

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

<b>Code</b>	34320
<b>Name</b>	Low vision, orthoptics and visual therapy
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	6.0
<b>Academic year</b>	2020 - 2021

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
1207 - Degree in Optics and Optometry	Faculty of Physics	4	Second term

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1207 - Degree in Optics and Optometry	16 - Optional subjects	Optional
1207 - Degree in Optics and Optometry	21 - Advanced optometry	Optional

**Coordination**

<b>Name</b>	<b>Department</b>
MONTALT RODRIGO, JUAN CARLOS	280 - Optics and Optometry and Vision Sciences

**SUMMARY**

Low vision, orthoptics and vision therapy is a course of 6 ECTS credits as part of the module called Advanced Optometry. Course is taught in the fourth and is optional.

The course is divided into two parts: I: LOW VISION and II: orthoptics and vision therapy. The contents of the course are:

**LOW VISION**

Psychological aspects in the relationship between the optometrist and the patient with low vision.

Development of data entry and medical records.

Interpretation and clinical trial results of visual tests to establish the diagnosis and appropriate treatment.

Visual examination and treatment of patients.

Calculation of the geometric parameters of visual compensation systems in low vision.

Prescription, control and monitoring of optical corrections.

Application of optical and non-optical low vision.



## Orthoptics and vision therapy

Psychological aspects of patient Orthoptics and Vision Therapy.  
Development of data entry and medical records.  
Visual examination and treatment of patients.  
Assessment and interpretation of visual abnormalities strabismic and strabismic not.  
Design, implementation and control of programs Orthoptics and Vision Therapy.  
Prescription, management and monitoring of optical corrections.  
Management tools and tests in Visual Therapy

## 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.

## OUTCOMES

### 1207 - Degree in Optics and Optometry

- To have and to understand the fundamentals of Optometry for its correct clinical and healthcare application.
- Knowing how to apply the knowledge acquired to professional activity, knowing how to solve problems and develop and defend arguments.
- 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.
- 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.



## LEARNING OUTCOMES

To acquire the skills to the test, ytratamiento diagnosis of patients with specific problems.  
Being able to calculate the geometric parameters of specific visual compensation systems in low vision, vision therapy and orthoptics.  
Knowing prescribing and monitoring of optical corrections.  
Being able to provide visual aids based on the findings and reports submitted.  
Distinguish the characteristics and applications of optical instruments applied to patients with specific problems.  
Know and apply the aid of optical and non-optical low vision.  
Knowing sensory and oculomotor mechanisms of binocular vision.  
Design and implement programs orthoptics and vision therapy.

## 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. 1  
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. 1  
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. 3  
Unit 4: Preliminary examination and management of patients with low vision.  
Knowledge and development of special techniques used in optometric low vision examination. 2  
Unit 5: retinal pathologies affecting low vision.  
Identification ophthalmologic symptoms and signs of patients with low vision. 2  
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. 2  
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. 2  
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



## 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. 2.5

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 2.5

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. 2.5

## 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. 1

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. 1

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. 3

UNIT 4: Treatment of oculomotor dysfunctions.

Characteristics of oculomotor dysfunctions. Evaluation. Differential Diagnosis. Therapy Program: treatment exercises. 2

UNIT 5: Treatment of accommodative dysfunctions.

Features accommodative anomalies. Evaluation. Differential Diagnosis. Therapy Program: treatment exercises. 2

UNIT 6: Treatment vergenciales anomalies.

Features vergenciales dysfunctions: condition AC / A low, high and normal. Evaluation. Differential Diagnosis. Therapy Program: treatment exercises. 2

UNIT 7: Treatment of amblyopia.

Characteristics of amblyopia. Evaluation. Forecast. Treatment: optical correction, occlusion, penalization, prisms, Pleoptics, vision therapy. 2

UNIT 8: Treatment of strabismus.

Features strabismus. Evaluación.Tratamiento: optical correction, occlusion, prisms, drugs, orthoptics surgery. 2

**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. 2.5

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

Identification of oculomotor abnormalities, accommodative and binoculars. Application of vision therapy treatments. 2.5

Practice 3: Techniques and Pleoptics orthoptics in strabismic anomalies.

Identification of different strabismic binocular vision anomalies. Application of treatments and Pleoptics orthoptics. 2.5

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Tutorials	15,00	100
Laboratory practices	15,00	100
Attendance at events and external activities	2,00	0
Development of group work	10,00	0
Development of individual work	25,00	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
Preparation of practical classes and problem	10,00	0
Resolution of case studies	5,00	0
Resolution of online questionnaires	3,00	0
<b>TOTAL</b>	<b>150,00</b>	

**TEACHING METHODOLOGY**

e course will consist of three types of classes with different methodology:

- (i)  
Theoretical and practical classes
- (ii)  
seminars
- (iv)





### Practical classes cabinet

In classes of type (i) will be taught the basic theoretical course and practical examples that better illustrate. To increase the ratio presentation / assimilation may use graphical tools content presentation through slides, including graphs, pictures, videos and animations, combined with discussions / presentations on board. Also, it may make simple demonstrations, examples especially relevant aplets, simulations, etc., allowing illustrate some of the concepts explained. It will encourage and guide the student in expanding the content received in each class through the recommended reading, and the possibility of broadening knowledge in future courses.

Activities for seminars: 1) items proposed resolution, 2) literature discussion sessions, previously assigned to different groups of students. 3) the development and discussion of case studies.

In practical classes, students must work with different diagnostic devices, both from the perspective of the visual system and the neural part, in groups, and perform the specific tasks assigned to each device. Simulations conducted teacher-led.

## EVALUATION

The evaluation system of this area will vary depending on load and training of the subject. Basically, be articulated through three types of tests:

A) Written evaluation by theoretical questions exercises that substantiate the theoretical assimilation of matter and the theory and praxis which evaluates the student's ability to perform real-world applications of the techniques and models studied. Always be assessed the student's critical thinking and argumentation correction proposals and justifications. The written assessment is 60% of the grade. You need to score at least 4 out of 10 to pass the course.

B) Evaluation of the seminars, through realization of proposed topics or resolution of clinical cases. The student will work and will make an oral presentation of the same. Assigning custom work and development issues interactively in the classroom allow continuous evaluation. The evaluation of the seminars is 20% of the grade.

C) Practical evaluation by testing cabinet optometry visual assessment techniques and therapies. In this case, through a practice sheet shall assess both the skill and ability of the student as the ability to adapt to the different cases that may arise in real life. This form of continuous assessment, allows monitoring the development of students' skills in the cabinet. The practical test is 20% of the grade.



## REFERENCES

### Basic

- 10.1 Referencias Básicas
  - Scheiman, M.M. Wick B. (1996): Tratamiento de la visión binocular: disfunciones heterofóricas, acomodativas y oculomotoras. Madrid, Lippincott-Ciagami.
  - Montalt Rodrigo, JC. González Díaz-Obregón (2006), E. Experto en Estrabismo y Ortóptica, Valencia, COOCV.
  - Vidal López, J. (Coord) (2007): Manual de terapia visual. España, Saera.
  - Natalia C. Barragán, (1986): Baja Visión, Escala de deficiencias visuales, Guía del maestro para el desarrollo de la capacidad visual. Madrid. ONCE
  - Angel Barañano, (1992) Estudio de las ayudas prescritas a 1.000 pacientes con Baja Visión. Madrid. ONCE
  - Inde Kristel. (1998): El adiestramiento en la Visión Subnormal, Madrid, ONCE.
  - Edwin B. Merh, (1992): El cuidado de la baja visión. Madrid, ONCE.
  - V. Roda, (2004): Baja visión en pacientes pediátricos, en Optometría Pediátrica, Ediciones Ulleye. Xativa
  - Eleonor F. Faye, (1997): Clínica de la baja visión, Madrid, ONCE.
  - Richard L. Brilliant, (1999): Essentials of low vision practice, Hardcover.
  - Carmen Arjona Ariza, (1994): Deficiencias visuales, Aspectos psicológicos y educativos. Educación para la diversidad, Archidona (Málaga), Aljibe.

### Additional

- 10.2 Referencias Complementarias
  - Varios autores, (1996) Actas y conferencias sobre baja visión, Madrid, ONCE.
  - Bruce P. Rosenthal, (1996): Funtional assessment of low vision, Paperback.
  - Cristine Dickinson, (1998): Low vision, principles and practice, Paperback.
  - José Miguel Vila López, (1994), Apuntes sobre Rehabilitación Visual. Madrid, ONCE.

## ADDENDUM COVID-19

**This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council**

Durant el mes de febrer 2021, la docència de teories i seminaris-treballs tutelats, passen a modalitat de videoconferència síncrona impartida en l'horari fixat per l'assignatura i el grup.



A partir de l'1 de març, se seguirà la modalitat docent indicada en la Guia Docent i a les modalitats docents aprovades en les Comissions Acadèmiques de Títol dels mesos de juliol 2020 i novembre 2020, respectivament, tret que les autoritats sanitàries i Rectorat indiquin una nova reducció de presencialitat, en aquest cas es tornaria a la modalitat de videoconferència síncrona.

