

Course guide

370030 - OGERIAT - Geriatric Optometry and Low Vision

Last modified: 22/03/2024

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

Degree: BACHELOR'S DEGREE IN OPTICS AND OPTOMETRY (Syllabus 2020). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 3.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Bernat Sunyer Grau (<https://futur.upc.edu/BernatSunyerGrau>)

Others: Eulalia Sánchez Herrero (<https://futur.upc.edu/EulaliaSanchezHerrero>)

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CE20. Measure, interpret and treat refractive errors. Describe the sensory and oculomotor mechanisms of binocular vision. Identify the principles of and measure, interpret and treat accommodative and binocular vision anomalies. Demonstrate skills in communication, recording data and writing clinical histories. Demonstrate skills in the interpretation and clinical judgement of results of vision tests, to establish the most suitable diagnosis and treatment. Demonstrate skills in instrumental assessment tests of visual function and eye health. Carry out a complete medical history. Identify, apply and interpret instrumental tests relating to visual health problems. Demonstrate the clinical skills required for the examination and treatment of patients. Examine, diagnose and treat visual anomalies with an emphasis on differential diagnosis. Describe the nature and organisation of types of clinical care. Describe the protocols that are applied to patients.

CE22. (ENG) Conèixer i aplicar ajudes òptiques i no òptiques per a la baixa visió.

CE24. Identify and apply vision screening techniques to various populations.

Generical:

CG1. Demonstrate knowledge of, design and apply prevention and maintenance programmes relating to the population's visual health.

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

CG3. Advise and guide patients and relatives during the entire treatment.

CG5. Give opinions and produce reports and expert reports when necessary.

CG6. Assess and incorporate the technological improvements necessary to properly carry out professional activities.

CG7. (ENG) Ser capaç de dur a terme activitats de planificació i gestió en un servei o una petita empresa en el camp de l'òptica-optometria

CG8. Plan and carry out research projects that contribute to the production of knowledge in the field of optometry and disseminate this scientific knowledge via the typical communication channels.

CG9. Expand and update one's professional abilities through continuing education.

CG11. Locate new information and interpret it in context.

CG14. Demonstrate knowledge, skills and abilities in patient healthcare.

CG15. (ENG) Demostrar capacitat per actuar com a agent d'atenció primària visual.

Transversal:

CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

At the end of the course of geriatric optometry and low vision, the student will have obtained the following objectives:

1. knowledge of the modifications linked to aging of the perceptual processes.
2. Competence to identify and manage situations requiring interprofessional referral/collaboration.
3. Competence to evaluate and treat patients affected by low vision.

STUDY LOAD

Type	Hours	Percentage
Hours medium group	20,0	33.33
Hours small group	10,0	16.67
Self study	30,0	50.00

Total learning time: 60 h

CONTENTS

title english

Description:

content english

Related competencies :

CG11. Locate new information and interpret it in context.

CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.

Full-or-part-time: 7h

Theory classes: 2h

Self study : 5h



title english

Description:

content english

Related competencies :

CG11. Locate new information and interpret it in context.

CT2. SUSTAINABILITY AND SOCIAL COMMITMENT: Being aware of and understanding the complexity of the economic and social phenomena typical of a welfare society, and being able to relate social welfare to globalisation and sustainability and to use technique, technology, economics and sustainability in a balanced and compatible manner.

Full-or-part-time: 6h

Theory classes: 2h

Self study : 4h

title english

Description:

content english

Related competencies :

CG3. Advise and guide patients and relatives during the entire treatment.

CG1. Demonstrate knowledge of, design and apply prevention and maintenance programmes relating to the population's visual health.

CG5. Give opinions and produce reports and expert reports when necessary.

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

CG11. Locate new information and interpret it in context.

CE24. Identify and apply vision screening techniques to various populations.

CE20. Measure, interpret and treat refractive errors. Describe the sensory and oculomotor mechanisms of binocular vision.

Identify the principles of and measure, interpret and treat accommodative and binocular vision anomalies. Demonstrate skills in communication, recording data and writing clinical histories. Demonstrate skills in the interpretation and clinical judgement of results of vision tests, to establish the most suitable diagnosis and treatment. Demonstrate skills in instrumental assessment tests of visual function and eye health. Carry out a complete medical history. Identify, apply and interpret instrumental tests relating to visual health problems. Demonstrate the clinical skills required for the examination and treatment of patients.

Examine, diagnose and treat visual anomalies with an emphasis on differential diagnosis. Describe the nature and organisation of types of clinical care. Describe the protocols that are applied to patients.

Full-or-part-time: 19h

Theory classes: 5h

Self study : 14h



title english

Description:

content english

Related competencies :

CG3. Advise and guide patients and relatives during the entire treatment.

CG5. Give opinions and produce reports and expert reports when necessary.

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

CG11. Locate new information and interpret it in context.

CG7. (ENG) Ser capaç de dur a terme activitats de planificació i gestió en un servei o una petita empresa en el camp de l'òptica-optometria

CE24. Identify and apply vision screening techniques to various populations.

Full-or-part-time: 4h

Theory classes: 1h

Self study : 3h

title english

Description:

content english

Related competencies :

CG3. Advise and guide patients and relatives during the entire treatment.

CG5. Give opinions and produce reports and expert reports when necessary.

CE22. (ENG) Conèxier i aplicar ajudes òptiques i no òptiques per a la baixa visió.

Full-or-part-time: 17h 30m

Theory classes: 6h 30m

Self study : 11h

title english

Description:

content english

Related competencies :

CG3. Advise and guide patients and relatives during the entire treatment.

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

CG14. Demonstrate knowledge, skills and abilities in patient healthcare.

CG15. (ENG) Demostrar capacitat per actuar com a agent d'atenció primària visual.

CE22. (ENG) Conèxier i aplicar ajudes òptiques i no òptiques per a la baixa visió.

Full-or-part-time: 4h

Theory classes: 2h

Self study : 2h



ACTIVITIES

name english

Related competencies :

CG5. Give opinions and produce reports and expert reports when necessary.

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

CE20. Measure, interpret and treat refractive errors. Describe the sensory and oculomotor mechanisms of binocular vision.

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Examine, diagnose and treat visual anomalies with an emphasis on differential diagnosis. Describe the nature and organisation of types of clinical care. Describe the protocols that are applied to patients.

Full-or-part-time: 1h 30m

Laboratory classes: 1h 30m

name english

Related competencies :

CG5. Give opinions and produce reports and expert reports when necessary.

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Full-or-part-time: 1h 30m

Laboratory classes: 1h 30m



name english

Related competencies :

CG5. Give opinions and produce reports and expert reports when necessary.

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Laboratory classes: 1h 30m

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Related competencies :

CG5. Give opinions and produce reports and expert reports when necessary.

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Full-or-part-time: 1h 30m

Practical classes: 1h 30m



name english

Related competencies :

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

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Full-or-part-time: 1h 30m

Laboratory classes: 1h 30m

name english

Related competencies :

CG1. Demonstrate knowledge of, design and apply prevention and maintenance programmes relating to the population's visual health.

CG11. Locate new information and interpret it in context.

CG3. Advise and guide patients and relatives during the entire treatment.

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

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CE24. Identify and apply vision screening techniques to various populations.

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Full-or-part-time: 1h 30m

Theory classes: 1h 30m



name english

Related competencies :

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CE22. (ENG) Conèxier i aplicar ajudes òptiques i no òptiques per a la baixa visió.

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Full-or-part-time: 2h

Practical classes: 2h

name english

Related competencies :

CG5. Give opinions and produce reports and expert reports when necessary.

CG2. Carry out each stage of visual examinations effectively: medical history, selection and implementation of diagnostic tests, establishment of a prognosis, selection and execution of treatment and, if necessary, preparation of referral reports that establish levels of collaboration with other professionals, to ensure the best possible care for the patient.

CE20. Measure, interpret and treat refractive errors. Describe the sensory and oculomotor mechanisms of binocular vision. Identify the principles of and measure, interpret and treat accommodative and binocular vision anomalies. Demonstrate skills in communication, recording data and writing clinical histories. Demonstrate skills in the interpretation and clinical judgement of results of vision tests, to establish the most suitable diagnosis and treatment. Demonstrate skills in instrumental assessment tests of visual function and eye health. Carry out a complete medical history. Identify, apply and interpret instrumental tests relating to visual health problems. Demonstrate the clinical skills required for the examination and treatment of patients.

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CE22. (ENG) Conèxier i aplicar ajudes òptiques i no òptiques per a la baixa visió.

Full-or-part-time: 8h 39m

Practical classes: 2h 30m

Self study: 6h 09m



name english

Description:

A5 (9). Optical Applicances: Absorptives lenses que se trabaja en los contenidos del tema 5.3 Control de la iluminación (5.3.2.1 Función y acción de los filtros terapéuticos, 5.3.2.2. Características e Identificación, 5.3.2.3. Protocolo de prescripción y en el apartado 5.3.3. con resolución de casos. Representa un peso de 1 hora de teoría y 0,5h de prácticas, equivalente a 0,06 ECTS.

B7 (5) (12) (13) (14) (17). Vision Development and Ageing: Normal changes in vision with ageing / Anomalies of the ageing adult / Clinical characteristics of changes in perceptual function (non-visual) associated with ageing/ Symptom profiles, clinical procedures, and tests identifying changes in vision, se trabaja en los contenidos del tema 1.3 Optometría Geriátrica, (1.1. Gerontología y geriatría, 1.2. Cambios estructurales normales relacionados con la edad. 1.3. Cambios funcionales normales relacionados con la edad, 1.4. Evaluación diferencial y en el apartado 1.5 Criterios de Prescripción). Representando un peso de 3 horas de teoría y 1,5h de prácticas, equivalente a 0,18 ECTS.

B7 (15) (16). Vision Development and Ageing: Clinical management of ageing patients with multisensory loss / Vision Development and Ageing: Assessment of the need for referral and consultation with other disciplines. Se trabaja en los contenidos del tema 1. Optometría geriátrica, a través de la lectura de artículos y en el tema 4. Esquema global de atención a la discapacidad visual. Representando un peso de 2 horas de teoría de aprendizaje autónomo y 1h de docencia presencial, equivalente a 0,12 ECTS.

B7 (23). Vision Development and Ageing: The special examination needs of patients with severe visual field defects, y B9 (6) (7) Low Vision: aids for peripheral field /eccentric viewing and steady eye strategy, se trabaja en el tema 2.3. Resto visual y esquema de las limitaciones funcionales en función de la patología. Representando un peso de 0,5 horas de teoría equivalente a 0,02 ECTS.

B7 (24). Vision Development and Ageing: The application of complex low vision aids, e.g., spectacle-mounted telescopes, CCTV. En los temas 5.1 y 5.2 se trabajan los microscopios y las lupas. Representando un peso de 4,5 horas de teoría equivalente y 3h de prácticas (sesión 3 y 4), equivalente a 0,3 ECTS. Los telescopios y los CCTV se indican en el apartado 4.2 con una carga equivalente a 0,02 ECTS.

B7 (11) (12)(26), B9 (3) y B12 (1). Refraction. Observation and recognition of clinical signs, and techniques and skills for determining the near add. An understanding of the special examination needs of patients with severe visual field defects / Vision Development and Ageing: The assessment of visual function, including the use of specialist charts for distance and near vision, and the effects of lighting, contrast, and glare/ Low Vision: measurement of visual performance, including the use of specialist charts/ Investigative Techniques. Low vision assessment and management. Se trabajan en el tema 3.2. Aspectos diferenciales de la evaluación optométrica (3.2.3. Anamnesis, 3.2.4. Identificación de condiciones habituales, 3.2.5. Evaluación refractiva y 3.2.6. evaluación de otros aspectos del resto visual: binocularidad, campo visual, visión del color, sensibilidad al contraste, deslumbramiento y adaptación a la oscuridad). Representa un peso de 6 hora de teoría y 5h de prácticas, equivalente a 0,44 ECTS.

B9 (9). Low Vision: clinical procedures. Se trabaja en el tema 3.1. Protocolos de evaluación en función de los objetivos (3.1. Protocolo de evaluación de la salud visual, 3.2. Protocolo para la determinación funcional del resto visual). Representa un peso de 0,5 horas de teoría, equivalente a 0,02 ECTS.

B9 (1) (2). Low Vision: definitions and regulations of low vision/ Low Vision: incidence and causes. Se trabaja en el tema 2.1 Etiquetas de la deficiencia visual y en el 2.2 Etiología y prevalencia. Representa un peso de 1 hora de teoría, equivalente a 0,04 ECTS.

B9 (4). Low Vision: magnification, non-optical aids. La magnificación se trata en el tema 3.7. Determinación de los aumentos (3.7.1. Teoría de los aumentos, 3.7.2. Aumentos en visión próxima, 3.7.3. Metodología en función de las diversas condiciones y 3.7.4. Ejemplos). Representa un peso de 1,5 hora de teoría y 1,5h de prácticas, equivalente a 0,12 ECTS.

B9 (4) (5). Low Vision: magnification, non-optical aids/illumination and lighting, se trabaja en los contenidos del tema 5.3 Control de la iluminación, (5.3.1.1 Tipos de iluminación y espectros de emisión, 5.3.1.2. Temperatura del color, 5.3.1.3. Determinación del tipo de iluminación, 5.3.1.4. ergonomía. Representa un peso de 1 hora de teoría y 0,5h de prácticas, equivalente a 0,06 ECTS.

B9 (8). Low Vision: environmental modification. Este aspecto se trabaja en el apartado 2.1. Condiciones mínimas de accesibilidad. Representa un peso de 0,5 horas de teoría, equivalente a 0,02 ECTS.

Full-or-part-time: 1h

Theory classes: 1h

GRADING SYSTEM



EXAMINATION RULES.

In case of partial or total copying in any of the assessments of the subject, the provisions of the Academic Regulations of the UPC bachelor's and master's degree studies will be applied:

"Irregular actions that may lead to a significant variation in the grade of one or more students constitute a fraudulent performance of an act of evaluation. This action entails the descriptive grade of failure and numerical grade of 0 of the evaluation act and the subject, without prejudice to the disciplinary process that may be derived as a result of the acts performed.

If the student considers the decision to be incorrect, he/she may file a complaint with the director or the dean of the educational center and, if the response does not satisfy him/her, he/she may 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.

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

BIBLIOGRAPHY

Basic:

- Macnaughton, Jane. Evaluación en baja visión. 10ª ed. Barcelona: Masson, 2006. ISBN 9878445816004.
- Abengózar, A. [et al.]. Manual de baja visión y rehabilitación visual. Madrid: Médica Panamericana, 2015. ISBN 9878498358490.
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- Selvin, G.J.; Townsend, J.C. "Clinical pearls in optometric management of the geriatric patient". *Journal of the American Optometric Association*. 1994, vol. 65, núm.1, p.49-57.
- Turbert, David; Gudgel, Dan. "Causes of low vision". *American Academy of Ophthalmology* [on line]. 2021 [Consultation: 10/05/2022]. Available on: <https://www.aao.org/eye-health/diseases/low-vision-cause>.
- Minto, H.; Ghoshal, R. "Causas y síntomas de la baja visión". *Brien Holden Vision Institute*. 2012, p.1-8.
- Fraser, K.; Gordon, R.; Faye, E. "Low vision rehabilitation program". *American Optometric Association*. 23, S129-30.
- Ryan B. "Models of low vision care: Past, present and future". *Clinical and experimental optometry* [on line]. 2014, vol. 97, núm 3, p. 209-213 [Consultation: 10/05/2022]. Available on: <https://www.tandfonline-com.recursos.biblioteca.upc.edu/doi/abs/10.1111/cxo.12157?journalCode=tceo20>.

Complementary:

- Randall, T. José. Visión subnormal. Madrid: ONCE, 1988.