COURSE DATA

Data Subject	
Code	34322
Name	Current optics and optometry-related issues
Cycle	Grade
ECTS Credits	4.5
Academic year	2022 - 2023

Study (s)

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

Subject-matter

Degree	Subject-matter	Character
1207 - Degree in Optics and Optometry	16 - Optional subjects	Optional
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
GARCIA MONREAL, FRANCISCO JAVIER	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.

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

LEARNING OUTCOMES

The student will have a wide and updated knowledge of the main current research lines being developed in the fields of optics, optometry and vision sciences

DESCRIPTION OF CONTENTS

1. Optic and visual quality

Measurment of visual quality, optical cuality and trasmittance. IOLs and refracrtive surgery applications. Clinical studies

2. Optic devices for dichomacies 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. Optical Coherence Tomography

Basics on OCT. Scanning types. Domains. Resolution and sensitivity. Image interpretation. Applications to retinal and anterior segment image

5. Advandec image technics

Advanced fundus imaging techniques. Fundus imaging methods. Consistent and inconsistent image. Fundus measurements. Image analysis techniques

6. Eye aging

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

7. 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 course will consist of two types of activities with different methodology:(i)Lectures(ii)Demonstrations and visits to laboratoriesIn the classes of type (i) the basic theoretical contents of the course will be taught, with practicalexamples. In the classes of type (ii), research labs will be visited.

EVALUATION

The subject will be evaluated by means of an exam. This exam will consist of two parts:

-First part will account for 90% and will be obtained through a multiple-choice exam consisting of 30 to 40 multiple-choice questions, subtracting 1 correct question for every 3 incorrect ones.

-The second part is voluntary and it will have the remaining 10% of the grade. It will be obtained through an examination of development questions.

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