



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Optics of The General Contactology 1

2526-2-E3002Q020M

Aims

The aims fall within the area of "Professional training" and refer to the following Dublin Descriptors:

1 – Knowledge and understanding

- Provide knowledge and skills to independently manage the application of soft contact lenses

2 – Applying knowledge and understanding

- Develop the ability to use techniques for fitting and monitoring contact lenses
- Provide scientific and technical knowledge in the field of contact lenses for both clinical use and interpretative application of basic and advanced instrumental technologies

3 – Making judgements

- Develop the ability to reflect independently on the course content

4 – Communication skills

- Acquire communication skills related to the course content

5 – Learning skills

- Develop the ability to reflect independently on the course content in order to acquire learning skills with a view to future developments in the field

Contents

1. management of refractive conditions with soft contact lenses
2. knowledge concerning the geometric, physical and physiological relationship between contact lenses and anterior ocular external segment
3. knowledge of the various types of soft contact lenses and related materials
4. application methods of soft contact lenses after selection of the candidate and accurate ocular, parametric and physiological evaluation
5. in-depth study of the tear film and its relationship with contact lenses, study of the marginal dry eye
6. application criteria of spherical, aspherical, toric, multifocal, and special applications
7. to prevent and manage complications induced by soft contact lenses , also through the use of grading scales
8. presentation and discussion in the classroom of clinical cases
9. Managment of myopia progression

Detailed program

Introduction to contact lenses , glossary of technical terms

Basic topics:

History and evolution of contact lenses.

Elements of anatomy and physiology of the cornea and of the structures related to it. Overview of morphology and microscopy electronics of the cornea and conjunctiva.

Corneal oxygenation and hypoxic phenomena. Overview of immunology and inflammatory processes.

Geometric features of contact lenses, contact lens optics.

Preliminaries

Initial evaluation. The anamnestic interview. Pre-application assessment: General indications for the use of contact lenses. Preliminary measurements, evaluation of refractive status, evaluation of binocular vision, examination in slit lamp, vital dyes. Clinical significance and evaluation of the tear film. Interaction between tear film and contact lens. Eyelid and blinking abnormalities, anomalies of the mucinous component and of the lipid component of the tear film. Interpretation of the interference figures of the tear film.

Advanced instrumental techniques for the detection of ocular characteristics

Corneal topography

pachymetry

Endothelial microscopy

Aberrometry and wave front analysis

Contact lenses in hydrogel

Conventional hydrogel materials, silicone hydrogel materials

Application aspects of soft contact lenses: properties of materials, classification, indications for the use of lenses soft, basic ocular assessments and measurements, application procedures, features and application evaluations, times of wear and adaptation. Post application controls.

Study of soft contact lenses customized, disposable and frequently replaced in hydrogel.

Silicon Hidrogele contact lenses

Structure and properties of materials. Lenses for continuous and prolonged use. Physiological considerations and application criteria.

Soft biomimetic and biocompatible contact lenses

Structure and properties of materials. Physiological considerations and application criteria

Correction of astigmatism with soft toric contact lenses.

Properties of materials. Indications for the use of toric contact lenses Stabilization systems. Toric lenses customized

Correction of presbyopia with soft contact lenses

Structure and properties of materials. Preliminary evaluation and selection of the bearer. Corrective options of the presbyopia with contact lenses. Bifocal and multifocal soft contact lenses and their geometries.

Complications in relation to the use of soft contact lenses

classification and management of complications, classification systems, grading scales. Compliance and prevention of complications. Digital acquisition systems

Dry eye

Classification systems of dry eye. The optometric management of the marginal dry eye. Objective and subjective evaluations of the marginal dry eye condition. Management of the condition: suitable polymers, tear supplements and substitutes.

Management of myopic progression with soft bifocal, multifocal and EDOF contact lenses

Prerequisites

ocular anatomy and physiology of the anterior segment, visual optics and geometrical optics.

since the course runs in parallelism with the laboratory of contact lenses, the student will apply knowledge and skills belonging to both the courses.

Teaching form

42 hours of in-person lectures

Textbook and teaching resource

Clinical Contact Lens Practice , Bennet, Lippincott Williams&Wilkins

Contact Lenses, Phillips, , Butterworth Heinemann

lecturer's notes

Semester

first semester

Assessment method

Joint examination of modules 1 and 2.

Written exam using a computer platform composed of multiple choice questions and exercises related to the application and choice of contact lenses

Mandatory oral exam after passing the written test

there are no mid-term exam

Office hours

by appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING
