

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

<b>Code</b>	43868
<b>Name</b>	Vision rehabilitation
<b>Cycle</b>	Master's degree
<b>ECTS Credits</b>	3.0
<b>Academic year</b>	2022 - 2023

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. Period year</b>
2175 - Master's Degree in Advanced Optometry and Vision Sciences	Faculty of Physics	1 First term

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
2175 - Master's Degree in Advanced Optometry and Vision Sciences	4 - Vision rehabilitation	Obligatory

**Coordination**

<b>Name</b>	<b>Department</b>
FAMBUENA MUEDRA, ISABEL	280 - Optics and Optometry and Vision Sciences
HERNANDEZ ANDRES, ROSA MARIA	280 - Optics and Optometry and Vision Sciences

**SUMMARY**

The overall purpose of this course is to make an approach to different situations that can be found optometrist. In particular in three types of people who can be treated more frequently in the cabinets of optometrists, like children, elderly or disabled that presenting visual abnormalities that are associated with other sensory disturbances as hearing impairment, low vision, intellectual disability, etc. need to be treated with special techniques.

**PREVIOUS KNOWLEDGE**



### **Relationship to other subjects of the same degree**

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

### **Other requirements**

For the proper use of the subject must be in possession of the Degree in Optics and Optometry. The knowledge addressed is based on the theoretical and practical bases studied in this Degree. To study this subject, general knowledge in Optometry, Contactology, and Adaptation of ophthalmic lenses is recommended. Moreover, general knowledge on Low Vision and Visual Therapy is required.

### **2175 - Master's Degree in Advanced Optometry and Vision Sciences**

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Know how to work in multidisciplinary teams reproducing real contexts and contributing and coordinating their own knowledge with that of other branches and participants.
- Participate in, lead and coordinate debates and discussions, be able to summarize them and extract the most relevant conclusions accepted by the majority.
- Use different presentation formats (oral, written, slide presentations, boards, etc.) to communicate knowledge, proposals and positions.
- Proyectar sobre problemas concretos sus conocimientos y saber resumir y extractar los argumentos y las conclusiones más relevantes para su resolución.
- Tener capacidad de análisis crítico de la información especializada en los ámbitos propios del máster.
- Tener un compromiso ético y responsabilidad social, tanto en lo que compete a la componente asistencial ligada a la profesión de óptico-optometrista como a lo que respecta a la investigación clínica.
- Tener capacidad de trabajo en equipos multidisciplinares en el área de las ciencias de la salud.
- Conocer la legislación aplicable en el ejercicio profesional, con especial atención a las materias de de igualdad de género entre hombre y mujeres, derechos humanos, solidaridad, protección del medio ambiente y fomento de la cultura de la paz.



- Saber seleccionar que casos son subsidiarios de terapia visual.
- Saber seleccionar que patologías mejoran sus resultados funcionales con la aplicación de las técnicas y equipos de baja visión.
- Saber planificar una rehabilitación visual.

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- Know optometric different fields in which this material can be applied.
  - Knowing the specific rehabilitation for each patient group or area of activity: subjects with learning disabilities, individuals with visual impairments caused by brain damage, strabismus and amblyopia, binocular anomalies, difficulties of visual development from birth through childhood, athletes elite computer visual syndrome, visual dizziness.
  - Knowing pathologies such as inflammatory processes and neural processes of the retina, which may imply the presence of functional residual vision techniques, can be enhanced in low vision rehabilitation.
  - To recognize the characteristic symptoms those indicate the need for visual rehabilitation in different areas of activity.
  - Knowing how to perform visual rehabilitation techniques to be applied in different areas of work or different types of subjects.
  - Know how to approach the visual rehabilitation program in different groups of subjects.
  - Learn about the latest research in this field.
  - Know how to recognize when intervention is required in addition to other professional along with the optometrist.

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## DESCRIPTION OF CONTENTS

### 1. REHABILITATION TECHNIQUES IN LOW VISION

- Review of valuation principles and low vision correction
- Development of data bases and visual rehabilitation project
- Interpretation of symptoms, characteristics and results of optometrics tests carried out in order to establish an individual rehabilitation programme
- Sensory skills and daily life activities training
- Location and mobility training
- Paediatrics low vision
- Latest advances in electronic visual aids and its mainly applications



**2. ADVANCES AND RESULTS OF ACTIVE VISUAL THERAPY**

- Review of the basics of visual therapy
- Review of the basic notions to prepare the protocol of a treatment by visual therapy
- Symptoms and characteristics of the different groups of subjects that indicate the need for visual rehabilitation / visual therapy
- Latest advances in optometric eye therapy based on scientific advances and new methodologies. Recent bibliography

**3. PRACTICAL CLINICAL CASE STUDY**

- Programming of rehabilitation in different groups of people with: binocular anomalies, subjects with visual difficulties caused by brain damage, strabismus and amblyopia, different syndromes, sport and visual skills
- Daily and current application of visual training through real cases
- Simulation of some real situation of people with visual disability
- Program of daily life activities training, like eating

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Seminars	16,00	100
Theory classes	8,00	100
Preparation of evaluation activities	5,00	0
Preparing lectures	16,00	0
Preparation of practical classes and problem	28,00	0
<b>TOTAL</b>	<b>73,00</b>	

**TEACHING METHODOLOGY**

The course consists of three different classes with different methodology:

- (1) Theoretical and practical classes
- (2) Seminars
- (3) Practical classes

In classes of type (1) will be taught the basic theoretical course and practical examples that better illustrate. To increase the ratio presentation / assimilation can use graphical tools content presentation through slides, including graphs, drawings, videos and animations, combined with discussions / presentations on blackboard. Also, it may make simple practical demonstrations, particularly relevant examples, simulations, etc, allowing illustrating some of the concepts. It will encourage and guide the student in expanding the content received in each class through the recommended reading as well as the possibility of extending knowledge in subjects future.



Activities for seminars (2): A) resolution of issues proposed, B) literature discussion sessions, previously assigned to different groups of students, C) Development and discussion of case studies, D) Lectures given by specialists in the field, E) Activities and / or visits of interest to students, related to the subject taught.

In the practical sessions (3), students will work with different diagnostic devices, both from the perspective of the visual system of the neuronal, in groups, and perform the specific tasks assigned to each device. They will perform simulations directed by the teacher and must work, in groups, in simple diagnosis or treatment devices and perform the specific tasks assigned to each device.

## EVALUATION

A) Assessment by means of a written test which will have two parts, one of short questions and the other of multiple-choice questions. The multiple-choice part will subtract 1 correct question for every (n-1) incorrect answer options. The tests will check the assimilation of the theoretical foundations of the subject and theoretical-practical questions where the student's ability to carry out real applications of the techniques and models studied will be assessed. The written assessment accounts for 60% of the mark.

B) Evaluation of the seminars, by means of preparation of proposed topics and reading and analysis of scientific articles and/or resolution of clinical cases. The student will write a paper and make an oral presentation of it. In addition, the seminars are carried out interactively in the classroom, which will allow for continuous assessment. Attendance is compulsory. The evaluation of the seminars is 20% of the mark.

C) Evaluation of work developed jointly by one or more students. Attendance will be recorded to allow continuous assessment. This form of continuous assessment allows to observe the evolution of the student's skills during the time of the sessions. The practical assessment is 20% of the mark. In the case of online students, in this section they will solve practical cases, handling of instruments and/or technological applications and scientific articles on scientific advances of interest.

For all students: In order to pass the course, it is necessary to pass (50% of the mark) each of the three sections, written evaluation, seminars and practical evaluation.

## REFERENCES

### Basic

- Scheiman, M. (2008): Clinical management of binocular vision: heterophoric, accommodative, and eye movement disorders / Mitchell Scheiman, Bruce Wick Philadelphia: Lippincott Williams and Wilkins. 9780781777841
- Caloroso, Elizabeth E. (1999): Tratamiento clínico del estrabismo / Elizabeth E. Caloroso, Michael W. Rouse; Susan A. Cotter. Madrid: Ciagami. 8488985045



- Birnbaum, Martin H. (1993) Optometric management of near point vision disorders. Martin H. Birnbaum Boston [etc.] : Butterworth-Heinemann. 075069193X
- Coco, Herrera, Cuadrado, De Lázaro (2015): Manual de Baja Visión y Rehabilitación Visual. Editorial Médica Panamericana.
- Suter, P. S., & Harvey, L. H. (2011). Vision rehabilitation: multidisciplinary care of the patient following brain injury / edited by Penelope S. Suter, Lisa H. Harvey. Taylor & Francis. <https://doi.org/10.1201/b10524>
- Zihl, J., & Dutton, G. N. (2014). Cerebral Visual Impairment in Children: Visuoperceptive and Visuocognitive Disorders (2015th ed.). Springer Wien. <https://doi.org/10.1007/978-3-7091-1815-3>

#### **Additional**

- Inde Kristel. (1998): El adiestramiento en la Visión Subnormal, Madrid, ONCE.
- Capítulos 22 y 23 del libro Optometría Pediátrica. (2004) Editor: A. López Alemany.
- Roda V, (2004): Baja visión en pacientes pediátricos, en Optometría Pediátrica, Ediciones Ulleye. Xativa
- Eleonor F. Faye, (1997): Clínica de la baja visión, Madrid, ONCE.
- V.V.A.A. (2011). Discapacidad visual y autonomía personal. Enfoque práctico de la rehabilitación, ONCE.