

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

Code	43877
Name	Ocular surface
Cycle	Master's degree
ECTS Credits	3.0
Academic year	2023 - 2024

Study (s)

Degree	Center	Acad. Period	year
2175 - M.U. en Optometría Avanzada y Ciencias de la Visión 13-V.2	Faculty of Physics	1	First term

Subject-matter

Degree	Subject-matter	Character
2175 - M.U. en Optometría Avanzada y Ciencias de la Visión 13-V.2	13 - Ocular surface	Optional

Coordination

Name	Department
FURLAN, WALTER DANIEL	280 - Optics and Optometry and Vision Sciences

SUMMARY

The concept of ocular surface (OS), recently introduced, is an anatomical-functional concept that aims to integrate in a subspecialty the study of all those ocular components in direct relation with the external environment. It includes the outer tissues of the globe such as the cornea, conjunctiva, the sclero-corneal limbus, the eyelids, ... and those glands that contribute to the support and good functioning of the same, as the lacrimal apparatus, so important in the maintenance of the tear film and the innervation to maintain the homeostasis of the OS. Anatomically, the OS is composed of the non-keratinized epithelium of the cornea and conjunctiva. The corneal epithelium needs to have transparency to provide good visual quality. Throughout the life of the human being that can lead to various diseases that can cause loss of vision to a greater or lesser extent. Dry eye syndrome is the most frequent ocular disease in our environment. This subject is an introduction to this anatomo-functional ocular structure that has acquired great importance in the last decades. Its composition, diseases by different causes and its differential diagnosis will be studied. The great development of technological diagnostic devices such as optical coherence tomography (OCT), corneal tomography, as well as the great advance in knowledge has meant a great development of this subspecialty.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

OUTCOMES

2175 - M.U. en Optometría Avanzada y Ciencias de la Visión 13-V.2

- 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 extraer 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.



LEARNING OUTCOMES

To train students to prevent alterations of the ocular surface.

To enable the student to make the differential diagnosis between normal and abnormal ocular surface.

Recognize the effect of age in the ocular surface.

Know what kind of devices can help to protect or reconstruct the ocular surface.

DESCRIPTION OF CONTENTS

1. STRUCTURE OF THE OCULAR SURFACE

- 1.1 Macroscopic and microscopic anatomy of the ocular surface.
- 1.2 Physiology of the ocular surface

2. EXPLORATION OF THE OCULAR SURFACE

- 2.1 Clinical examination of the ocular surface.
- 2.2 Study of the ocular surface in the laboratory.

3. EYE SURFACE AND ENVIRONMENT

4. DIFFERENTIAL DIAGNOSIS BETWEEN NORMAL AND ABNORMAL OCULAR SURFACE

- 4.1 The eyelid, static and dynamic: Their alterations.
- 4.2 The tear and its alterations: The dry eye.
- 4.3 The cornea: Its alterations.

5. OCULAR SURFACE AND SYSTEMIC DISEASES

6. CORNEAL ECTASIAS

- 6.1 Corneal ectasia. Classification and description of the different types.
- 6.2 Diagnostic methodology.



7. THE CORNEA FROM ANOTHER POINT OF VIEW

8. CORNEA TRANSPLANTS

- 8.1 Concept, types and purpose.
- 8.2 Operation of an eye tissue bank.

9. THE CONTACT LENS AS A FOREIGN BODY ON THE OCULAR SURFACE, FACTORS THAT INFLUENCE ITS RELATIONSHIP WITH IT

10. DISCUSSION PRACTICAL CLINICAL CASES AND VIDEOS

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	12,00	100
Seminars	6,00	100
Laboratory practices	6,00	100
Preparation of evaluation activities	10,00	0
Preparing lectures	23,00	0
Preparation of practical classes and problem	12,00	0
TOTAL	69,00	

TEACHING METHODOLOGY

The use of audiovisual methods, that illustrate more clearly the theoretical content and examples to develop will be strengthened,

Theoretical small group sessions (seminars) are devoted to work sessions in group / student, with proposals of real cases to be analyzed and studied by the group. The interactivity of the group to be searched several bands through oral presentations and classroom examples and accounted in continuous assessment, in the semi-face or online mode pupils perform these sessions through the mechanisms provided by the virtual classroom for interconnection .

Practical classes: classes are modality in which the theoretical concepts are developed in practical use in the clinical practice of optometry. These classes, reduced to maximum of ten students group, is carried out first with simulated patients to later in the sequence of the field, developed on real patients.



Individualized tutoring: to be conducted both in person or online through the mechanisms offered by the Virtual Classroom of the University of Valencia.

EVALUATION

Evaluation by written examination. Mainly test questions with multiple choice answers and 1 or 2 development questions. It will be worth 90% of the final grade.

Evaluation of work developed jointly by one or more students, participation and discussion of the cases in the classes, for a value of 10% of the final grade.

REFERENCES

Basic

- M^a Ángeles Del Buey Sayas, Cristina Peris Martínez. Biomecánica y Arquitectura Corneal MONOGRAFIA SECOIR. Editorial Elsevier, Barcelona 2014. ISBN (versión impresa): 978-84-9022-649-0. ISBN (versión electrónica): 978-84-9022-785-5.
- Cristina Peris Martínez, Nicolás Alejandro. Actualización en Queratocono. Editorial Glosa, Barcelona 2018. 352 pags. 978-84-7429-669-3.
- Benítez del Castillo Sánchez, J M; Durán de la Colina, J A; Rodríguez Ares, M T. SUPERFICIE OCULAR. Madrid: Sociedad Española de Oftalmología. 2004.
- González-Méijome, JM; Villa Collar, C. SUPERFICIE OCULAR Y LENTES DE CONTACTO. Madrid: ICM, 2016.

Additional

- Efron N. COMPLICACIONES DE LAS LENTES DE CONTACTO. Madrid: Elsevier, 2005.
- Lowther G E. DRYNESS, TEARS, AND CONTACT LENS WEAR. Boston: Butterworth-Heinemann, 1997.
- Foster CS, Azar DT, Dohlman CH. et ál. Smolin and Thoft's the Cornea: Scientific Foundations and Clinical Practice. The Cornea. 2005.
- Barraquer R I; de Tolero M C; Torres E. DISTROFIAS Y DEGENERACIONES CORNEALES. ATLAS Y TEXTO. Barcelona: Espaxs, S. A., 2004.