

## Visual training for oculomotor, accommodative and binocular dysfunctions Cód. A07

### **DIRECTION:**

Rafaela Garrido Mercado.

### **SCHOOL IN WHICH THE COURSE ENTERS:**

School of Health.

### **COURSE TIMETABLE:**

9:00 to 14:00 hours, Monday to Friday.

### **NUMBER OF STUDENTS:**

20.

### **STUDENT PROFILE:**

Opticians and Opticians-Optometrists. Students in the last two years of the Bachelor's Degree in Optics and Optometry.

### **OBJECTIVES:**

- To analyse optometric data and make clinical diagnosis.
- Acquire knowledge about the theoretical foundation and procedures of oculomotor, accommodative and vergences vision training.
- Design of vision therapy programs.
- To learn about the relationship between learning difficulties, visual dysfunctions, and visual information processing dysfunctions.

### **SYLLABUS:**

- **Diagnostic criteria for accommodative, oculomotor and non-strabismic binocular dysfunctions.**
  - Review of optometric tests to evaluate oculomotor skills, accommodation, and binocular vision.
  - Basic neurological concepts about visual function.
  - Signs and symptoms of visual dysfunctions.
  - Diagnostic criteria for different conditions and differential diagnosis.
  - Treatment options for visual dysfunctions (lenses, prisms, additions, vision therapy).
  - Clinical reports.
- **Concepts in vision therapy.**
  - General concepts in vision therapy.

- Feedback mechanisms used in vision therapy.
- Concepts of visual hygiene.
- Scientific evidence in vision therapy. Results of clinical studies.
- **Accommodative vision therapy procedures.**
  - General concepts and feedback in visual accommodation therapy: SILO effect, procedures to increase and decrease demand, etc.
  - Vision therapy procedures for accommodation: bull's eye, bifocal rock, near/far monocular rock, minus lens monocular rock, near lens rock, mental minus, etc.
- **Vergences therapy procedures.**
  - General concepts and feedback in binocular vision therapy.
  - Procedures to increase and decrease the demand for binocular vision.
  - Vergence vision therapy procedures: Brock string, vectograms, anaglyphs, aperture rule, free space fusion cards, computer vergences, etc.
  - Anti-suppression procedures.
  - Virtual reality procedures.
- **Vision therapy program design.**
  - Design of vision therapy programs for the treatment of different dysfunctions of the accommodative and binocular system.
- **Oculomotor vision training.**
  - Oculomotor evaluation related to reading: DEM test, visagraph.
  - General concepts and feedback in oculomotor vision training.
  - Procedures to increase and decrease demand in oculomotor training.
  - Oculomotor Vision Therapy Procedures:
    - Procedures for training fixation and pursuits: fixations targets, rotator, pursuits with string, Marsden ball, etc.
    - Procedures for training saccadic movements: Hart chart saccades, near saccades, 4 chart drill, etc.
    - Computer pursuits and saccades procedures.
    - Peripheral vision procedures.
  - Design of vision training programs for oculomotor dysfunctions.
- **Vision & learning.**
  - Relationship of oculomotor, accommodative and binocular dysfunctions with reading, attention, and learning.
  - Relationship of visual information processing dysfunctions to learning.
  - Evaluation of visual information processing.
  - Procedures for training visuoperceptive skills.

**PRACTICE-BASED ACTIVITIES:**

- Clinical case studies.
- Practice of accommodation procedures.
- Practice of vergence procedures.
- Practice of oculomotor procedures.

- Practice of visual information processing procedures.
- Design of vision therapy programs.

**FACULTY:**

- Rafaela Garrido Mercado, UCM.
- María García Montero, UCM.
- Belen Llorens Casado, UCM.
- Aiga Svede, Universidad de Letonia.
- Paolo Tacconella, Universidad de Turín.