UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Optometric Investigative Techniques - I

2425-1-F1702Q001

Aims

General aims of the module
To refine the student's theoretical understanding of clinical refraction, binocular vision assessment, visual functionality and primary vision care. To improve clinical decision making in providing evidence based optometric intervention from optical devices to visual training. To allow students to interact with other professionals in the field of vision sciences and being capable to describe a clinical case in scientific contexts.

Specific learning outcomes (LO)
By the end of the module, a successful student will gain:
-LO1: theoretical knowledge about the main objective and subjective techniques of ocular refraction and the relationship between ocular refraction and binocular vision
-LO2: practical skills to perform objective and subjective refractive techniques as well as binocular vision assessment.
-LO3: practical skills to perform a comprehensive visual assessment and determine the effect of optical correction on visual functioning
-LO4: theoretical knowledge about the principle of primary vision care and the ability to perform a basic assessment of primary vision care
-LO5: knowledge on how to write an optometric case report according the internation standard

Contents

The module will cover principles of ocular refraction and optical correction, visual function assessment, and primary vision care.

Detailed program

1. Diagnostic drugs
2. Cyclopegic vs non cyclopegic refraction
3. Objective Refraction: Retinoscopy, autorefractometry, wavefront refraction
4. Subjective Refraction
5. Binocularity, accommodation and refraction
6. Visual Psychophysics: visual acuity, contrast sensitivity, color vision assessment
7. Anterior chamber angle assessment
8. Tonometry
9. General Fundus Examination (Direct/Indirect Ophthalmoscopy)
10. The pupil and pupillary reflexes: from neurophysiology to clinical appraisal
11. Perimetry in clinical practice
12. Optometric Case Studies. How to write a clinical case

Prerequisites

See curricular prerequisites for the admission Master’s Degree Program

Teaching form

Learning objectives will be pursued through different teaching methods:

• Online non-interactive asynchronous lectures (14 hours on topics 1-11)
• Online interactive synchronous lectures (7 hours on all topics)
• In person Labs/clinics’s topics (12 hours on topics n. 3, 4, 5, 6, 7, 8, 9, 11, 12)
• Online tutoring
• Student-managed learning

Textbook and teaching resource

- Slides of the lectures
- Scientific papers suggested by the lecturers
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- List of additional reference books for exam preparation
  -Benjamin, W. J. (2006). Borish's Clinical Refraction-E-Book: Borish's Clinical Refraction-E-Book. Elsevier Health Sciences.
  -Elliott DB. (2013). Clinical Procedures in Primary Eye Care E-Book. Elsevier Health Sciences. -Zeri F,
  -Eperjesi F, Bartlett H, Dunne MC. (2007). Ophthalmic Clinical Procedures: A Multimedia Guide. Elsevier Health Sciences.
  -Hopkins, G., & Pearson, R. M. (2006). E-Book Ophthalmic Drugs: Diagnostic and Therapeutic Uses. Elsevier Health Sciences.

-Rosenfield, M., & Logan, N. (2009). Optometry: science, techniques and clinical management. Elsevier Health Sciences.
-Scheiman M, Wick B. (2008). Clinical management of binocular vision: heterophoric, accommodative, and eye movement disorders. Lippincott Williams & Wilkins

Semester

First Semester

Assessment method

Student Assessment is based on four tasks:
• Short Essay
• Group work
• Final written assessment
• Final oral assessment

The Short Essay is a 1000-word individual report on a clinical case, previously seen in the labs. It aims to verify the student's achievement of LO5. In the Essay, the student must describe the clinical case chosen according to the international guidelines.
It must be delivered within the term of the module and worth 16.7% of the unit mark maximum (5 out of 30).
The marks will be allocated according to the following marking scheme:
2 out of 30: The report is written according to the CARE guidelines (for Case Reports)
2 out of 30: report demonstrates understanding and grasp of the material involved.
1 out of 30: Correct use of the international standard of units (SI units)

The Group Work (GW) is a formal collaborative group activity of a few students (max 5) carried out during the semester to arrange a scientific presentation. This summative activity is based on a review of a specific scientific theme assigned by the lecturers. GW assessment aims to verify the student's achievement of LO2.
Each group has to arrange a scientific presentation (in power point) of 10 minutes on the theme. The GW will be assessed according to the marking scheme provided to the students.
All group members must participate in the exposition, with each student presenting at least one slide. The group will receive a collective mark for the presentation, with all contributing members receiving the same grade. The presentation must be delivered within the term of the module (time slot will be scheduled at the beginning of the semester) and worth 10% of the unit mark maximum (4 out of 30).

The Final written examination is based on 20 Multiple choice questions and one open question which investigates the theoretical knowledge learning that concerns LO1 and LO3.
This assessment is delivered at the end of the module and is worth 40% of the unit mark maximum (12 out of 30).

The Final oral examination is based on oral open questions that investigate the ability to describe practical procedures concerning with of LO2, LO3, and LO4.
This assessment is delivered at the end of the module and is worth 30% of the unit mark maximum (9 out of 30).

The final grade will be represented by the sum of the marks achieved in the single 4 tasks. The minimum mark to pass is 18 out of 30.

Office hours

By appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION