

Course guide

370802 - OPTINF - (Ang) Optometria Infantil

Last modified: 11/07/2023

Unit in charge: Terrassa School of Optics and Optometry
Teaching unit: 731 - OO - Department of Optics and Optometry.

Degree: MASTER'S DEGREE IN OPTOMETRY AND VISION SCIENCES (Syllabus 2022). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 3.5 **Languages:** Spanish

LECTURER

Coordinating lecturer: Valdeflors Viñuela Navarro - <https://futur.upc.edu/ValdeflorsVinuelaNavarro>
Núria Argemí Barella - <https://directori.upc.edu/directori/dadesPersona.jsp?id=1232280>

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Transversal:

M-CT1. (ENG) Emprendimiento e innovación. Conocer y entender los mecanismos en que se basa la investigación científica, así como los mecanismos e instrumentos de transferencia de resultados entre los diferentes agentes socioeconómicos implicados en los procesos de I+D+i. Conocer y entender la organización de una empresa y las ciencias que rigen su actividad; tener capacidad para entender las normas laborales y las relaciones entre la planificación, las estrategias industriales y comerciales, la calidad y el beneficio.

Basic:

CB10. (ENG) Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.

TEACHING METHODOLOGY

Paediatric Optometry is an eminently theoretical module, it is the foundation of the Paediatric Optometry Clinic that consists of clinical practice with real patients in the CUV the following term.

For this reason, the module must provide not only knowledge related visual conditions in the pediatric population, but also evaluation tools, formulation of hypotheses on diagnosis and critical appraisal to guide interventions, often interdisciplinary.

With this objective, the teaching and learning methods chosen for the classroom are:

LECTURES: delivered by the lectures related to theoretical and practical contents with the participation of the students.

FLIPPED CLASSROOM: AUTONOMOUS LEARNING prior to each topic: Reading didactic material, texts and scientific articles related to the contents presented and discussed in each session. This methodology will be applied to the current issues and hot topics, in which the search and analysis of bibliographic references will be an important part of the knowledge (EBP: EVIDENCE BASED PRACTICE).

ACTIVE METHODOLOGY IN THE CLASSROOM: project-based learning (PBL), case studies, in cooperative learning format.

STUDENT SUPPORT ACTIVITIES:

- . Solving exercises and resolution of doubts/questions through the online virtual environment campus Atenea.
- . Tutorials, face-to-face or online.



LEARNING OBJECTIVES OF THE SUBJECT

- Develop a professional and evidence based approach to the assessment of visual function and binocular vision in paediatric patients.
- Develop the ability to take an appropriate history and symptoms and communicate effectively with children and their families.
- Acquire advanced knowledge to perform a range of techniques to measure visual function and refractive error in patients children, and demonstrate the theoretical knowledge supporting these techniques.
- Acquire the knowledge to perform core and advanced techniques to assess binocular vision, to enable assessment of eye alignment, eye movements, sensory function and stereopsis, ocular motor balance, and accommodation in the paediatric population.
- Recognise normal and abnormal findings of visual function, refractive error and binocular vision in children and make an appropriate management plan.
- Develop contemporary and evidence base knowledge in the field of infantile myopia and myopia control.

STUDY LOAD

Type	Hours	Percentage
Self study	59,5	68.00
Hours medium group	28,0	32.00

Total learning time: 87.5 h

CONTENTS

Visual and ocular development in childhood

Description:

1. Ocular and visual development in childhood:

- a) Ocular development including structural changes in the eye and retina.
- b) Visual development from infancy to school age, including development of visual acuity, refractive error, accommodation, color vision, and eye movements.

Full-or-part-time: 6h

Practical classes: 2h

Self study : 4h



Visual examination in the child population

Description:

1. Evaluation of visual function and binocular function in children.
 - a) Methods, tests, tests and techniques for the evaluation of the different aspects of visual and binocular function in children of different ages
 - b) Considerations of the advantages and disadvantages of each method and their application in clinical practice.
 - c) Differential diagnosis of visual problems related to reduced visual and binocular function in children.
2. Evaluation and differential diagnosis of refractive error
 - a) Methods, tests, tests and techniques for assessing refractive error in children of different ages
 - b) Considerations of the advantages and disadvantages of each method and their application in clinical practice.
 - c) Management of refractive error in children.
3. Evaluation of eye health in the child population.
 - a) Methods, tests, tests and techniques for assessing eye health in children of different ages
 - b) Considerations of the advantages and disadvantages of each methods and their application in clinical practice.
4. Visual pre-reading bases: accommodation, vergence, ocular motility and visual perception.
 - a) Detection of ocular motility anomalies
 - b) Diagnostic optometric tests

Related activities:

ASSESSMENT ACTIVITY NUMBER 01: Adapting the examination to the profile of the paediatric patient

Full-or-part-time: 23h

Practical classes: 8h

Self study : 15h

Management of paralytic and non-paralytic strabismus

Description:

1. Motor and sensory evaluation in children
2. Detection and diagnosis of non paralytic strabismus: signs, symptoms and optometric assessment.
3. Detection and diagnosis of paralytic strabismus: signs, symptoms and optometric assessment.
4. Differential diagnosis
5. Strabismus management and treatment strategies in children.

Specific objectives:

ASSESSMENT ACTIVITY NUMBER 02: Exercices/Cases strabismus

Full-or-part-time: 14h

Practical classes: 4h

Self study : 10h

Ambliopia

Description:

1. Detection and diagnosis of amblyopia
2. General guidelines for the management of amblyopia in children
 - a) Optical correction for the treatment of amblyopia
 - b) General aspects of the different treatments for amblyopia
 - c) Management of different types of amblyopia

Full-or-part-time: 7h

Theory classes: 2h

Self study : 5h



Vision and Learning

Description:

- 1.- Visual evaluation and optometric differential diagnosis of learning related difficulties
- 2.- Management strategies and optometric treatment of visual efficacy

Related activities:

ASSESSMENT ACTIVITY NUMBER 03: Learning related difficulties and visió.

Full-or-part-time: 10h 30m

Practical classes: 6h

Self study : 4h 30m

Infant Visual Screening

Description:

1. Strategy and management of optometry test materials for child visual screening
2. Management and treatment of the results of a child visual screening

Full-or-part-time: 6h

Theory classes: 2h

Self study : 4h

Myopia control management

Description:

- 1.- Assessment and differential diagnosis of myopic progression in schoolchildren
- 2.- Myopic progression control management strategies in schoolchildren
- 3.- Analysis and management of risk factors and prevention of myopic progression in schoolchildren.

Related activities:

ORAL PRESENTATION: preparation and delivery of an oral presentation about a specific myopia topic.

Full-or-part-time: 12h

Practical classes: 2h

Self study : 10h

Visual assessment in special populations

Description:

- 1.- Assessment, differential diagnosis and treatment in patients with Autism Spectrum Disorder
- 2.- Assessment, differential diagnosis and treatment in patients with Down syndrome
- 3.- Assessment, differential diagnosis and treatment in patients with Cerebral Palsy

Full-or-part-time: 9h

Practical classes: 4h

Self study : 5h



ACTIVITIES

ASSESSMENT ACTIVITY NUMBER 01: Adapting the examination to the profile of the paediatric patient

Description:

Exercise/case study about adapting the examination to the profile of the paediatric patient

Full-or-part-time: 4h

Guided activities: 4h

ASSESSMENT ACTIVITY NUMBER 02: Exercices/Cases strabismus

Description:

Exercices/Cases strabismus

Full-or-part-time: 4h

Self study: 4h

ASSESSMENT ACTIVITY NUMBER 03: Learning related difficulties and visión.

Description:

Responding an exercise / questions about learning related difficulties and visión.

Full-or-part-time: 4h

Self study: 4h

ASSESSMENT ACTIVITY NUMBER 04: Case study

Description:

Case study (written)

Full-or-part-time: 10h

Self study: 10h

ORAL PRESENTATION: preparation and delivery of an ora presentation about a specific myopia topic.

Description:

Preparation and delivery of an ora presentation about a specific myopia topic.

Full-or-part-time: 10h

Self study: 10h

GRADING SYSTEM

The overall grade will be obtained through the submission of assessment written activities (40%), an oral presentation (20%) and a final written exam (40%):

$$Q=(AE)*0,40+(EO)*0.20+(EF)*0,40$$

AE: There will be a total of 4 evaluable written activities related to different topics of paediatric optometry that must be submitted on certain dates throughout the semester. The percentage of qualification of each activity is 10% and therefore the 4 evaluable activities correspond to 40% of the final grade.

EO: oral presentation of a specific topic related to the subject (20%).

EF: Final theory exam (face-to-face), which is an individual written test on the contents of the course. The final exam will consist of multiple-choice questions and/or short clinical questions related to the topics of the subject.

The re-evaluation/re-sit of the subject will consist of a face-to-face exam with test questions and/or short questions of a clinical nature related to the topics of the subject (70%) and a written presentation by the student of a pediatric clinical case that they have found in their optometric practice and is related to the contents of the subject (30%).

EXAMINATION RULES.

Attendance to this module is compulsory and to pass the module it is mandatory to attend at least 75% of face-to-face sessions and contribute to the debate and discussion.

The submission of the assessment (written) activities of the course will be made in digital format through links in the Atenea Virtual Campus. The deadlines for each of the activities will be published at the beginning of the course. The non-delivery of any assessment activity result in a 0 in such activity. It is necessary to follow the format and style proposed published in Atenea, otherwise this may result in a penalty in the qualification of the activity. In addition, there will be a penalty for the presentation of assessment activities after the deadline, which will be 10% of the grade awarded for each day or part of the day (including weekends) that the activity has been submitted after the established deadline. For example, an assessment activity presented 2 hours late in the presentation date will suffer a penalty of one day (reduction of 10% of the final grade). An assessment activity presented after midnight of the day following the date of presentation will suffer a penalty of two days (reduction of 20% of the final grade).

In case of partial or total copy/plagiarism, in any of the assessment activities of the module, the General Academic Regulations of the UPC will be applied:

"Irregular actions that may lead to a significant variation of the grade of one or more students constitute a fraudulent performance of an evaluation act. This action involves the descriptive qualification of suspense and numerical of 0 of the act of evaluation and of the subject, without prejudice to the disciplinary process that may arise as a result of the acts carried out.

If the student considers the decision incorrect, he can file a complaint with the director or the dean of the teaching center and, if the answer does not satisfy him, he can file an appeal with the rector.

The total or partial reproduction of academic or research works, or their use for any other purpose, must have the explicit authorization of the authors or authors.

It is up to the director or the dean of the teaching center to resolve the allegations on aspects not included in the regulations."



BIBLIOGRAPHY

Basic:

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- Wright, Kenneth W; Spiegel, Peter H; Thompson, Lisa S. Handbook of pediatric strabismus and amblyopia . New York, NY : Springer Science+Business Media, Inc, 2006. ISBN 9780387279244.
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