



# UNIVERSITÀ DEGLI STUDI DI PALERMO

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|--------------------------------|---|------------------------|------------------|
| <b>DEPARTMENT</b>              | Biomedicina, Neuroscienze e Diagnostica avanzata                    |                        |                  |
| <b>ACADEMIC YEAR</b>           | 2022/2023   |                        |                  |
| <b>BACHELOR'S DEGREE (BSC)</b> | ORTHOTICS AND OPHTHALMOLOGIC CARE                                   |                        |                  |
| <b>INTEGRATED COURSE</b>       | ORITHOPTICS AND REFRACTION - INTEGRATED COURSE                      |                        |                  |
| <b>CODE</b>                    | 21271   |                        |                  |
| <b>MODULES</b>                 | Yes   |                        |                  |
| <b>NUMBER OF MODULES</b>       | 2   |                        |                  |
| <b>SCIENTIFIC SECTOR(S)</b>    | MED/50  |                        |                  |
| <b>HEAD PROFESSOR(S)</b>       | VADALA' MARIA   | Professore Associato   | Univ. di PALERMO |
| <b>OTHER PROFESSOR(S)</b>      | VADALA' MARIA   | Professore Associato   | Univ. di PALERMO |
|                                | MANISCALCO GIROLAMO   | Professore a contratto | Univ. di PALERMO |
| <b>CREDITS</b>                 | 8   |                        |                  |
| <b>PROPAEDEUTICAL SUBJECTS</b> |   |                        |                  |
| <b>MUTUALIZATION</b>           |   |                        |                  |
| <b>YEAR</b>                    | 2   |                        |                  |
| <b>TERM (SEMESTER)</b>         | 1° semester   |                        |                  |
| <b>ATTENDANCE</b>              | Mandatory   |                        |                  |
| <b>EVALUATION</b>              | Out of 30   |                        |                  |
| <b>TEACHER OFFICE HOURS</b>    | <b>VADALA' MARIA</b><br>Monday 12:00 14:00<br>Wednesday 09:00 10:00 |                        |                  |

**DOCENTE:** Prof.ssa MARIA VADALA'

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| <b>PREREQUISITES</b>      | Knowledge and competence of the pathophysiology of binocular vision and ametropia, competence and ability to interpret the results of specific diagnostics. Knowledge of physics and optic.  |
| <b>LEARNING OUTCOMES</b>  | <p>Knowledge and understanding:</p> <p>Knowledge of the principles of prescription and use of corrective optical aids for ametropias and ocular pathological conditions, as well as the aesthetic-functional rehabilitation possibilities by means of aids and prostheses. Comprehensive acquisition of ocular motility alterations, classifications, pathogenesis and therapy of phorias and tropias. Knowledge of ocular surgery techniques for the correction of binocular vision alterations.</p> <p>Ability to apply knowledge and understanding:</p> <p>Ability to independently recognize and treat ocular motility disorders and refractive defects.</p> <p>Judgment autonomy:</p> <p>Being able to evaluate the implications and results in the diagnosis and treatment of the diseases examined.</p> <p>Communication skills:</p> <p>Ability to expose medical problems and diagnostic and therapeutic techniques even to a non-expert public.</p> <p>Learning skills:</p> <p>Ability to update by consulting the scientific publications of the sector.</p>   |
| <b>ASSESSMENT METHODS</b> | <p>Verification is performed by oral examination according to the University calendar. A written test can also take part in the whole evaluation as part of didactic organization and its value is not cumulated with the final mark.</p> <p>The oral exam consists of an interview, aimed at ascertaining the possession of the disciplinary skills and knowledge required by the course; the interview may focus on one or more pertinent questions. Open or semi-structured questions tend to verify the acquired knowledge, the ability to organization and processing of technical information and the ability to display it. The ability to organize and elaborate content aims to verify the complex and transversal clinical reasoning between the disciplines and the application of notions in a professional context, also multidisciplinary. As regards the exhibition capacity, the ability of the examining student to demonstrate a property of language appropriate to the professional context of reference, and sufficiently articulated, will be assessed with an increasing score.</p> <p>The evaluation is expressed in thirtieths:</p> <p>Mark from 18 to 23: basic knowledge of the exam topic and synthesis and presentation skills;</p> <p>Mark from 24 to 27: thorough knowledge of the exam topic with good synthesis and exposure skills;</p> <p>Mark from 28 to 30 cum laude: excellent knowledge of the exam topic and appropriate correlation with other relevant topics and excellent synthesis and presentation skills.</p> |
| <b>TEACHING METHODS</b>   | Frontal lessons and exercises  |

## MODULE REFRACTION AND CONTACTOLOGY

*Prof. GIROLAMO MANISCALCO*

### SUGGESTED BIBLIOGRAPHY

Calossi A, Fossetti A, Rossetti A, Zeri F, Ottica visuale, 2012, Societa' Editrice Universo ISBN 9788865150771  
William J. Benjamin : Borish's Clinical Refraction, Second Edition, Butterworth- Heinemann, Elsevier Inc.(2006) ISBN 0750675241

Rossetti A, Gheller P, Manuale di optometria e contattologia, Ed. Zanichelli 2003 ISBN 9788808147721  
Lupelli L, Fletcher R, Rossi A. "Contattologia. una guida clinica. Medical books 2004 ISBN 9788880340270.

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| <b>AMBIT</b>                  | 10331-Scienze dell' ortottica e dell' assistenza di oftalmologia |
| <b>INDIVIDUAL STUDY (Hrs)</b> | 45   |
| <b>COURSE ACTIVITY (Hrs)</b>  | 30   |

### EDUCATIONAL OBJECTIVES OF THE MODULE

Starting from the principles of optics, the aim of the course is to acquire the knowledge and methodologies necessary for the evaluation of visual acuity and for correction with lenses; further competence is expected to be acquired in the field of contactology both for prescriptive purposes, for the correction of refractive defects, and for medical contactology applications.

## SYLLABUS

| Hrs | Frontal teaching   |
|-----|--|
| 2   | Geometric optics.  |
| 4   | Patient evaluation: anamnesis, preliminary examinations, visual acuity, ability to accommodate and converge in near vision and prescribing systems (TABO and International).<br>Optotypes for far and near, test glasses, lens for testing visual acuity.  |
| 8   | Objective refraction and subjective refraction; schiascopy, autorefractometry, keratometry, corneal topography, determination of the spherical equivalent and the best vision sphere (BVS), blurring and recession, correction of astigmatism by using the quadrant for astigmatism, evaluation of astigmatism by using the Jackson crusader cylinder: procedure, checks and controls. Ball refinement test: use of positive and negative 0.25 dt lenses, bichromatic, crosshair and cross cylinder.   |
| 1   | Effects of an overcorrection of addition by close.<br>Effect of lenses and prisms on vision (accommodation and convergence).<br>Final choice of correction and prescription.   |
| 15  | Contact lenses: history and evolution of contact lenses.<br>Basics of anatomy and physiology of the cornea and ocular surface, oxygenation and corneal metabolism.<br>Notes on the optical and geometric characteristics of contact lenses.<br>Conversion table of the dioptric power of the lenses as a function of distance.<br>Contact lens materials: classification and nomenclatures (ISO standards).<br>Soft lenses, hard Lenses and hybrid contact lenses; construction systems, materials, types and indications for use.<br>Correction of refractive defects through contact lenses: spherical lens, multifocal lens, toric lens.<br>Operating principles and indications for use.<br>Contactology in "fragile corneas": lens for keratoconus and corneal irregularities, therapeutic contact lenses, prosthetic lenses. Operating principles and indications for use.<br>Elements of pediatric contactology<br>Eye Prostheses: history, materials, construction techniques and indications for use. Meaning morpho-functional rehabilitation.<br>Evaluation of the tear film, the ocular surface and investigation techniques in a slit lamp. |

## MODULE ORTHOTICS

*Prof.ssa MARIA VADALA'*

### SUGGESTED BIBLIOGRAPHY

R. Frosini, L. Campa, R. Caputo, R. Frosini: Diagnosi e terapia dello strabismo e delle anomalie oculomotorie. SEE- Firenze 2000, ISBN: 9788884650207  
 E. Leonardi: Le alterazioni oculomotorie – Societa' Editrice Universo - Roma, 1999  
 HG. Bredemeyer, K. Bullock: Ortottica: teoria e pratica. Ed. Piccin 1986 ISBN: 8829904848  
 B. Bagolini, M. Zanasi. Strabologia - Diagnosi e Terapia dello Strabismo e del Nistagmo - Verduci Editore, 2006 ISBN: 9788876207488  
 P. Nucci, M. Serafino. Oftalmologia pediatrica e strabismo. 2012 Fabiano ed. ISBN: 9788897929000  
 Appunti delle lezioni del docente.

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| <b>AMBIT</b>                  | 10331-Scienze dell' ortottica e dell' assistenza di oftalmologia |
| <b>INDIVIDUAL STUDY (Hrs)</b> | 75   |
| <b>COURSE ACTIVITY (Hrs)</b>  | 50   |

### EDUCATIONAL OBJECTIVES OF THE MODULE

Acquisition of diagnostic and therapeutic competence regarding the anomalies of the ocular motility, including all diagnostic methods used in the definition of a relative clinical picture.

## SYLLABUS

| Hrs | Frontal teaching  |
|-----|---|
| 15  | Concomitant strabismus: general characteristics; innervational laws; motor elements; sensory elements.<br>Esodeviations:<br>Early onset esotropia: early accommodative esotropias<br>early secondary exotropies<br>essential infantile esotropia<br>Adduction elevation<br>Alphabetic syndromes<br>Dissociated vertical deviation (DVD)<br>late-onset esotropia:<br>late normo-sensory esotropies;<br>accommodative: pure accommodative esotropia<br>partially accommodative esotropia<br>accommodative esotropia with excess convergence<br>decompensated exophoria<br>acute esotropia<br>late anomalous sensory esotropies: decompensated intermittent esotropia<br>decompensated microstrabismus<br>anomalous-sensorial partially accommodative esotropia<br>Intermittent exodeviation: exophoria<br>intermittent esotropia<br>circadian esotropia<br>General elements of diagnosis of exodeviation<br>Exodeviations:<br>Manifest constant exotropias: early constant exotropia<br>decompensated intermittent exotropia<br>decompensated microstrabismus<br>Periodic exodeviation: intermittent exotropia<br>exotropia<br>Secondary exodeviations<br>General diagnostic elements of exodeviation |
| 12  | Incomitant strabismus:<br>Oculomotor paralysis: signs and symptoms;<br>diplopia and confusion<br>orientation disorders<br>incomitancy<br>primary and secondary deviation<br>compensation stiff neck<br>concomitantization of the deviation<br>Diagnostic elements of oculomotor paralysis: examination of the incitement<br>examination of the stiff neck<br>examination of diplopia<br>Oculomotor paralysis in childhood<br>Paralysis of III - IV - VI pair of n.c.<br>Double paralysis of the elevators<br>Therapeutic measures   |

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| 3 | <p>Ocular torticollis:<br/> Definition and general characters<br/> Torticollis intended to improve visual function: from refractive anomalies<br/> from perimetric anomalies<br/> from nystagmus<br/> Eyelid ptosis<br/> Torticollis intended to compensate for an incipient deviation</p>  |
| 5 | <p>Restriction syndromes:<br/> Definition and general characters<br/> Stilling-Turk- Duane syndrome type I - II - III<br/> Brown syndrome<br/> Mobius syndrome<br/> Congenital muscle fibrosis<br/> Fractures of the orbital walls<br/> Dystiroid myopathies<br/> Strabismus and myopia<br/> External progressive ophthalmoplegia<br/> Toulouse-Hunt syndrome<br/> Supranuclear palsy</p> |
| 5 | <p>Nystagmus:<br/> Definition and general characteristics<br/> Physiological nystagmus<br/> Congenital nystagmus: manifest congenital nystagmus<br/> latent congenital nystagmus<br/> Acquired nystagmus<br/> Visus and nystagmus<br/> Therapeutic approaches</p>   |
| 5 | Semeiotic and diagnostic  |
| 5 | Non-surgical and surgical correction of binocular vision disorders  |