations that may arise in real life. This form of continuous assessment allows for monitoring the progress of the student's skills in the office.

On the second call, only the written assessment will be given, and the grade for the remaining tests will be retained.

## REFERENCES

### Basic

- Coco, M; Herrera, J. Manual de baja visión y rehabilitación visual (2015). España, Editorial Médica Panamericana SA
- González Diaz-Obregón, E; Montalt Rodrigo, JC. Experto en estrabismos y Ortóptica. 2ª Ed (2014). Madrid, CNOO. España.
- Vidal López, J. Manual de terapia visual (2015). España, Saera.

### Complementary

- Scheiman, M.M; Wick B. Tratamiento de la visión binocular: disfunciones heterofóricas, acomodativas y oculomotoras (1996). Madrid, Lippincott-Ciagami.
- Edwin B. Merh. El cuidado de la baja visión (1992). Madrid, ONCE.