

26806 - Optical Technology I

Syllabus Information

Academic Year: 2018/19

Subject: 26806 - Optical Technology I

Faculty / School: 100 - Facultad de Ciencias

Degree: 297 - Degree in Optics and Optometry

ECTS: 6.0

Year: 1

Semester: Second semester

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 that is designed for this subject is based on the following:

- Lectures in large group
- Individual practices
- Individual self-assessment work through the ADD
- Individual tutorials
- Rotating small groups to arrange the workshop

4.2. Learning tasks

1. Basic understanding of lenses and frames. (1 ECTS)

participatory lectures in large group.

individual tutorials

Individual laboratory practices.

2. Refractive no characterization of ophthalmic lenses. (0.2 ECTS)

Laboratory practices in small groups.

3. Lens mounting in full ring frames (2.5 ECTS)

Peer learning.

Laboratory practices in large group.

4. Tidying and inventory carrying tooling workshop (0.1 ECTS).

Laboratory practices in large group.

Rotating small group practices

5. Refractive characterization of ophthalmic lenses (1.2 ECTS)

Performing self-assessment exercises via ADD.

Individual laboratory practices.

6. Market introduction of ophthalmic lenses and management books rates (1 ECTS)

Performing self-assessment exercises via ADD.

Creation and resolution of possible test questions.

Laboratory practices in large group.

4.3.Syllabus

Theoretical contents:

1. Classification of ophthalmic lenses.
2. Properties ophthalmic glass.
3. Spherical lenses, aspherical and astigmatic.
4. Manufacture of lenses.
5. Manufacture of frames.
6. Fundamentals of adaptation of glasses.

PRACTICES:

Practice I: Inventory. Identification of positive and negative lenses. Identification of materials and treatments. Introduction to management lensometry. Spherical lenses.

Practice II: Introduction to management lensometry: spherical and astigmatic lenses, lens marking, measurement of lenses mounted on glasses. Adjusting frames interpupillary distances and nasopupulares height.

Practice III: Review lensometry management: spherical and astigmatic lenses. Sphero calculation. Spherometer. Boxing system.

Practice IV: Review lensometry management: astigmatic lenses, lens marking, measurement of lenses mounted on glasses. Lens manual retouching. Management fees.

Practice V: Control practice. Lensometry management: power determination and marking. Identification of lenses. Management fees. Introduction to automatic centering and chamfering.

Practice VI: Assembly glasses with parallel metal bezel front face. Management fees: Introduction to supplements.

Practice VII: Mounting glasses with bevel parallel to the outer face and proporcional. Catalog and fees management.

Practice VIII: Mounting glasses: pasta and metal. Bisel manual glasses curvadas. Catalog and fees management.

Practice IX: Exam. Mounting bezel bezel flat and pointed manual retouching. Catalog and fees management.

Practice X: How to choose the mount. Different mounting bezels: percentage, parallel to face external and manual. Catalog and fees management.

Practice XI: Mounting different bevels: percentage, parallel to face external and manual. Catalog and fees management.

Practice XII: Exam.

4.4. Course planning and calendar

Schedule sessions and presentation of works

1.2 ECTS. The theoretical part consists of 12 one-hour lectures distributed during the first weeks of the second quarter. The calendar of classroom sessions is set by the Faculty of Science.

4.8 ECTS. The practical part in the laboratory workshop is divided into 12 sessions of four hours per week in the second quarter. Each practice has associated assessment work in the environment of ADD that students must perform before the next session in the laboratory.

The date of realization of each of the lab sessions will be published at the beginning of the school year by the Grade Coordinator and can be consulted by enrolled students in the web of the subject.

4.5. Bibliography and recommended resources

- BB** Borish's clinical refraction / editor, William J. Benjamin ; consultant, Irvin M. Borish. - 2nd ed. St. Louis : Butterworth I cop. 2006
- BB** Brooks, Clifford W.. Essentials of ophthalmic lens finishing / Clifford W. Brooks . - 2nd ed. St. Louis, Missouri : Butter cop. 2003
- BB** Brooks, Clifford W.. System for ophthalmic dispensing / Clifford W. Brooks, Irvin M. Borish . - 3rd ed. St. Louis : Butte cop. 2007
- BB** Jalie, Mo. Ophthalmic lenses & dispensing / Mo Jalie. - 2nd ed. Edinburgh : Butterworth-Heinemann, 2003
- BB** Montés-Micó, Robert. Optometría : principios básicos y aplicación clínica / Robert Montés-Micó Barcelona : Elsevier
- BB** Tecnología óptica : lentes oftálmicas, diseño y adaptación / Jesús Caum Aregay ... [et al.] . - 1ª ed. Politecnos Barce 2001