

26821 - Optometric Actions in Ophthalmic Surgery

Syllabus Information

Academic Year: 2018/19

Subject: 26821 - Optometric Actions in Ophthalmic Surgery

Faculty / School: 100 - Facultad de Ciencias

Degree: 297 - Degree in Optics and Optometry

ECTS: 8.0

Year: 4

Semester: Annual

Subject Type: Compulsory

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

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

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1. 1. **Classroom instruction (8 ECTS credits, 80 hours)**

1.1 Training activity 1 (Large groups):

- Basic knowledge acquisition in optometry in relation to surgical procedures of pathologies and ophthalmological procedures.
- Methodology: Introductory participative master classes (Theoretical Programme, 29 lessons, 30 hours, 3 ECTS)

1.2 Training Activity 2 (Small Groups/Subgroups):

- Practical clinical experience related to the assessment and treatment of ocular pathologies.
- Methodology:

- Internship in hospital centre, external curricular practices. Training with real patients (9 hours, 0,9 ECTS)

- Case and problem solving. Seminars. (10 hours, 1 ECTS credits)

- Laboratory practice. Workshops. Seminars. (31 hours, 3,1 ECTS credits)

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

This consists of students' independent work devoted to the study of the theoretical programme and to the preparation of seminars and workshops before and after they take place.

In the subject ?Actuación Optométrica en Cirugía Oftalmológica? (Optometric Procedure in Ophthalmological Surgery), Moodle (Anillo Digital Docente) which has been arranged in order to complement classroom instruction, is given great weight.

It consists of:

- General information of the subject stating the Programme, Objectives and Evaluation criteria.

- Documents enabling the preparation of Seminars, Workshops and Practice. These documents will allow the evaluation of themselves during the training activities mentioned.

- Development and presentation of individual monitored work

- Podcasts library: with clinical and surgical procedures

- Practical clinical cases complementing theoretical teaching.

- Questionnaire of exam possible questions to help the students with their preparation.

4.2.Learning tasks

It includes the activities included in the syllabus

4.3.Syllabus

THEORETICAL SYLLABUS OF OPTOMETRY PROCEDURES IN OPHTHALMOLOGICAL SURGERY

Unit I: Anatomy and physiology of the eyeball.

-Topic 1: anatomic and physiologic basis of the anterior and posterior segment. Optometric implications.

Unit II: Functional and structural optometry of surgical guidance: Techniques and basic tests.

-Topic 2: Visual quality concept. Image deterioration. Factors and structures involved. Metric Figures.

II. a. Objective and subjective refraction.

- Topic 3: Objective Refraction. Manual methods - retinoscopy and keratometry. Automated systems.

Autorefractometer. Keratometer.

-Topic 4: Manifest Subjective Refraction. Distinctive features in refractive surgery.

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

- Topic 5: Visual acuity and contrast sensitivity. Special lighting conditions. (photopic, mesopic and glare)

- Topic 6: Corneal asphericity. Optometric implications.

- Topic 7: Corneal topography. Systems and applications.

- Topic 8: Pupillometry

- Topic 9: Image deterioration. Diffraction and scattering.

- Topic 10: Ocular aberrations. Clinical application

- Topic 11: Optical quality of merit or metric figures of the visual system.

- Topic 12: OQAS. Clinical applications.

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II.C.- Techniques and structural evaluation methods of the anterior segment.

- Topic 13: Pachymetry. Principles and practical application.
- Topic 14: Confocal microscopy. Endothelial evaluation with specular microscopy.
- Topic 15: Optical Coherence Tomography (OCT). Ultrasound biomicroscopy (UBM) Applications in ophthalmological surgery.

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II. d.- Tear film evaluation methods. Corneal sensitivity.

- Topic 16: Tear film stability. Break-up time BUT/NIBUT. Tear clearance test. Osmolarimetry. Esthesiometry (exploration of corneal sensitivity)

Unit III: Optometry and refractive surgery.

III.a.- Clinical practice guidelines in presurgical evaluation.

- Topic 17: Preoperative treatment of refractive patients. Exploratory protocol. Instrumental evaluation and exclusion criteria I.
- Topic 18: Preoperative treatment of refractive patients. Exploratory protocol. Instrumental evaluation and exclusion criteria II.
- Topic 19: Corneal ectasias.

III.b.- Lens refractive patients' instrumentation and procedure.

- Topic 20: Lens refractive surgery. Ultrasound and optical biometry. Intraocular lens power calculation I.
- Topic 21: Lens refractive surgery. Ultrasound and optical biometry. Intraocular lens power calculation II.
- Topic 21: Lens surgery. Technical basics and principles. Intraocular lenses.
- Topic 23: Lens surgery. Complications.
- Topic 24: Intraocular lenses.

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III.c.- Corneal refractive patients' instrumentation and procedure.

- Topic 25: Refractive corneal surgery. Excimer laser. Technical basics and principles.
- Topic 26: Corneal refractive surgery. Excimer laser. Complications
- Topic 27: Astigmatism: Surgical procedures.

- Topic 28: Intrastromal rings. Practical applied optometry.

III.d.- Analysis and visual evaluation. Postsurgical optometrical monitoring.

- Topic 29: Visual Analysis and evaluation. Postsurgical optometrical monitoring. Glare. Halometry. Satisfaction survey.

SEMINARS IN OPTOMETRY PROCEDURE IN OPHTHALMOLOGICAL SURGERY

Seminar 1: Corneal topography. Applications and clinical use in refractive surgery (1 hour)

Seminar 2: calculation of intraocular lenses (2 hours).

Seminar 3: OCT: Applications and clinical use of ophthalmological surgery (1 hour).

Seminar 4: Phakic lenses update (1 hour).

Seminar 5: Corneal reconstructive surgery (1 hour).

Seminar 6: Decision algorithms in corneal refractive surgery (3 hours).

Seminar 7: CL adaptation in special postsurgical situations (1 hour)

OPTOMETRICAL PROCEDURES WORKSHOPS IN OPHTHALMOLOGICAL SURGERY.

Workshop 1: Eye geometric patterns, definition of axes and cardinal points.

Workshop 2: Asphericity, misalignment and wavefront aberrations in eye geometrical pattern.

Workshop 3: Intraocular lenses calculation.

Workshop 4: Pre- and post-surgical visual function evaluation (VA determination, contrast sensitivity, halometry, clinical aberrometry, stereopsis, pupillometry). Surveys on visual function and quality of life.

Workshop 5: Ocular Surface evaluation. Clinical and instrumental techniques.

Workshop 6: Optometric management of toricity

Workshop 7: Decision algorithms in corneal and lens refractive surgery. Clinical cases.

Workshop 8: fluidics and surgical application in phacoemulsification cataract surgery.

Workshop 9: Clinical cases.

Workshop10: Workshop contents evaluation.

HOSPITAL PRACTICE OF OPTOMETRIC PROCEDURES IN OPHTHALMOLOGICAL SURGERY

They will be carried out in the Miguel Servet University Hospital and Lozano Blesa University Hospital.

4.4.Course planning and calendar

Calendar of presential sessions and work submission

Academic Calendar of the subject:

In the subject's presentation, a calendar with the subject's training activities will be provided, as well as the setting of groups adjusted to the schedule arranged by the degree coordinator. This calendar will be available for students on Moddle 2 (ADD).

4.5.Bibliography and recommended resources

- BB** Atlas de oftalmología clínica / editado por David J. Spalton, Roger A. Hitchings, Paul A. Hunter ; [revisión, Miguel Ángel] 3ª ed. Madrid [etc.] : Elsevier, cop. 2006
- BB** Duane, Thomas D.. Duane's Ophthalmology on CD-ROM [recurso electrónico] / edited by William Tasman and Edward A. Jaeger. [Philadelphia] : Lippincott Williams & Wilkins, cop. 2006
- BB** García Feijóo, Julián. Manual de oftalmología / Julián García-Feijóo, Luis E. Pablo-Júlvez ; [colaboradores, Emilio A. et al.] Barcelona : Elsevier, D.L. 2012
- BB** Kanski, Jack J.. Oftalmología clínica / Jack J. Kanski ; fotografías, Irina Gout, Kulwant Sehmi, Anne Bolton ; ilustrado por Phil Sidaway ; [revisión científica, Juan Antonio Durán de la Colina] . - 6ª ed. Amsterdam ; Barcelona ; Madrid [etc.] : Elsevier, cop. 2008
- BB** The Wills Eye Hospital atlas of clinical ophthalmology / edited by William Tasman, Edward A. Jaeger. - 2nd ed. Philadelphia : Lippincott Williams & Wilkins, cop. 2001