Course guide
370805 - TECDIAG - (Ang) Tècniques Diagnòstiques en Salut Ocular

Unit in charge: Terrassa School of Optics and Optometry
Teaching unit: 731 - OO - Department of Optics and Optometry.
Degree: MASTER'S DEGREE IN OPTOMETRY AND VISION SCIENCES (Syllabus 2022). (Compulsory subject).
Academic year: 2022 ECTS Credits: 3.5 Languages: Catalan, Spanish, English

LECTURER

Coordinating lecturer: Millán García-Varela, María Sagrario. https://futur.upc.edu/MariaSagrarioMillanGarciaVarela Ondategui Parra, Juan Carlos. https://futur.upc.edu/JuanCarlosOndateguiParra

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
M-CE6. (ENG) Conocer los principios de funcionamiento de las distintas técnicas de examen en la práctica clínica: fotografía basada en la configuración Scheimpflug, topografía de discos de Plácido, Tomografía de Coherencia Óptica, aberrometría y pruebas electrofisiológicas, entre ellas. Interpretar los resultados de dichas técnicas para detectar signos de posibles patologías, aplicar tratamientos ópticos, remitir al especialista y utilizar los conocimientos en trabajos de investigación.

Transversal:
M-CT4. (ENG) Uso solvente de los recursos de información. Gestionar la adquisición, la estructuración, el análisis y la visualización de datos e información en el ámbito de especialidad y valorar de forma crítica los resultados de dicha gestión.

Basic:
CB10. (ENG) Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.

TEACHING METHODOLOGY

Participatory expository class of theoretical and practical content.
1.- Active methodologies in the classroom (project-based learning (PBL), study of cases, cooperative learning).
2.- Practical resolution class, with the participation of the students, of practical cases and/or exercises related to the contents of the subject
3.- Reading of didactic material, texts and articles related to the contents of the subject.
4.- Realization of problems, exercises, works and resolution of doubts through the Atenea virtual campus.
5.- Tutorials.

LEARNING OBJECTIVES OF THE SUBJECT

1.- Know how to apply the knowledge of optics of intraocular lenses, photic effects and designs in clinical practice for the selection of the most appropriate lens according to each patient and know how to perform the examination and follow-up of the pseudophakic patient.
2.- Know and be able to apply to the professional practice of optics and optometry the operating principles of the different examination techniques in clinical practice: photography based on the Scheimpflug configuration, Placido disc topography, optical Coherence Tomography, aberrometry and electrophysiological tests, among them.
3.- Interpret the results of the different examination techniques to detect possible signs of pathology, apply optical treatments, refer to a specialist or use the results in research work.
STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group</td>
<td>28,0</td>
<td>32.00</td>
</tr>
<tr>
<td>Self study</td>
<td>59,5</td>
<td>68.00</td>
</tr>
</tbody>
</table>

Total learning time: 87.5 h

CONTENTS

**title english**

**Description:**
1.- Calculation of Intraocular Lenses
2.- Management of Intraocular Lenses
2.1.- Design of the latest generation intraocular lenses
3.- Ocular Echography

**Full-or-part-time:** 9h 30m
Practical classes: 4h
Self study: 5h 30m

**Optical Ocular Quality**

**Description:**
1.- Eye aberrometry
2.- Eye diffraction
3.- Ocular dispersion

**Full-or-part-time:** 7h
Practical classes: 2h
Self study: 5h

**Electrophysiological tests**

**Description:**
1.- Electoretinogram
2.- Electrooculogram
3.- Evoked Visual Potentials

**Full-or-part-time:** 5h
Practical classes: 2h
Self study: 3h
### Anterior Segment Assessment Techniques

**Description:**
1. Corneal topography
2. Ocular pachymetry
3. Specular microscopy
4. OCT anterior segment

**Full-or-part-time:** 11h 30m  
Practical classes: 4h  
Self study: 7h 30m

### Techniques for evaluating the posterior segment

**Description:**
1. OCT of posterior segment
   1.1. OCT - Angio
   1.2. Autofluorescence
   1.3. Multimodal image
2. Wide field retinography

**Full-or-part-time:** 11h 30m  
Practical classes: 4h  
Self study: 7h 30m

### ACTIVITIES

**name english**

**Description:**  
Seminar on the interpretation of eye ultrasound records and calculation of intraocular lenses based on eye design and parameters.

**Full-or-part-time:** 8h 30m  
Practical classes: 6h 30m  
Self study: 2h

**name english**

**Description:**  
Seminar on the interpretation of records of aberometries in different eye conditions.

**Full-or-part-time:** 7h 30m  
Practical classes: 2h  
Self study: 5h 30m
**Name English**

**Description:**
Seminar on the interpretation of ocular topography records in different eye conditions.

**Full-or-part-time:** 13h 30m
Practical classes: 4h
Self study: 9h 30m

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**Name English**

**Description:**
Seminar on the interpretation of OCT records and retinography in different eye conditions.

**Full-or-part-time:** 13h 30m
Practical classes: 4h
Self study: 9h 30m

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**GRADING SYSTEM**

Continuous assessment, with the following evidence:
1. Biometrics Activity: 15%
2. Eye Optical Quality Activity: 15%
3. Previous Segment Activity: 15%
4. Post-Segment Activity: 15%
5. Written test: 40%

The transversal competence is evaluated with the final note of the subject.

**EXAMINATION RULES.**

In case of partial or total copying in any of the evaluations of the subject, the one provided by the General Academic Regulations of the UPC will apply:

"Irregular actions that may lead to a significant variation in the qualification of one or more students constitute a fraudulent performance of an assessment act. This action involves the descriptive qualification of suspension and a numerical 0 of the act of assessment and of the subject, without prejudice to the disciplinary process that is possible to derive as a consequence of the acts realitzats."

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It corresponds to the director or director or the degà or degana of the teaching center to resolve the allegations on the aspects not included in the regulations."

**BIBLIOGRAPHY**

**Basic:**
- Kanclerz,P.;Khorramnia,R.; Wang, X. Current Developments in Corneal Topography and Tomograp [on line]. Diagnostics, Available on: [https://doi.org/10.3390/](https://doi.org/10.3390/) diagnostics11081466Disponible a: [https://doi.org/10.3390/](https://doi.org/10.3390/) diagnostics11081466..