UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# SYLLABUS DEL CORSO

# History and Techniques of Contemporary Optometry

**2425-1-F1702Q002**

## Aims

? Provide knowledge and skills on the historical evolution and operating principles of contemporary optometric investigation techniques
? Develop skills in using advanced instruments and technologies in the field of optometry and develop the ability to critically analyze collected data
? Develop the ability to produce, collect, organize, analyze, and critically interpret scientific literature
? Develop the ability to employ a clinical optometric approach based on scientific evidence
? Develop the ability to communicate and actively participate in group work

## Contents

The course will cover:
? The historical evolution, operating principles, and use of some contemporary and advanced optometric investigation techniques
? The production and analysis of the scientific literature with specific activities concerning contemporary and advanced optometric investigation techniques
? The planning and design of optometric clinical studies.
Further details are provided in the extended program.

## Detailed program

1. HISTORICAL EVOLUTION, OPERATING PRINCIPLES, AND USE OF THE FOLLOWING OPTOMETRIC INVESTIGATION TECHNIQUES
   ? Optical coherence tomography

? Ocular biometry
? Ocular aberrometry
? Tear film analysis

2. SCIENTIFIC LITERATURE
   ? types of scientific articles
   ? search and retrieval of the current literature
   ? citations and plagiarism detection
   ? new approaches based on artificial intelligence
   ? how to read, to write, and to peer-review a scientific paper

3. REVIEW OF THE SCIENTIFIC LITERATURE ON SPECIFIC TOPICS
   The students will be divided into groups and will be asked to write, based on the contents of point 2, a short scientific article on a topic assigned to them by the lecturers concerning specific applications of the optometric investigation techniques listed in point 1. Each group will receive written comments (review) on the paper from the lecturers. Based on these comments, each student will need to revise individually his/her own article and provide written responses to the review comments. The revised written article and the responses will be sent to the lecturers at least three weeks before the date of the exam and will be presented and discussed individually during the final exam.

4. CLINICAL STUDY
   ? Clinical study designs
   ? sources of bias in research designs
   ? evidence-based practice

## Prerequisites

Basic knowledge of software for writing (e.g., Microsoft Office, downloadable at this link: https://en.unimib.it/services/utilities/service-desk/campus-software) and browsers (e.g., Google Chrome).

## Teaching form

The lectures are delivered in English.
The course includes:
? 14 hours of in-person lectures (videorecorded and made available on the course's e-learning platform)
? 7 hours of asynchronous online lectures
? 14 hours of asynchronous interactive online activities
? 6 hours of asynchronous interactive online activities in preparation for laboratory activities
? 6 hours of interactive in-person laboratory activities

## Textbook and teaching resource

- notes on the e-learning page provided by the lecturers
- papers taken from the scientific literature
- slides of the lectures

- videorecordings of the lectures

## Semester

first semester

## Assessment method

***Assessment overview***
The assessment consists of three components:

1. **Submission of a written assay**: At least three weeks before the exam date, students must submit both the revised scientific article (individually revised according to the lecturer’s comments) and point-by-point responses to the lecturer’s comments. (Refer to the "Detailed Program" section for further details.)
2. **Oral discussion**: An oral discussion on the revised scientific article will verify the student's ability to produce, collect, organize, analyze, and critically interpret scientific literature.
3. **Written examination**: A set of 30 written questions (with closed answers) based on the course syllabus will comprehensively assess the student’s preparation on the course content.

***Evaluation criteria***
**Components 1 and 2**: These components will be assessed with a single grade, expressed out of thirty (the "article" grade), obtained by summing the following scores:

- *Clarity and precision*: **0 to 4 points** for whether the scientific article is written clearly and understandably, with ideas expressed precisely and unambiguously.
- *Structure and completeness*: **0 to 4 points** for whether the article is well-structured and includes all necessary sections (introduction, methodology, results, discussion, and conclusions).
- *Conclusion validity*: **0 to 4 points** for whether the conclusions are justified without errors or biases.
- *Figures and tables*: **0 to 3 points** for whether the figures and tables are clear and contribute to the understanding of the text.
- *Style and formatting*: **0 to 2 points** for whether the style and formatting of the article are appropriate and in agreement with the “Guidelines to Authors” provided.
- *Oral knowledge demonstration*: **0 to 8 points** for whether the candidate demonstrates knowledge of the topics covered in the written article during the oral discussion.
- *Oral presentation clarity*: **0 to 5 points** for whether the candidate can present the content of the article clearly during the oral discussion.

**Component 3**: This component will be assessed with a grade (the "test" grade) expressed out of thirty. The grade corresponds to the number of correct answers in a 30-question test.

**Final Grade**: The exam is considered passed if both the "article" and "test" grades are equal to or greater than 18 out of 30. In this case, the final grade will be the average of the two grades ("article" and "test"), rounded to the nearest integer.

## Office hours

by appointment arranged by email

## Sustainable Development Goals

GOOD HEALTH AND WELL-BEING