

Course guide

370021 - PROCEDAVAN - Advanced Clinical Procedures

Last modified: 04/07/2025

Unit in charge: Terrassa School of Optics and Optometry
Teaching unit: 731 - OO - Department of Optics and Optometry.

Degree: BACHELOR'S DEGREE IN OPTICS AND OPTOMETRY (Syllabus 2020). (Compulsory subject).

Academic year: 2025 **ECTS Credits:** 3.0 **Languages:** Catalan, Spanish, English

LECTURER

Coordinating lecturer: Clavé Cerezo, Laura <https://futur.upc.edu/LauraClaveCerezo>

Others: Clavé Cerezo, Laura <https://futur.upc.edu/LauraClaveCerezo>
Ordíñaga Monreal, Enrique Pascual <https://futur.upc.edu/EnriquePascualOrdinagaMonreal>

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CE18. Describe and apply the procedures and indications of clinical examination methods and complementary diagnostic techniques. Demonstrate knowledge of current eye surgery techniques and develop the capacity to carry out eye tests, including during pre- and postoperative examinations. Identify and apply new technologies in the field of optometric clinical practice.

CE20. Measure, interpret and treat refractive errors. Describe the sensory and oculomotor mechanisms of binocular vision. Identify the principles of and measure, interpret and treat accommodative and binocular vision anomalies. Demonstrate skills in communication, recording data and writing clinical histories. Demonstrate skills in the interpretation and clinical judgement of results of vision tests, to establish the most suitable diagnosis and treatment. Demonstrate skills in instrumental assessment tests of visual function and eye health. Carry out a complete medical history. Identify, apply and interpret instrumental tests relating to visual health problems. Demonstrate the clinical skills required for the examination and treatment of patients. Examine, diagnose and treat visual anomalies with an emphasis on differential diagnosis. Describe the nature and organisation of types of clinical care. Describe the protocols that are applied to patients.

Generical:

CG4. Critically reflect on the clinical, scientific, ethical and social issues involved in the professional practice of optometry, understand the scientific foundations of optics and optometry and critically evaluate terminology, clinical trials and research methods related to optics and optometry.

CG5. Give opinions and produce reports and expert reports when necessary.

CG6. Assess and incorporate the technological improvements necessary to properly carry out professional activities.

CG8. Plan and carry out research projects that contribute to the production of knowledge in the field of optometry and disseminate this scientific knowledge via the typical communication channels.

CG9. Expand and update one's professional abilities through continuing education.

CG14. Demonstrate knowledge, skills and abilities in patient healthcare.

CG16. Participate effectively in both single-discipline and multidisciplinary work groups on projects related to optometry.

Transversal:

CT7. Foreign language. Demonstrate knowledge of a foreign language, preferably English, at an oral and written level that is consistent with graduates' future needs.

TEACHING METHODOLOGY

MD1 - Participatory lecture on theory and problems

MD3 - Practical problem-solving class requiring student participation in case studies and/or exercises on topics related to the subject matter

MD4 - Laboratory practicals

MD5 - Reading of educational materials, texts and articles related to the content

LEARNING OBJECTIVES OF THE SUBJECT

5. Knowledge of current eye surgery techniques and the ability to carry out eye tests, including in pre- and postoperative examinations.

12. The ability to identify and handle situations that require referral/interprofessional collaboration.

STUDY LOAD

Type	Hours	Percentage
Self study	45,0	60.00
Hours medium group	15,0	20.00
Hours small group	15,0	20.00

Total learning time: 75 h

CONTENTS

Corneal measurements and ocular aberrometry

Description:

1. Corneal topography
 - 1.1 Corneal topography description
 - 1.2 Management of topographic information
 - 1.3 Interpretation of records
2. Ocular aberrometry
 - 1.1 Description of ocular aberrometry
 - 1.2 Management of information from the instrument
 - 1.3 Interpretation of records
- 1.1 Description of ocular aberrometry.
- 1.2 Information management instrument.
- 1.3 Interpretation of records

Full-or-part-time: 8h

Practical classes: 4h

Self study : 4h

Computerised perimetry

Description:

1. Computerised perimetry
 - 1.1 Description of the visual field
 - 1.2 Management of information from the instrument
 - 1.3 Interpretation of reports

Full-or-part-time: 8h

Practical classes: 3h

Self study : 5h

Examination of the eye fundus

Description:

1. Indirect ophthalmoscopy
 - 1.1 Biomicroscope with assessment lens
 - 1.2 Indirect ophthalmoscope
2. Optical coherence tomography (OCT)
 - 2.1 Optic nerve
 - 2.2 Retina
 - 2.3 Macular

Full-or-part-time: 12h

Practical classes: 6h

Self study : 6h

Other complementary tests

Description:

1. Contact tonometry
 - 1.1. Description of intraocular pressure
 - 1.2 Management of information from the instrument
 - 1.3 Interpretation of reports
2. Biometry
 - 1.1. Description of intraocular parameters
 - 1.2 Management of information from the instrument
 - 1.3 Interpretation of reports

Full-or-part-time: 6h

Practical classes: 2h

Self study : 4h

GRADING SYSTEM

Continuous evaluation, with the following evidence:

1. Seminars: 40%
2. Written test: 20%
3. Written test: 40%

The transversal competence is assessed with the final mark of the subject.

The competences of the European diploma are evaluated with the final mark of the course.

The student can only pass the course if he/she attends at least 80% of the lectures, 90% of the seminars and 80% of the practicals.

EXAMINATION RULES.

If copying (either partial or total) is found to have taken place on any course assessment, that which is stipulated in the Academic Regulations for Bachelor's and Master's Degrees at the UPC will apply:

"Irregular actions potentially leading to a significant variation of the marks obtained by one or more students will be considered a breach of the assessment regulations. Such behaviour will result in a descriptive mark of Fail and a numerical mark of 0 for the examination in question and for the subject, without prejudice to any disciplinary proceedings that may result from that behaviour. If students disagree with this decision, they may file a complaint with the dean or director of the school. If students are not satisfied with the response, they may lodge an appeal with the rector.

The total or partial reproduction of academic and research works, or their use for any other purpose, must have the express permission of the author or authors of the works.

The director or dean of the school makes decisions regarding allegations about any aspects not covered in the regulations."

In the event of suspending the subject, you will have the option to recover it through a reevaluation exam that will be carried out according to the general conditions established for each course by the UPC's Academic Regulations for Undergraduate and Master's Studies (NAGRAMA) and the particulars established by the FOOT with the following conditions:

1. You can only submit to the reevaluation if the overall grade obtained for the subject is equal to or higher than 3.5
2. Students with the grade Not Presented (NP) cannot take advantage of the reevaluation option.
3. The reevaluation will consist of a written exam (100%)

If the reevaluation exam is passed (with a score equal to or higher than 5) the final grade of the subject will always be 5. Otherwise, the highest grade between the previous evaluation and the reevaluation will be maintained.

The student can only pass the course if he/she attends at least 80% of the classes, 90% of the seminars and 80% of the clinical sessions.

BIBLIOGRAPHY

Basic:

- Agarwal, Amar; Henderson, Bonnie An. Dr Agarwal's textbook on corneal topography: including pentacam and anterior segment OCT [on line]. 3rd ed. New Delhi: The Health Sciences Publisher, 2015 [Consultation: 25/07/2024]. Available on: <https://search-ebscohost-com.recurtos.biblioteca.upc.edu/login.aspx?direct=true&AuthType=ip,uid&db=nlebk&AN=1234454&site=ehost-live&ebv=EB&ppid=pp> Cover. ISBN 9789351527855.

- Kanclerz, P.; Khoramnia, R.; Wang, X. "Current developments in corneal topography and tomography". Diagnostics [on line]. 2021, vol. 11, núm. 8, p. 1466 [Consultation: 10/05/2022]. Available on: <https://doi.org/10.3390/diagnostics11081466>. - Rampat, R; Malet, J; Dumas, L; Gatinel, D. "Wavefront sensing, novel lower degree/higher degree polynomial decomposition and its recent clinical applications: a review". Indian journal of ophthalmology [on line]. 2020, vol. 68, núm. 12, p. 2670-2678 [Consultation: 10/05/2022]. Available on: https://doi.org/10.4103/ijo.IJO_1760_20. - Aumann, S. [et al.]. "Optical Coherence Tomography (OCT): principle and technical realization". Aumann, S. [et al.]. High resolution imaging in microscopy and ophthalmology [on line]. Springer, 2019. p. 59-85 [Consultation: 03/12/2024]. Available on: https://link-springer-com.recurtos.biblioteca.upc.edu/chapter/10.1007/978-3-030-16638-0_3.

- Moshirfar, M. [et al.]. "Biometry in cataract surgery: a review of the current literature". Current opinion in ophthalmology. 2019, vol. 30, núm. 1, p. 9-12.

- Salmon, John F; Kanski, Jack J. Kanski's clinical ophthalmology: a systematic approach. Ninth edition. [Edinburgh]: Elsevier Limited, [2020]. ISBN 9780702077111.

- Anderson, Douglas R; Patella, Vincent Michael. Automated static perimetry. 2nd ed. St. Louis: Mosby, ccop. 1999. ISBN 0815143842.

- Özcura, F. [et al.]. "Evaluation of Goldmann applanation tonometry, rebound tonometry and dynamic contour tonometry in keratoconus". Journal of optometry [on line]. 2017, vol. 10, núm. 2, p. 117-122 [Consultation: 10/05/2022]. Available on: <https://doi.org/10.1016/j.optom.2016.04.005>.