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: 2017
Degree: BACHELOR'S DEGREE IN OPTICS AND OPTOMETRY (Syllabus 2009). (Teaching unit Compulsory)
ECTS credits: 9
Teaching languages: Catalan

Teaching staff
Coordinator: MARÍA DEL CARMEN SERÉS REVÉS

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 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

Teaching methodology

The subject consists of 4 hours per week of lectures in class (large group), 11 sessions of 2 hours each of practical laboratory and two practicum sessions.
To get the most out of the subject, follow the directions and deadlines that are described through the digital campus Atenea.
The student will spend two practical sessions at the CUV

Learning objectives of the subject

At the end of the subject applied contact lenses, the student should be able to:
370525 - APLICADA - Applied Contact Lenses

- Understand the solution maintenance, diagnosis and treatment and relate them to the characteristics and ocular lens.
- Understand and use protocols used in clinical and instrumental examination associated with the adaptation of contact lenses.
- Apply the clinical procedures associated with the adaptation of contact lenses for the various refractive and ocular dysfunctions.
- Apply techniques of controlled modification of the corneal topography with the use of contact lenses.
- To detect, assess and solve disturbances associated with the use of contact lenses.
- Adapt contact lenses and ocular prostheses to improve the vision and the external appearance of the eye.

**Study load**

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

*Hours large group:* 0h  0.00%  
*Hours medium group:* 64h  29.63%  
*Hours small group:* 26h  12.04%  
*Guided activities:* 0h  0.00%  
*Self study:* 126h  58.33%
# 370525 - APLICADA - Applied Contact Lenses

## Content

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

**Description:**
- 1.1 Review of previous segment
- 1.2 Techniques of ocular examination
  - biomicroscopy
  - Corneal Topography

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.

### Learning time:
- Theory classes: 10h
- Laboratory classes: 10h
- Guided activities: 7h 30m
- Self study: 25h

### 2. ADAPTATION OF CONTACT SPHERICAL LENSES

**Description:**
- 2.1 Adaptation of contact lenses spherical RPG
- 2.2 Adaptation of spherical hydrogel contact lenses and silicone hydrogel

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 fluoresceïnogrames 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.

**Learning time:**
- Theory classes: 15h
- Laboratory classes: 15h
- Guided activities: 7h 30m
- Self study: 25h
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 fluoresceïnogrames 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.

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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.
### Planning of activities

<table>
<thead>
<tr>
<th>1. PRELIMINARY EXAMS: CORNEAL TOPOGRAPHIES AND BIOMICROSCOPY</th>
<th>Hours: 17h 30m</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Laboratory classes: 10h</td>
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<tr>
<td></td>
<td>Guided activities: 7h 30m</td>
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</table>

**Description:**
Practices 1, 2 and 3

Working in pairs lab Contactology with duration of 2 hours per practice. Students, as part of their learning has led to the prior reading practice and identify the objectives of it. The laboratory has carried out the experimental

**Support materials:**
All materials and instruments for conducting practice
Written detailed questionnaire for each practice

**Descriptions of the assignments due and their relation to the assessment:**
The evaluation of the practice is done with the script for the evaluation of the practice, given that the student, and individual events.

**Specific objectives:**
At the end of practice the student or student should be able to:
- To analyze the different topographic maps with the topography of the provisions in the laboratory
- Being able to accurately perform the various techniques of lighting the eye biomicroscopy in order to recognize any alteration of the anterior segment of the eye.

<table>
<thead>
<tr>
<th>2. ADAPTATION OF CONTACT LENS MATERIALS SPHERICAL HYDROGEL AND RPG</th>
<th>Hours: 20h</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Laboratory classes: 12h 30m</td>
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<tr>
<td></td>
<td>Guided activities: 7h 30m</td>
</tr>
</tbody>
</table>

**Description:**
Practices 4 a 8

Working in groups of 2 students. The duration is 2 hours for each practice. The completion of the laboratory practices will Contactology. The laboratory should carry out the experimental part, and as directed learning is planned that students do after reading the script and identify targets.

**Support materials:**
All materials for the realization of practical
Written detailed questionnaire for each practice

**Descriptions of the assignments due and their relation to the assessment:**
The evaluation of the practice is done with the script for the evaluation of the practice, given that the student, and individual events.

**Specific objectives:**
At the end of the activity, the student or student should be able to:
- Knowing, through fluocesineograms and dynamic behavior of the contact lens when the adaptation of RPG and hydrogel contact lenses on a spherical cornea spherical and moderately O-ring in the case of RPG, is correct.

<table>
<thead>
<tr>
<th>3. ADAPTATION OF CONTACT LENS MATERIALS TORIC RPG AND HYDROGEL</th>
<th>Hours: 17h 30m</th>
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<tbody>
<tr>
<td></td>
<td>Laboratory classes: 10h</td>
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<tr>
<td></td>
<td>Guided activities: 7h 30m</td>
</tr>
</tbody>
</table>
### 4. INTRODUCTION TO THE ADAPTATION OF CONTACT LENS DESIGNS SPECIALS

**Description:**
Practices 9 to 15

Working in groups of 2 students. The duration is 2 hours for each practice. The completion of the laboratory practices will Contactology. The laboratory should carry out the experimental part, and as directed learning is planned that students do after reading the script and identify targets.

**Support materials:**
- All instruments for the realization of practical
- Contact lenses of different materials
- Written detailed questionnaire

**Descriptions of the assignments due and their relation to the assessment:**
The evaluation of the practice is done with the script for the evaluation of the practice, given that the student, and individual events.

**Specific objectives:**
At the end of the activity, the student or student should be able to:
- Knowing how to select the most suitable lens, both as regards the design and the material is present when a high astigmatism eye.
- Identify correctly when a slow, either RPG or hydrogel material is well adapted.

<table>
<thead>
<tr>
<th>Description:</th>
<th>Hours: 17h 30m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practices 9 to 15</td>
<td>Laboratory classes: 10h</td>
</tr>
<tr>
<td>Working in groups of 2 students</td>
<td>Guided activities: 7h 30m</td>
</tr>
</tbody>
</table>

### 5. EVALUATION INDIVIDUAL TEST OF PRACTIC KNOWLEDGES

**Description:**
Single laboratory test

Resolution of issues and demonstration of clinical skills and practices learned in the laboratory

<table>
<thead>
<tr>
<th>Description:</th>
<th>Hours: 5h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single laboratory test</td>
<td>Laboratory classes: 5h</td>
</tr>
</tbody>
</table>
6. EVALUATION OF INDIVIDUAL TESTS
THEORETICAL KNOWLEDGE

<table>
<thead>
<tr>
<th>Hours: 5h</th>
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</thead>
<tbody>
<tr>
<td>Theory classes: 5h</td>
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</table>

**Description:**
Individual test in the classroom
Production of two years related to the contents of the blocks comprising the subject of theoretical

**Support materials:**
Educational material uploaded to ATENEA

**Descriptions of the assignments due and their relation to the assessment:**
Each of these two tests comprise 40% of the final grade for the course

**Specific objectives:**
After the test, the student or student should be able to:
Be aware of your skills and theoretical knowledge gaps related to the subject and, if necessary, be interested to remedy these shortcomings.

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**Qualification system**

There will be two written tests E1 and E2 (80%)
E1 Written exam (30%)
E2 Written exam (40%)
There will be one lab tests L1 (20%)
Test laboratory L1 (10%)
L2 laboratory test (10%)
Two individual test in class A1+A2 (10%)
Individual A1 (5%)
Individual A2 (5%)

Final Mark = E1 + E2 + A1 + A2 + L1 + L2

**Regulations for carrying out activities**

- Required attendance at all activities evaluated.
- If not done any of the activities evaluated, is considered as not rated (0).
370525 - APLICADA - Applied Contact Lenses

Bibliography

Basic:


Others resources: