

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

Code	34322
Name	Current optics and optometry-related issues
Cycle	Grade
ECTS Credits	4.5
Academic year	2024 - 2025

Study (s)

Degree	Center	Acad. Period	year
1207 - Degree in Optics and Optometry	Faculty of Physics	4	First term

Subject-matter

Degree	Subject-matter	Character
1207 - Degree in Optics and Optometry	21 - Advanced optometry	Optional

Coordination

Name	Department
GARCIA DOMENE, MARIA DEL CARMEN	280 - Optics and Optometry and Vision Sciences

SUMMARY

The subject Current optics and optometry-related issues presents a summary of the main research advances developed in these two fields, through specialized conferences and informative and introductory research activities.

PREVIOUS KNOWLEDGE**Relationship to other subjects of the same degree**

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



Other requirements

All the knowledge acquired during the previous years of the degree will be necessary.

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

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.
- To know the latest research in the fields of Optics, Optometry and Vision Sciences.

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

The student will have a broad and up-to-date knowledge of the main lines of research that are currently being developed in the fields of optics, optometry and vision sciences.

DESCRIPTION OF CONTENTS

1. Optic and visual quality

Measurement of visual quality, optical quality and transmittance. IOLs and refractive surgery applications. Clinical studies

2. Optic devices for dichromacies and pinhole glasses

Types of aids for dichromats, types of reticular glasses. Effectiveness of these devices



3. Refractive error correction

Current status of the main research related to myopia, refractive error correction, with special emphasis on the optometrist role in these fields

4. Advandec image technics

Advanced fundus imaging techniques. Fundus imaging methods. Coherent and incoherent image. Fundus measurements. Image analysis techniques. Optical coherence tomography.

5. Eye aging

Eye Aging. New theories and latest developments in the optometric clinic. New presbyopia correction techniques

6. The laser

Introduction to lasers. Types of lasers. Laser applications in ophthalmology. Introduction to laser safety: Eye damage, legislation and protection.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Tutorials	15,00	100
Attendance at events and external activities	7,50	0
Study and independent work	35,00	0
Readings supplementary material	10,00	0
Preparing lectures	10,00	0
Resolution of online questionnaires	5,00	0
TOTAL	112,50	

TEACHING METHODOLOGY

The subject will consist of two types of activities, with a differentiated methodology:

- (i) Theory classes and seminars
- (ii) Demonstrations and visits to laboratories



In type (i) classes, the basic theoretical contents of the subject will be taught, with practical examples, group discussions and activities. In type (ii) classes, research laboratories will be visited.

EVALUATION

The evaluation of the subject will be made with the following criteria (out of 10 points):

- a. 7 points: all students enrolled in the course will have to take an exam, which accounts for 70% of the grade for the course and consists of a written test with theoretical and practical questions on the knowledge acquired in theoretical classes and seminars. This test will consist of a series of multiple-choice questions and several essay questions. Multiple-choice questions will have several answers to choose from, but only one valid solution.
- b. 3 points: continuous evaluation of the work carried out in the seminars.

The total grade for the subject will be the sum of the exam (a) and continuous assessment (b) sections, being able to obtain a maximum of 10 points. The grade required to pass the course will be 5 points. To pass, it will be a requirement that the exam mark be greater than 5 points out of 10. If the exam mark exceeds the mark of the exam + continuous assessment set, the mark of the subject will be that of the exam. That is, the final grade for the course will be the highest between:

- the exam grade.
- The exam mark + continuous evaluation.

The evaluation in the second call will be equal to that of the first. The continuous evaluation will be non-retrievable.

REFERENCES

Basic

- Benjamín Alonso Fernández et al. (2010). El láser, la luz de nuestro tiempo. Universidad de Salamanca, Centro de Láseres Pulsados Ultracortos Ultraintensos (CLPU). Globalia Artes Gráficas



- Revistas científicas en optometría y ciencias de la visión: Eye and Contact Lens, Optometry and Vision Science, Journal of Optometry, Ophthalmic and Physiological Optics, Investigative ophthalmology & visual science
- Revistas científicas relacionadas con oftalmología: Ophthalmology, International Ophthalmology, Acta Ophthalmologica, British Journal of Ophthalmology, Journal of Cataract & Refractive Surgery, Journal of Refractive Surgery

Additional

- Otras revistas relevantes: Current Eye Research, PLOS ONE, Journal of Modern optics