370525 - APLICADA - Applied Contact Lenses

Coordinating unit: 370 - FOOT - Terrassa School of Optics and Optometry
Teaching unit: 731 - OO - Department of Optics and Optometry
Academic year: 2018
Degree: BACHELOR'S DEGREE IN OPTICS AND OPTOMETRY (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits: 9
Teaching languages: Catalan

Coordinator:
Gispets Parcerisas, Joan (http://futur.upc.edu/JoanGispetsParcerisas)
Serés Revés, Carme (http://futur.upc.edu/CarmenSerésRevés)

Others:
Serés Revés, Carme (http://futur.upc.edu/CarmenSerésRevés)
Pérez Corral, Joan
Augé Serra, Montserrat (https://futur.upc.edu/MontserratAugéSerra)
Quevedo Junyent, Lluïsa (https://futur.upc.edu/MontserratAugéSerra)

Opening hours
Timetable: Students may agree with the faculty members the timetable for questions though the email that appears in the University directory (http://directori.upc.edu/directori/).

Prior skills
Materials for the manufacture of contact lenses (Optical Materials).
Optics of the eye and the contact lens (Geometric and instrumental Optics and Visual Optics).
Preliminary tests for the contact lenses fitting (Contact lens basics).
Types of hydrogel and Rigid Gas Permeable lenses (Contact lens basics).

Requirements
Only students that have already attended Contact Lens Basics will be allowed to attend the subject.

Degree competences to which the subject contributes

Specific:
1. Determined by scanning objective procedures if eye conditions are appropriate or contraindicate the use of contact lenses of any material.
2. Design and fit contact lenses for treating specific conditions such as presbyopia, aphakia in pediatric patients, non-inflammatory corneal ectasia induced and natural, corneal degenerations, and therapeutic assistance for certain corneal diseases.
3. Inform thoroughly the patient about the advantages and benefits that will have in using the recommended contact lenses, and the indications for the use of better maintenance and preservation of contact lenses.
4. Use appropriate techniques to adapt to each case and establish guidelines for tracking users of contact lenses in order to preserve the integrity and optimal adaptation of the ocular structures.

Generical:
5. - Implementation of the code of ethics and good practice of the profession
- Adapting the technological means to respond to the needs of people with disabilities.
6. - Know the influence of the visual health in the education and the global well-being (and the development)
- Know the influence of the visual health for the development
When finishing the subject of Applied CL, the student must be able to:

- Know and use clinical and instrumental protocols used in the exploration associated with the contact lens fitting procedure.
- Apply the clinical procedures associated with the contact lenses fitting for different refractive and ocular dysfunctions.
- Know the basics and prescription criteria for orthokeratology techniques.
- Detect, evaluate and solve the alterations associated with the contact lens wear.
- Know the contact lens cleaning and maintenance systems and relate them to the characteristics of each adaptation, both in terms of the replacement, use and type of contact lenses, as well as the characteristics of each wearer.

### Teaching methodology

The subject consists of 4 hours a week of classroom lessons (middle group), 13 sessions of 2 hours each of practices in the laboratory and 2 sessions of PRACTICUM.

To adequately achieve the subject objectives, the instructions and deadlines that are described through the digital campus ATENEA must be followed.

The student will perform two practical sessions at the CUV within the PRACTICUM program.

Attendance to practices is mandatory. Two unjustified or more faults imply that it can not be evaluated.

The student must attend the group of internships assigned, any group change must be agreed with the teachers of the groups affected and communicated to the coordinator.

### Learning objectives of the subject

When finishing the subject of Applied CL, the student must be able to:

- Know the fundamental values of the bioethics
- Know the model of sustainable development
- Know the environmental and social impacts of the technology
- 7. Adaptation of all the fields of professional activity envers compatible aspects with the medium ambient (recycling, reuse of the materials,...)
- 12. To think critically about clinical ethical issues, involved in the political and social exercise of optometry
- 14. Being able to collaborate on initiatives, both locally and globally, committed to improving the visual health of the population

### Study load

<table>
<thead>
<tr>
<th>Total learning time: 216h</th>
<th>Hours large group:</th>
<th>0h</th>
<th>0.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>64h</td>
<td>29.63%</td>
<td></td>
</tr>
<tr>
<td>Hours small group:</td>
<td>26h</td>
<td>12.04%</td>
<td></td>
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<tr>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>Self study:</td>
<td>126h</td>
<td>58.33%</td>
<td></td>
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### Content

#### 1. PRELIMINARY EXAMINATION IN THE ADAPTATION OF A CONTACT LENS

<table>
<thead>
<tr>
<th>Description:</th>
<th>Learning time: 43h</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Review of previous segment</td>
<td>Theory classes: 13h</td>
</tr>
<tr>
<td>1.2 Techniques of ocular examination</td>
<td>Laboratory classes: 5h</td>
</tr>
<tr>
<td>- biomicroscopy</td>
<td>Self study: 25h</td>
</tr>
<tr>
<td>- Corneal Topography</td>
<td></td>
</tr>
</tbody>
</table>

This content is worked:
Detailed explanation of the tools and methodologies used to measure ocular main parameters as a basis for future choice of contact lens that is suitable for each patient. Details of the various techniques of lighting with biomicroscopy examination and detailed analysis of topographic patterns more common.

**Related activities:**
There will be practical sessions 1 and 2, corresponding to corneal topography and lighting techniques with biomicroscopy.

#### 2. ADAPTATION OF CONTACT SPHERICAL LENSES

<table>
<thead>
<tr>
<th>Description:</th>
<th>Learning time: 87h</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Adaptation of contact lenses spherical RPG</td>
<td>Theory classes: 25h</td>
</tr>
<tr>
<td>2.2 Adaptation of spherical hydrogel contact lenses and silicone hydrogel</td>
<td>Laboratory classes: 11h</td>
</tr>
<tr>
<td></td>
<td>Self study: 51h</td>
</tr>
</tbody>
</table>

This content is worked:
The procedures used for the adaptation of contact lenses spherical materials RPG, of hydrogel and silicone hydrogel and techniques for evaluating the correctness of these adjustments, focusing, in particular, the analysis and fluoresceinograms interpretation, movement and focus of the lens.

**Related activities:**
There will be practical sessions 3 and 4, corresponding to the adaptation of contact lenses and spherical hydrogel materials RPG.
There will be a first evaluation of group practice in small laboratory.
Also there will be a first assessment of theoretical knowledge in a large group theory.
### 3. ADAPTATION OF CONTACT TORIC LENSES

**Description:**
- 3.1 Adaptation of toric contact lenses RPG
- 3.2 Adaptation to hydrogel toric contact lenses and silicone hydrogel

This content is worked:
The procedures used for the adaptation of contact lenses toric materials RPG, of hydrogel and silicone hydrogel and techniques for evaluating the correctness of these adjustments, focusing, in particular, the analysis and fluoresceïnograms interpretation, movement and focus of the lens.
We will study the various designs of toric contact lenses and hydrogel RPG to assess what design is most appropriate given the anatomical and refractive characteristics of each patient.

**Related activities:**
There will be practical sessions 5 and 6, corresponding to the adaptation of toric contact lenses and hydrogel materials RPG.

### 4. INTRODUCTION TO THE ADAPTATION OF CONTACT LENS DESIGNS SPECIALS

**Description:**
- 4.1 Therapeutic contact lenses
- 4.2 Contactology pediatric
- 4.3. Adaptation of contact lenses on corneal degenerations
- 4.4. Introduction to the adjustment of contact lenses for presbyopia.

This content is worked:
The description of special designs of contact lenses, hydrogel and RPG, used to solve special cases, namely therapeutic lenses, used in the pediatric Contactology in corneal degeneration and degeneration marginal rate queratoconus pellucida and lenses multifocal contact. This description will be accompanied by the comment of several clinical cases that serve to illustrate the problems associated with such adjustments more complex.

**Related activities:**
There will be practical sessions 7 and 8, corresponding to the adaptation of contact lenses for special designs
There will be a second evaluation of laboratory practices in small group
Also there will be a second assessment of theoretical knowledge in a large group theory.
Two written tests will be made E1 (30%) and E2 (30%)
The participation in the theory sessions (20%) will be marked
Examination in the laboratory (20%) and reports of practices will be compulsory to be eligible for examination.

-Required attendance at all activities evaluated.
-If any of the marked activities is not done, it will be considered as not rated (0).

Bibliography

Basic:

Others resources:
Lens.com (internet)
www.gpli.info/education
www.clspectrum.com