

26821 - Optometric Actions in Ophthalmic Surgery

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	297 - Degree in Optics and Optometry
ECTS	8.0
Course	4
Period	Annual
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process that is designed for this subject is based on the following:

1. In-situ Activities (8 ECTS credits, 80 hours)

1.1 Formative Activity 1 (Large Groups): Acquisition of basic knowledge of optometry in relation to surgical actions of the pathologies and ophthalmologic procedures.

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* Methodology:

- Introductory Lectures (Theoretical program, 29 lessons, 30 hours, 3 ECTS credits)

1.2 Formative Activity 2 (Small Groups / Subgroups): practical clinical experience regarding the evaluation and management of ocular pathologies.

* Methodology:

- Practices in hospital, external practices. Activities with real patient (9 hours, 0.9 credits ECTS)

- Troubleshooting and Cases. Seminars. (10 hours, 1 ECTS credits)

- Lab practices. Workshops. Seminars. (31 hours, 3.1 ECTS credits)

2. Non-presential activities (8 ECTS credits, 120 hours)

Independent student work devoted to the study of the theoretical program and the preparation of seminars and workshops.

This activity relies majorly on the online activities of the "Anillo Digital Docente" that complements in-site lectures and activities.

Consists of:

- General Course information stating the program objectives and evaluation criteria.

- Documents for preparation of Seminars, Workshops and Practices. These documents allow the assessment of these educational activities.

Preparation and presentation of a supervised individual work

- Library Podcasts: clinical and surgical procedures

- Practical Clinical cases that complement the theoretical lessons.

- The questionnaire of possible test questions to provide students with their preparation.

5.2.Learning activities

It includes the following activities

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1: Performance agenda Optometry related to Ophthalmic Surgery.

2: Seminars.

Seminar 1: Corneal Topography: Applications and clinical use in the context of refractive surgery.

Seminar 2: OCT: Applications and clinical use in the context of ophthalmic surgery.

Seminar 3: Update on phakic lenses.

Seminar 4: Ophthalmovideos: Ophthalmic Surgery and Premium Lenses.

Seminar 5: Corneal Hysteresis. Corneal biomechanics.

Seminar 6: Corneal Reconstructive Surgery.

Seminar 7: Decision-taking Algorithms for Corneal Refractive Surgery.

Seminar 8: Adaptive Optics.

3: Workshops.

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- Workshop 1: Geometric patterns of eye and relationship with the ocular aberrations. Asphericities. Ocular axes

- Workshop 2: Aberrometry.

- Workshop 3: Ray-tracing for different formulas.

- Workshop 4: Evaluation of preoperative visual function (determination of VA, Aberrometry, estereopsis, pupilometry).

- Workshop 5: Evaluation of postoperative visual function (determination of contrast sensitivity, halometry) . Reading Speed tests. Questionnaires of Visual Function and Quality of Life.

- Workshop 6: Instrumental assessment of the anterior segment

- Workshop 7: Biometrics and pachymetry.

- Workshop 8: Practical Assessment of tear film. Osmolarimetry.

- Workshop 9: Decision-taking Algorithms for Corneal Refractive Surgery. Clinical cases.

- Workshop 10: Decision-taking Algorithms for Refractive Surgery. Clinical cases.

4: Hospital Practice.

- They will take place at the University Hospital "Miguel Servet" and Clinico Universitario "Lozano Blesa"

5.3.Program

Unit I: Anatomy and Physiology.

1 Anatomical and physiological bases of the anterior and posterior segment. Optometric implications.

Unit II: Functional Optometry and structural surgical guidance: Techniques and basic tests

2- Visual Quality Concept. Image degradation. Factors and structures involved. Figures. Metrics.

II. a. Objective and subjective refraction.

3- Objective Refraction. -Retinoscopy and keratometry.- manual and automated systems

-Autorefractometer-Keratometer-.

4- Manifest Subjective Refraction. Special features in refractive surgery

II. b. Measurement and evaluation of visual function. Visual quality.

5- Determination of visual acuity and contrast sensitivity. Special lighting conditions -photopic, mesopic and glare-.

6. Corneal asphericity. optometric implications.

7. Corneal -Topography. Systems and applications.

8. Pupillometry.

9. Image degradation. Diffraction and scattering.

10. Ocular Aberration. Clinical applications.

11. Figures of merit or metric of optical quality of the visual system.

12. OQAS. clinical applications.

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II.c.-Techniques and Methods of Structural evaluation Anterior Segment.

13. Pachymetry. Principles and practical application.

14. Confocal Microscopy. Endothelial specular microscopy evaluation.

15.- Coherence Tomography Optics (OCT). Ultrasonic biomicroscopy (BMU). Applications in ophthalmic surgery

II.d.- Tear film Evaluation. Corneal sensitivity.

16- Stability of the tear film. BUT break time / NIBUT. Tear clearance test. Osmolarimetry. Estesiometry: Exploring corneal sensitivity.

Unit III: Optometry and refractive surgery.

III. a.- Clinical Practice Guidelines in preoperative evaluation.

17. Preoperative management of refractive patient. Exploratory protocol. Instrumental evaluation and exclusion criteria I

18. Preoperative management of refractive patient. Exploratory protocol. Instrumental evaluation and exclusion criteria II

19. Corneal ectasias.

III. b. Instrumentation and refractive lens procedures.

20.- Optic Refractive Surgery. Ultrasound and optical biometry. Calculating the refractive power of IOLs. I

21. Optic Refractive Surgery. Ultrasound and optical biometry. Calculating the refractive power of IOLs. II.

21. Ophthalmic surgery. Principles and technique. Intraocular lenses.

23. Ophthalmic surgery. Complications.

24. Intraocular Lenses.

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III. c.-. Instrumentation and procedures. Corneal refractive patient.

25.- Corneal refractive surgery. Excimer Laser. Principles and technique.

26.- Corneal refractive surgery. Excimer Laser. Complications.

27. Astigmatism: surgical precedures.

28. Intrastromal rings. Applied Optometry.

III d.- Analysis and visual assessment: optometric post surgical monitoring.

29. Analysis and visual evaluation: optometric post surgical follow-up. Glare. Halometría. Satisfaction questionnaires.

5.4.Planning and scheduling

A calendar of training activities of the subject and the configuration of the groups set will be provided by the coordinator of the the Grade. The timetables and activities will be available to students in the ADD (Moodle 2).

5.5.Bibliography and recomended resources

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