Hybrid Professional Master's Degree

Optical Technologies and Clinical Optometry

tech global university

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Hybrid Professional Master's Degree

Optical Technologies and Clinical Optometry

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

60 + 5 créditos ECTS

Website: **www.techtitute.com/us/physiotherapy/hybrid-professional-masters-degree/hybrid-professional-optical-technologies-clinical-optometry**

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01

Introduction

Eye conditions are being caused in recent years by the excessive use of electronic devices. Nowadays, screens are found in our daily tasks, from the cell phone itself, to advertising posters or in work tasks. Although companies have already detected the eye damage of their devices and have integrated more beneficial screens, the fact is that prolonged use of these devices is still seriously harmful. In this sense, it is increasingly common for patients to turn to specialists who are highly up-to-date to deal with these pathologies. For this reason, TECH offers a theoretical and practical qualification that explores the optometric area.

This program not only offers you the best theoretical contents, but provides you the possibility of applying them in practice in a prestigious hospital center"

Myopia, presbyopia and retinopathy are some of the most frequent pathologies faced by specialists. The increase in these cases requires optometric experts who are highly qualified and even up-to-date to be able to put into practice the new advances that, according to scientific evidence, are the key to the improvement of patients, the management of microscopic surgical techniques and, therefore, the prevention of irreparable damage to people's eyesight.

The clinical labor market requires specialists who can cope with the changes in ocular pathologies due to the excessive use of screens, for example. In this sense, students will delve into the special adaptations of contact lenses, preoperative tests for cataract surgery, the basics of biostatistics, the treatment of low vision, as well as pediatric optometry. All this, with the aim that specialists include these methods in the health care of international health systems.

TECH has developed this program in detail thanks to the contribution of experts in the field, who have been qualified in the field of optical technologies and clinical optometry. The teaching staff will transmit the theoretical knowledge in the first instance to the specialists so that, in the second period of the program, they will be able to put it into practice in a hospital center.

Thanks to the clinical internship in a recognized clinic, optometrists will develop their practical skills in depth by being confronted with real cases. TECH proposes this teaching model, given the need for specialists to learn rigorously and directly in the space in which they carry out their professional career.

In addition, it offers a flexible study based on 100% online and downloadable content that specialists can use at any time and place, even after completing the qualification. It is an academic opportunity that will allow for an academic endowment that can be adapted to the personal and professional needs of the experts.

This **Hybrid Professional Master's Degree in Optical Technologies and Clinical Optometry** contains the most complete and up-to-date scientific program on the market. Its most outstanding features are:

- Development of more than 100 clinical cases developed by experts in hematology and hemotherapy who will transmit their experience to the specialists taking this program
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- The most frequent new developments in Optical Technologies and Clinical Optometry
- The presentation of hands-on workshops about procedures, diagnostic and therapeutic techniques
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection
- Furthermore, you will be able to carry out a clinical internship in one of the best hospitals

Expand your professional experience with the collaboration of teachers and experts in the optometric field who will guide you in the theoretical and practical study"

Take an intensive 3-week internship in a prestigious center and explore knowledge in optometric clinical innovation.

This Hybrid Professional Master's Degree will allow you to practice optometry in real environments, which will provide an immersive learning experience designed to face daily clinical situations.

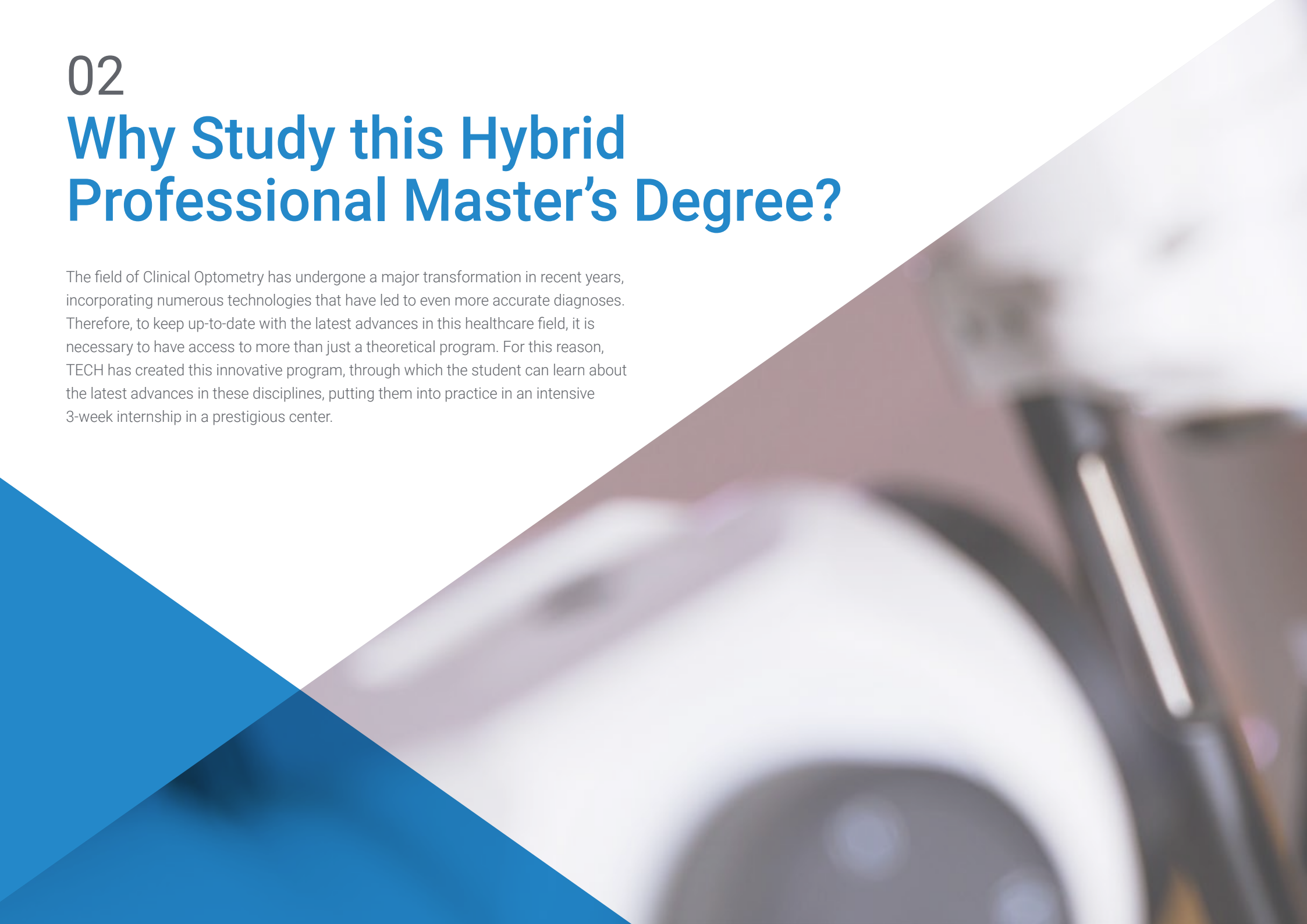
This Master's program, which has a professionalizing nature and a hybrid learning modality, is aimed at updating optometrists who perform their functions in optometry units and require a high level of qualification. The contents are based on the latest scientific evidence, and oriented in a educational way to integrate theoretical knowledge in the medical practice, and the theoretical-practical elements will facilitate the updating of knowledge and decision-making when treating patients' pathologies.

Thanks to the multimedia content, developed with the latest educational technology, medical professionals will benefit from situated and contextual learning, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

02

Why Study this Hybrid Professional Master's Degree?

The field of Clinical Optometry has undergone a major transformation in recent years, incorporating numerous technologies that have led to even more accurate diagnoses. Therefore, to keep up-to-date with the latest advances in this healthcare field, it is necessary to have access to more than just a theoretical program. For this reason, TECH has created this innovative program, through which the student can learn about the latest advances in these disciplines, putting them into practice in an intensive 3-week internship in a prestigious center.



You will not find another program like this one that allows you to learn about the latest advances in Clinical Optometry and Optical Technologies through an intensive internship in a reference health center"

1. Updating from the latest technology available

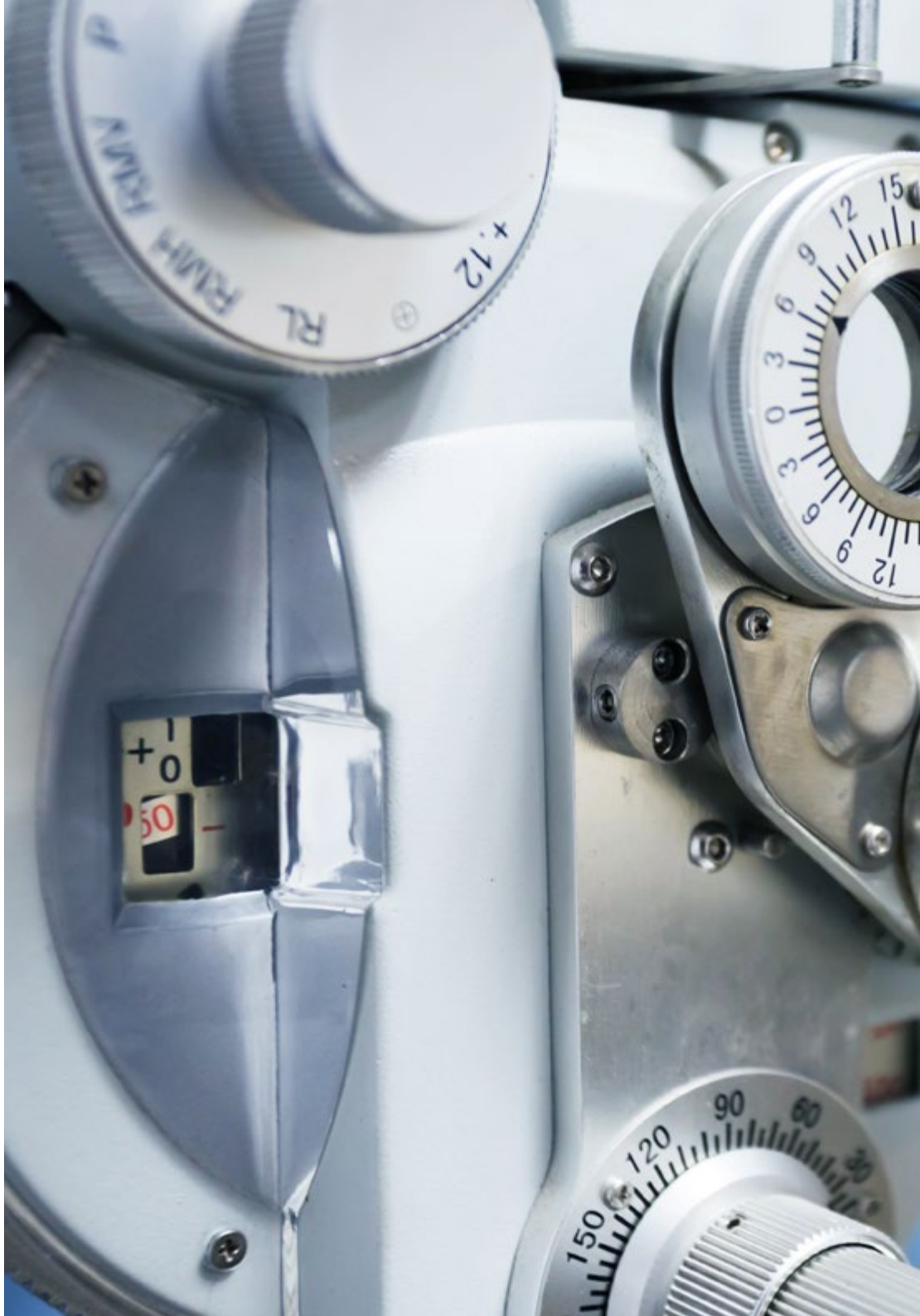
Recent technological advances in the field of Optometry and Optics have made the professional oriented to these specialties need an immediate update. For this reason, TECH offers them the opportunity to carry out a clinical internship in a prestigious clinical center, where they will be able to work in an innovative environment with state-of-the-art equipment.

2. Gaining In-Depth Knowledge from the Experience of Top Specialists

The student will have the opportunity to develop in a professional environment surrounded by a large team of specialists, who will accompany them throughout the practical period. Therefore, it is guaranteed that they obtain the latest scientific and technical postulates from the hand of experienced experts in the areas of Clinical Optometry and Optical Technologies.

3. Entering First-Class Clinical Environments

TECH carefully selects all the centers available for internships. Therefore, the professional will have guaranteed access to a prestigious clinical environment in the area of Optometry. In this way, they will be able to experience the day-to-day of a demanding, rigorous and exhaustive area of work, always applying the latest theses in their work methodology.



4. Combining the Best Theory with State-of-the-Art Practice

This program allows professionals to immediately integrate the latest developments in this clinical discipline into their daily work. This is because its combination of advanced theory with high-level practice ensures an optimal learning experience. Therefore, at the end of the stay offered in this program, the student will be able to start using all the techniques and procedures acquired in their own practice.

5. Expanding the Boundaries of Knowledge

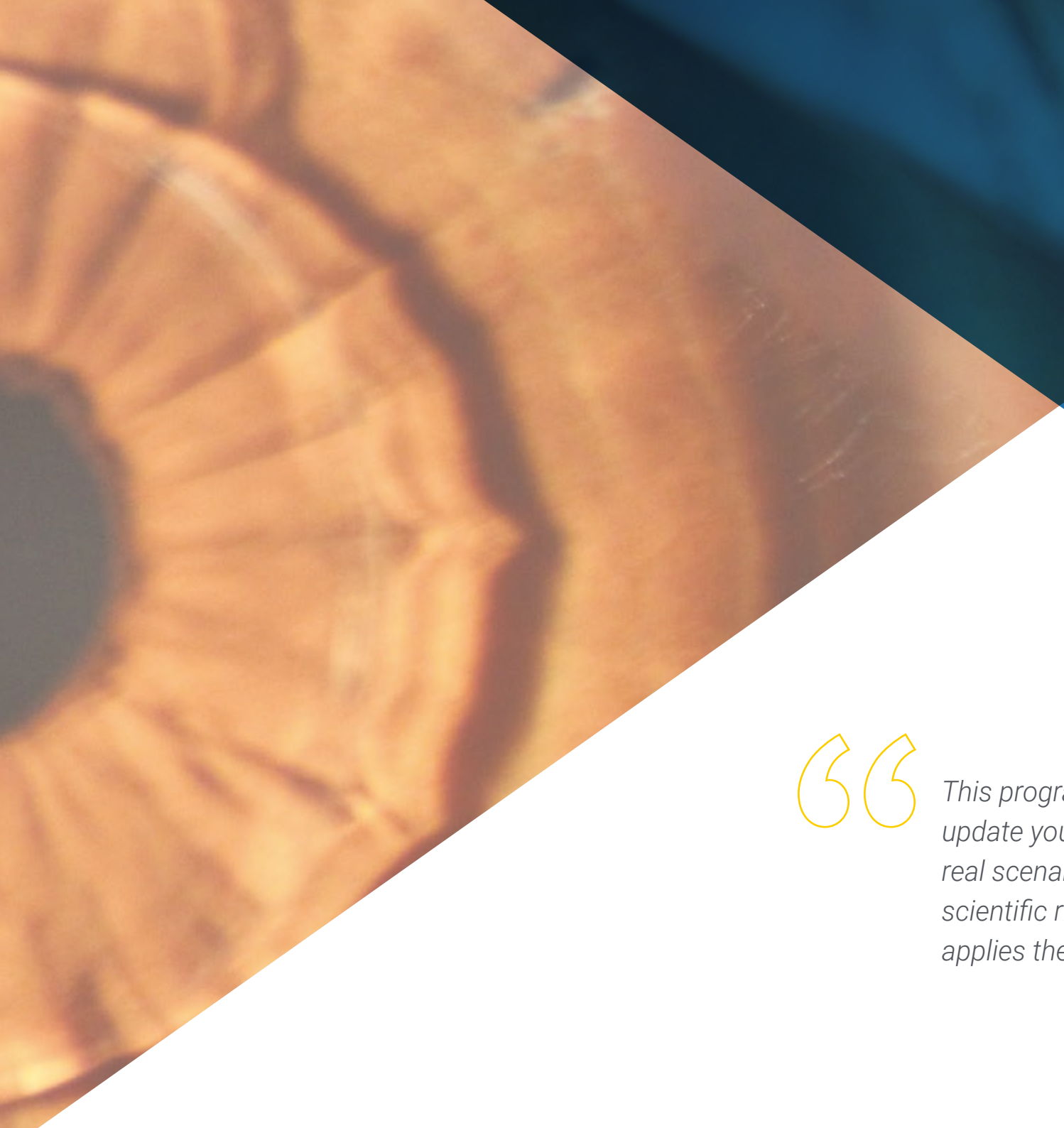
TECH offers the opportunity to carry out these internships not only in national but also international centers. This way, the specialist will be able to expand their frontiers and catch up with the best professionals, who practice in first class centers and in different continents. A unique opportunity that only TECH, the largest online university in the world, could offer.

You will have full practical immersion at the center of your choice"

03

Objectives

The design of this Hybrid Professional Master's Degree will allow the students to acquire the necessary competences to update their knowledge in the special adaptations of contact lenses, preoperative tests for cataract surgery, the basics of biostatistics, the treatment of low vision, as well as pediatric optometry. The knowledge acquired in the development of the points of the syllabus will drive the professional from a global perspective, with full capacity to achieve the proposed goals. In this way, the optometrist will develop multiple skills in the field. For this reason, TECH has established a series of general and specific objectives for the satisfaction of future graduates, as follows:



This program will allow you to update your knowledge from a real scenario, with the maximum scientific rigor of an institution that applies the latest optical technology"

General Objective

- This program aims to expand and update the optometrist's knowledge in a theoretical-practical way. TECH achieves this through a practical experience in a rigorous hospital clinic that applies technological innovation to its diagnostics. The expert will be able to develop around the assessment of clinical cases, the prevention of ocular pathologies, the mechanisms of action and routes of administration of drugs at the ocular level, as well as being able to intervene with instruments for measuring the quality and quantity of tears, characterization of the cornea and sclera, measurement of the anterior chamber and the iridocorneal angle, etc. All this to ensure a superior service to rehabilitate patients.

This updating program will bring professional benefits to the physician also in praxis, such as objective methods of refraction and retinoscopy"

Specific Objectives

Module 1. Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery

- In-depth understanding of ocular optics and how to act on it to adjust refraction by modifying corneal power
- In-depth understanding of ocular optics and how to act on it to modify refraction with intraocular lenses
- Handle the excimer laser and ablation profiles according to the refraction being treated
- Study the different techniques of corneal refractive surgery
- Describe the preoperative tests necessary for surgical indication in corneal refractive surgery
- Manage the role of the optometrist in the preoperative, intraoperative and postoperative process in corneal refractive surgery
- Deepen in the postoperative medical treatment in corneal refractive surgery
- Gain in-depth knowledge of the normal evolution and complications in corneal refractive surgery
- Study the techniques of intraocular refractive surgery
- Describe phakic lenses, their indications and necessary preoperative testing
- Describe Pseudophakic eyes lenses, their indications and necessary preoperative testing
- Specialize in the surgical procedure of clear lens and cataract surgery
- Apply the different formulas for calculating the pseudophakic intraocular lens in normal eyes
- Delve into the special procedures for calculating the pseudophakic intraocular lens in eyes that have previously undergone corneal refractive surgery
- Describe the main complications that can occur in intraocular refractive surgery

Module 2. Biostatistics for Optics and Optometry Research

- Define the concepts of statistics, biostatistics and epidemiology
- Understand the need to know biostatistics for a clinician
- Know how to apply the appropriate graphic representation to the type of data resulting from a clinical study
- Delve into the procedures of parametric and non-parametric analysis of data obtained through research
- Know how to perform simple, multiple and logistic regression analysis
- In-depth knowledge of the procedures for the comparison of clinical instrumentation

Module 3. Vision Therapy in Clinical Practice

- Interpreting the different variables involved in a complete medical history
- Acquire criteria and procedures according to age, reason for visit and prognosis
- Consolidate the necessary bases, procedures and materials
- Understand in depth the results obtained after the assessment
- Consolidate the necessary bases, procedures and materials
- Know, integrate and establish consultation protocols according to optometric diagnosis
- Delve into the visual alterations that can occur in an acquired brain injury
- Interpret results, appropriate patient selection and intervention plan using vision therapy.
- Specialize in what visual skills are involved in a grassroots and/or elite athlete
- Learning to establish consultation protocols
- Lay the foundations for evidence-based vision therapy intervention and interdisciplinary work
- Learn to develop a professional communication exercise with other professionals

Module 4. Metrics and Measures of Visual Quality

- Deepen the principles of aberrometry
- Present the concept of a perfect optical system
- Knowing that it is impossible to obtain an eye without aberrations
- Manage the classification of optical aberrations
- Describe the distribution of aberrations present in the normal eye
- In-depth knowledge of the main metrics used to evaluate visual quality
- Knowing the ocular optical surfaces susceptible to aberrations
- Differentiating between external and internal ocular aberrations
- Specialize in the aberrations present in corneal ocular pathology
- In-depth knowledge of the types of aberrations induced by corneal and intraocular refractive surgery
- Describe the instruments for the measurement of aberrations
- Present treatment strategies for ocular aberrations

Module 5. Latest Advances in the Management of Amblyopia

- In-depth knowledge of the types and characteristics of amblyopia
- In-depth knowledge of the visual alterations that occur in the different types of amblyopia
- Learn the visual examination protocol to be performed for the detection and follow-up of amblyopia
- In-depth knowledge of the treatment protocol to be followed with scientific basis
- Expand professional projection, being able to evaluate, diagnose and treat patients with amblyopia, who are on occasion neglected by optometrists

Module 6. Low Vision and Geriatric optometry

- In-depth knowledge of the types of conditions that cause mild, medium and severe visual impairment
- In-depth knowledge of the visual alterations that occur in the different types of pathologies and non-ocular conditions that affect the visual system
- Learn the visual examination protocol to be performed for the detection and follow-up of the patient with low vision Know the techniques of the TR applied to patients
- In-depth knowledge of the new protocols for examination, treatment and action in a multidisciplinary manner
- Expand professional projection, being able to evaluate, diagnose and treat patients with low vision, who are currently neglected to a great extent by optometrists, since it is still a "young" discipline, unknown to society and a great part of eye care professionals

Module 7. Pharmacology of Ophthalmic Use

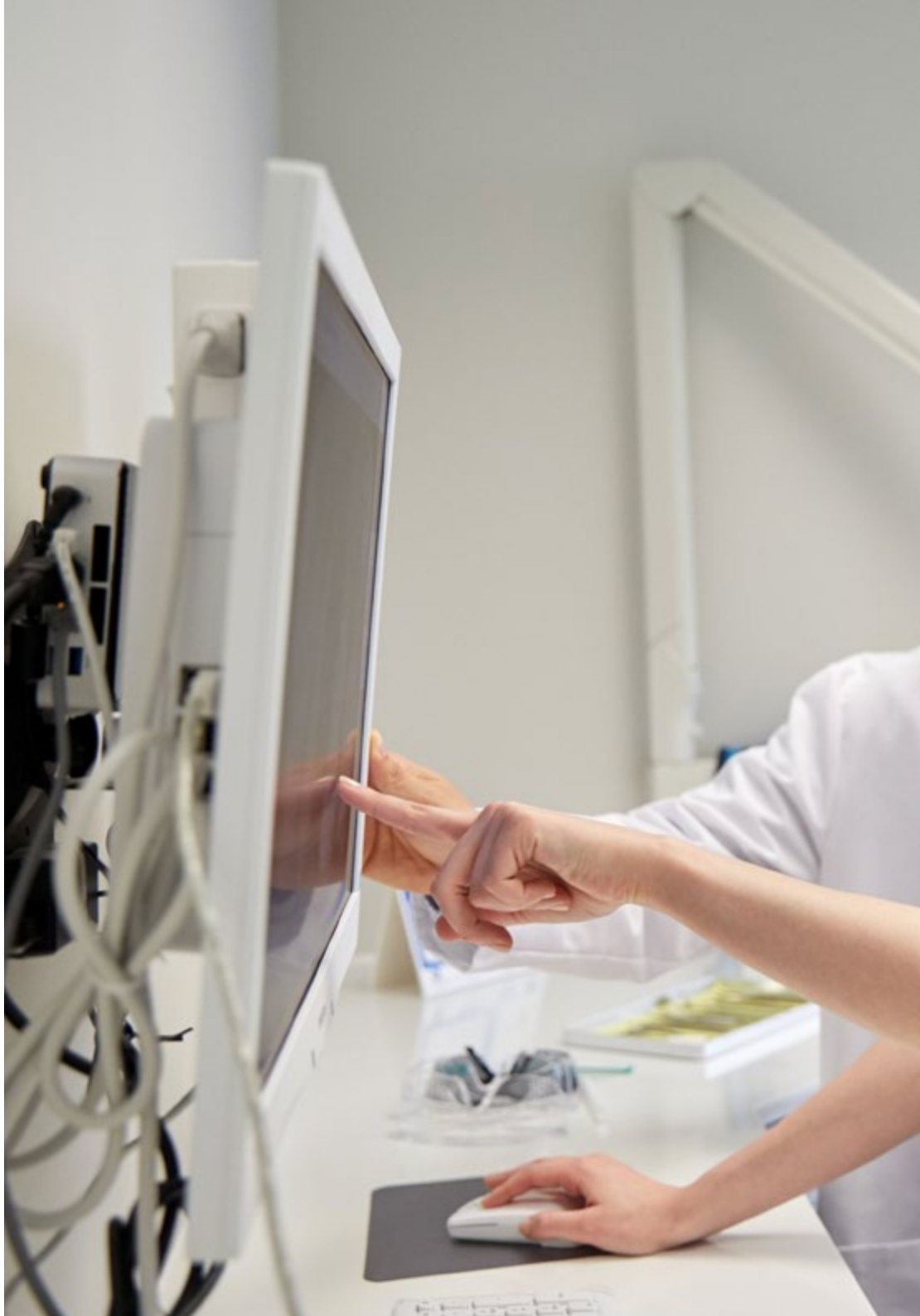
- In-depth understanding of the mechanism of action of ocular drugs
- Identify the adverse reactions caused by this type of drugs
- Delve deeper into the groups of drugs used in the treatment of infectious ocular pathologies and antifungal drugs
- Describe anti-inflammatory drugs, both steroidal and nonsteroidal
- Accurate knowledge of the antigiogenic drugs for the treatment of AMD
- Know in depth the use and effects of botulinum toxin in the eye
- Describe the different types of ocular lubricants

Module 8. Latest Advances in Optical and Optometric Instrumentation

- Become familiar with the methods and instrumentation necessary for the characterization of the ocular lacrimal layer
- Describe the instruments used to measure optical parameters and corneal morphology
- Know precisely the instruments necessary for the characterization of the sclera
- Describe the techniques and instruments for measuring the irido-corneal angle
- Introduce the instruments for intraocular pressure measurement
- Delve into the instruments used for the evaluation of the visual field
- Describe the instrumentation used for optic nerve evaluation

Module 9. Geriatric Optometry

- Consolidate optometric goals in the pediatric population
- Delve into the evolutionary scale of the child
- Know and relate the neurophysiological basis of vision to the different visual skills
- Delve into the clinical guidelines related to the pediatric population
- Specialize in the prevalence in the pediatric population and relate it to clinical practice
- Learning how to interact with pediatric patients
- Strengthen procedures in a pediatric setting
- Learn how to take medical histories according to age and reason for the visit
- Interpret a clinical history and establish a pre-diagnosis
- Learn how to perform assessment according to age and condition of the patient
- Learn how to establish pediatric optometric diagnoses
- Learn how to create different models of referral reports and interprofessional communication



Module 10. Advanced Contactology

- Detailed knowledge of the ocular surface and the tear, as this is the medium where the contact lens fitter will adapt the contact lens
- In-depth knowledge of the different topographic maps and their clinical application in contactology
- Become familiar with the use of the biomicroscope for the study of ocular health prior to fitting a contact lens and subsequent evaluation of the fitting
- Deepen and learn how to fit rigid gas permeable contact lenses in regular corneas
- Learn how to fit, not "put in", soft contact lenses Many of the adaptations currently being made are not optimal The contact lens specialist will learn how to make the fittings as personalized as possible
- Become familiar with all possible solutions for irregular corneal adaptations and know the criteria to choose the best alternative
- Handle the basics of orthokeratology and the adaptation of this type of lenses
- Learn how to assess fitting and monitoring
- Learn the main aspects that make for a different orthokeratology adaptation in high myopia, astigmatism and hyperopia
- Learn how to use the tools currently available to control the progression of myopia
- Master the fitting of multifocal lenses and know how to improve and optimize a fitting by means of defocus curves and lens power profiles
- Solve the most frequent complications found in contact lens fittings

04

Skills

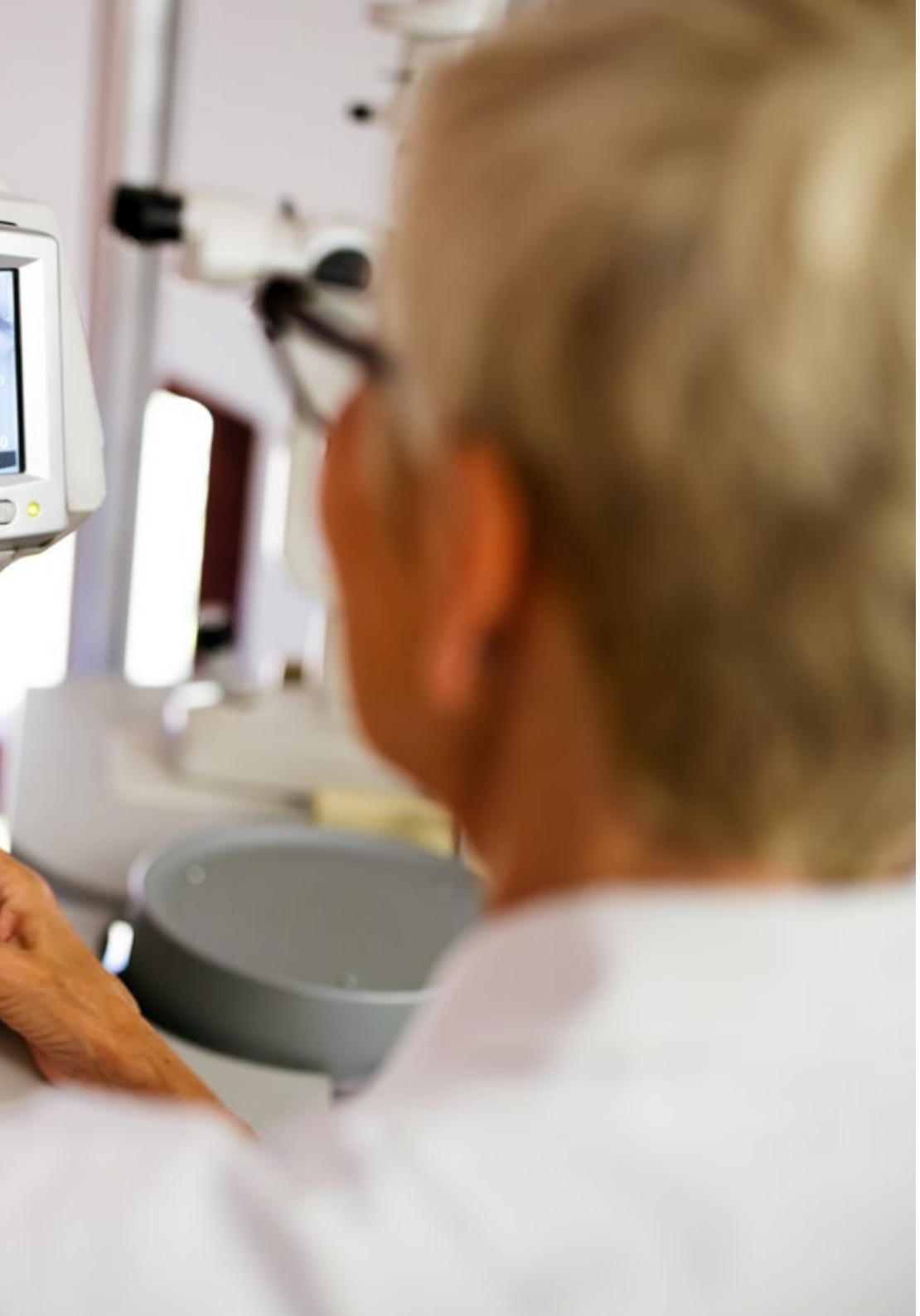
After completing the Hybrid Professional Master's Degree in Optical Technologies and Clinical Optometry, the specialist will have acquired the necessary professional skills to analyze visual anomalies and measurement methods and propose alternatives for visual correction. In addition, they will strengthen their clinical skills in ocular surgery on pathologies. And, at the same time, they will obtain the tools to communicate their research results and to manage a patient's postoperative period.

Thanks to this program you will be able to update your knowledge in biomicroscopy and its uses and become a multi-skilled professional"

General Skills

- Apply the theoretical and clinical knowledge acquired in this program, to address any of the specialties of optics and optometry
- Manage the different visual therapy techniques in accommodative, oculomotor and perceptual dysfunctions, from a multidisciplinary point of view
- Develop the necessary knowledge to evaluate clinical cases, detect potential aberrations present and identify whether they are within the normal range and propose a treatment
- Be able to administer anesthetic drugs that modify pupil size and act on accommodation

Delve into the most relevant theory in this field, subsequently applying it in a real work environment"



Specific Skills

- Perform ocular biometry and intraocular lens calculation for clear lens and cataract surgery
- Understand the difference between intuitive response and response based on data analysis
- Establish an optometric diagnosis
- Distinguish the types of optical aberrations
- Present the results of the latest studies on amblyopia
- Apply the latest advances in low vision aids, examination techniques, and patient and family support
- Recognize the properties of the drugs used in the treatment and diagnosis of ocular pathology
- Describe ocular biometry and its use in Optometry
- Consolidate knowledge of the visual pathway and its development
- Identify ocular conditions that make it inadvisable to use contact lenses and look for the best alternative

05

Course Management

TECH has called upon a team of teachers who are at the forefront of the optometric discipline, ocular studies and ocular diagnostics. Thanks to their experience, the specialists who take this program will receive complementary instruction that will delve deeper into optometric studies. In addition, this professional team will provide students with personalized tutorials to resolve any questions they may have during their studies.

Leading professionals in the optical field will provide you with the most relevant technological and scientific developments in this field so that you can develop rigorously"

Management

Dr. Calvache Anaya, José Antonio

- Optometrist at Clínica Baviera in Palma de Mallorca
- Teacher in courses on Biostatistics, Keratometry and Corneal Topography and Ocular Biometry
- Degree in Optics and Optometry from the University of Alicante
- Doctor in Optometry and Vision Sciences from the University of Valencia
- Master's Degree in Advanced Optometry and Vision Sciences from the University of Valencia
- Postgraduate Diploma in Statistics Applied to Health Sciences by the UNED
  Diploma in Optics and Optometry from the University of Alicante

Professors

Dr. Just Martínez, María José

- Community Pharmacist in Aquamarina Pharmacy
- Technical Director of Private Optical in Valencia
- Doctor of Pharmacy from the University of Valencia
- Diploma in Optics and Optometry from the University of Valencia
- Postgraduate Diploma in Pharmacotherapeutic Monitoring from the University of Granada
- Diploma in Health

Dr. Escutia Puig, María Oreto

- Optometrist at La Ribera University Hospital
- Technical Director at Óptica Parc, Alzira
- Technical Director at Óptica Lucena
- Degree in Pharmacy from the University of Valencia
- Diploma in Optics and Optometry from the University of Valencia
- Master's Degree in Advanced Optometry and Vision Sciences from the University of Valencia
- Master's Degree in Advanced Visual Health Care from the Universitat de València

Dr. Pérez Cambrodí, Rafael

- Technical Director at Cambrodi Opticos
- Specialist in Low Vision Project at ONCE (Spanish National Organization of the Blind)
- Specialist in the Optometry and Refractive Surgery Unit at OFTALMAR
- Optometrist at Medimar International Hospital
- Director of the Optometry Unit of Medimar International Hospital
- Doctor in Optometry and Vision Sciences from the University of Valencia
- Diploma in Optics from the University of Alicante
- Master's Degree in Optometry and Intraocular Lenses from the European University of Madrid

Dr. Fernández-Baca, Macarena

- Specialist in Pediatric Optometry, Visual Therapy and Neuro-Optometry
- Optometrist in private practice
- Vice President of the American Academy of Optometry's Admissions Committee
- Assistant Director and Coordinator of the Boston Optometric Center
- Clinical Specialist at The New England College of Optometry
- Assistant Professor at the University of Houston
- Doctor of Optometry, University of Houston College of Optometry of Texas
- Diploma in Optometry from the Complutense University of Madrid

D. Berbegal García, Vicente

- Specialist in Optics and Optometry
- Contact lens specialist in the team of optometrists of Teixido Óptiques de Reus
- Graduate in Optics and Optometry from the University of Alicante
- Master's Degree in Optometry and Vision Therapy from the International Optometry Center
- Member of International Academy of Orthokeratology and Myopia Control (FIAMOC)

Dr. Roca Fernández del Villar, Ricardo

- Optometrist in CASAÑA ROCA SL
- Specialist in Low Vision in the Ophthalmology Service of Quirón Málaga.
- Manager and Founder of Óptica
- Diploma in Technological and Instrumental Optics from the Complutense University of Madrid
- Diploma in Optics from the Complutense University of Madrid

Dr. De Lamo Requena, Mercedes

- Technical Director of IVOP Institut Valencià d`Optometría
- Optician-Optometrist at Centro CIOC and Visió-Teràpia E. Santolaria
- Optician-Optometrist at Multiópticas Pérez Setien, Óptica Mercedes and Vissum Oftalmología
- Diploma in Optics and Optometry from the University of Valencia
- Graduate in multiple specialties by the Pacific University College of Optometry

06

Educational Plan

The contents of this program have been carefully designed by highly experienced specialists in the sector, who guarantee the correct instruction of optometrists. Thanks to the distribution of knowledge, the professional will delve into the special adaptations of contact lenses, preoperative tests for cataract surgery, the fundamentals of biostatistics especially aimed at research in optical and optometric technologies, the treatment of low vision from clinical practice, as well as pediatric optometry. All this with a practical and multidisciplinary approach that, from the first theoretical module, will expand the knowledge of professionals.

Explore the study of the corneal plane to apply new techniques in corneal refractive surgery"

Module 1. Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery

1.1. Physical Basis of Refractive Change in the Corneal Plane
- 1.1.1. Solution of the Theoretical Eye
  - 1.1.1.1. Theoretical Emeropic Eye
  - 1.1.1.2. Theoretical Emeropic Eye
- 1.1.2. Change in Refraction as a Function of Change in ACD
- 1.1.3. Change in Refraction as a Function of Change in Corneal Power

1.2. Corneal Refractive Surgery Techniques
- 1.2.1. Corneal Anatomy and Physiology
- 1.2.2. Optical Foundation
- 1.2.3. LASIK
- 1.2.4. PRK
- 1.2.5. LASEK
- 1.2.6. SMILE
- 1.2.7. PRESBILASIK
- 1.2.8. Re-treatments

1.3. Types of Laser
- 1.3.1. The Excimer Laser
- 1.3.2. Ablation Profiles
- 1.3.3. Optometrist in the Laser Refractive Surgery Operating Room
- 1.3.4. Surgery Scheduling and Safety Protocols
- 1.3.5. Creation of a Nomogram

1.4. Preoperative Testing for Corneal Refractive Surgery
- 1.4.1. Corneal Topography and Tomography
  - 1.4.1.1. Normal Corneal Topography
  - 1.4.1.2. Corneal Astigmatism vs. Refractive: Application of Javal's Rule
  - 1.4.1.3. Pathological Topographies
  - 1.4.1.4. Suspicious Topographies
- 1.4.2. Pachymetry
  - 1.4.2.1. Normal Values, Limits and Fine Pachymetries
  - 1.4.2.2. Limitations of Surgery Due to Pachymetry
- 1.4.3. Refraction:
  - 1.4.3.1. Visual Acuity
  - 1.4.3.2. Subjective Refraction vs. Objective Refraction
  - 1.4.3.3. Cycloplegic Refraction
  - 1.4.3.4. Surgical Indication
- 1.4.4. Test Verification
  - 1.4.4.1. Pre-surgical Briefing

1.5. Postoperative Period and Complications in Corneal Refractive Surgery
- 1.5.1. Intra-Operative
  - 1.5.1.1. Correction of Programming Errors by Vectors of Dioptric Powers
  - 1.5.1.2. Incomplete Lenticule
  - 1.5.1.3. Complete Lenticule
  - 1.5.1.4. Loss of Epithelium
- 1.5.2. Post-Operatives
  - 1.5.2.1. Flap Dislocation
  - 1.5.2.2. Keratitis Sicca
  - 1.5.2.3. Infections
  - 1.5.2.4. Epithelial Growth at the Interphase
  - 1.5.2.5. Interphase Fluid Syndrome
  - 1.5.2.6. Cortico-Dependent Increase in Intraocular Pressure
  - 1.5.2.7. Toxic Anterior Segment Syndrome (TASS)
  - 1.5.2.8. Loss of Visual Quality

1.6. Physical Basis of Refractive Change Induced by Intraocular Lenses
- 1.6.1. Solution of the Theoretical Eye
  - 1.6.1.1. Phakic Lenses
  - 1.6.1.2. Pseudophakic Lenses in Clear Lens and Cataracts

1.7. Preoperative Testing for Intraocular Surgery
- 1.7.1. Phakic Lenses
- 1.7.2. Lens Surgery

1.8. Ocular Biometry and Intraocular Lens Calculation
- 1.8.1. Calculation Formula for Pseudophakic Intraocular Lenses
- 1.8.2. Calculation Formula for Phakic Intraocular Lenses
- 1.8.3. Ultrasonic and Optical Ocular Biometry
- 1.8.4. Intraocular Lens Power Calculation Formulas
- 1.8.5. Calculation in Eyes Undergoing Corneal Laser Refractive
  - 1.8.5.1. Haigis Method
  - 1.8.5.2. Shammas' Method
  - 1.8.5.3. Barret True-K

1.9. Types of Intraocular Lens
- 1.9.1. Monofocal
- 1.9.2. Multifocal
- 1.9.3. O-rings
- 1.9.4. Accommodating

1.10. Postoperative Period and Complications in Intraocular Refractive Surgery
- 1.10.1. Intra-Operative
- 1.10.2. Early Preoperatives
- 1.10.3. Late Preoperatives

Module 2. Biostatistics for Optics and Optometry Research

2.1. Concept of Biostatistics and Epidemiology
- 2.1.1. Definition of Statistics and Biostatistics
- 2.1.2. Clinical Research
- 2.1.3. Evidence Levels
- 2.1.4. Evidence-Based Optics and Optometry

2.2. A Visual Acuity Measurement Experiment
- 2.2.1. The Teacher's Doubt
- 2.2.2. Random Error and Systematic Error
- 2.2.3. Answering a Question from Intuition or from Science
- 2.2.4. Point or Interval Estimation
- 2.2.5. The Confidence Interval: Concept and Utility
- 2.2.6. The Hypothesis Contrast: Concept and Utility

2.3. Descriptive Statistics
- 2.3.1. Types of Variables
- 2.3.2. Measures of Central Tendency
- 2.3.3. Measures of Dispersion
- 2.3.4. Graphical Representation of Research Project Results
- 2.3.5. Use of Software
- 2.3.6. Examples Applied to Optics and Optometry

2.4. Probability Distributions
- 2.4.1. Concept of Probability
- 2.4.2. Concept of Probability Distribution
- 2.4.3. Binomial Distribution
- 2.4.4. Normal Distribution
- 2.4.5. Concept of Normality and Homoscedasticity
  - 2.4.5.1. Typified Normal Distribution
- 2.4.6. Use of Software
- 2.4.7. Examples Applied to Optics and Optometry

2.5. Confidence Intervals
- 2.5.1. Point or Interval Estimation
- 2.5.2. The 95% Confidence Interval
- 2.5.3. Sample Size Estimation
- 2.5.4. Estimation of an Average
- 2.5.5. Estimation of an Proportion
- 2.5.6. Confidence Interval for a Difference in Means
- 2.5.7. Confidence Interval for a Difference in Proportions
- 2.5.8. Use of Software
- 2.5.9. Examples Applied to Optics and Optometry

2.6. Hypothesis Contrast
- 2.6.1. The P-Value
- 2.6.2. Critical Analysis of P-Value
- 2.6.3. Normality Test
  - 2.6.3.1. Kolmoronov-Smirnov
  - 2.6.3.2. Shapiro-Wilk's Test
- 2.6.4. Homoscedasticity Test
- 2.6.5. Use of Software
- 2.6.6. Examples Applied to Optics and Optometry

2.7. Test for the Comparison of Two Samples and Two Proportions
- 2.7.1. Parametric and Non-parametric Tests
- 2.7.2. *Student*'s T-Test
- 2.7.3. Welch's Test
- 2.7.4. Wilcoxon's Test
- 2.7.5. Mann-Whitney's Test
- 2.7.6. Confidence Interval for the Difference of Means
- 2.7.7. Use of Software
- 2.7.8. Examples Applied to Optics and Optometry

2.8. Test for the Comparison of More than Two Samples or Proportions
- 2.8.1. ANOVA
- 2.8.2. Kruskal-Wallis
- 2.8.3. Post-Hoc Analysis
- 2.8.4. Use of Software
- 2.8.5. Examples Applied to Optics and Optometry

2.9. Regression Analysis
- 2.9.1. Simple Linear
- 2.9.2. Multiple Linear
- 2.9.3. Logistics
- 2.9.4. Use of Software
- 2.9.5. Examples Applied to Optics and Optometry

2.10. Comparison and Concordance Analysis Between Measurement Methods
- 2.10.1. Difference Between Concordance and Correlation
- 2.10.2. Bland-Altman's Graphic Methhod
- 2.10.3. Use of Software
- 2.10.4. Examples Applied to Optics and Optometry

Module 3. Vision Therapy in Clinical Practice

3.1. Medical History
- 3.1.1. Patient's Clinical History
- 3.1.2. Triad: Patient, Family and Optometrist

3.2. Assessment of Sensory and Accommodative Function
- 3.2.1. Sensory Function: Suppression and Stereopsis
- 3.2.2. Accommodative Dysfunctions
- 3.2.3. Necessary Material

3.3. Vergence and Oculomotor Function Assessment
- 3.3.1. Vergenital Dysfunctions
- 3.3.2. Oculomotor Dysfunctions
- 3.3.3. Necessary Material

3.4. Assessment of Visual Information Processing
- 3.4.1. Relationship Between Vision and Learning
- 3.4.2. Visuospatial Skills
- 3.4.3. Visual Analysis Skills
- 3.4.4. Visuomotor Integration Skills

3.5. Visual Therapy in Non-strabismic Dysfunctions
- 3.5.1. Intervention in Accommodative Dysfunctions
- 3.5.2. Intervention in Binocular Dysfunctions
- 3.5.3. Intervention in Oculomotor Dysfunctions

3.6. Visual Therapy in Amblyopia and Strabismus
- 3.6.1. Types of Amblyopia Intervention
- 3.6.2. Interventions in Strabismus

3.7. Visual Therapy in Brain Damage with Visual Impairment
- 3.7.1. Classification of Brain Injuries
- 3.7.2. Visual Problems after Acquired Brain Injury
- 3.7.3. Eye Test
- 3.7.4. Prognosis and Intervention Plan

3.8. Vision Therapy in Sports and Other Professions
- 3.8.1. Sport Vision
- 3.8.2. Visual Skills According to Sports Discipline
- 3.8.3. Techniques and Procedures for the Selection and Training of Athletes
- 3.8.4. Vision Therapy in Other Professions

3.9. Vision Therapy in Comorbidity with Neurodevelopmental Disorders, Low Vision, People With Disabilities and Functional Diversity
- 3.9.1. Visual Examination in Neurodevelopmental Disorders
- 3.9.2. Intervention Protocols According to Current Evidence and Clinical Guidelines
- 3.9.3. Visual Therapy in Patients With Low Vision
- 3.9.4. Triad: Student, Family and School

3.10. Transdisciplinary Practice in Vision Therapy
- 3.10.1. Optometric Report Templates
- 3.10.2. Communication With the Family
- 3.10.3. Communication With the Patient
- 3.10.4. Communication With Healthcare Professionals
- 3.10.5. Communication With the school
- 3.10.6. Visual Intervention in the Classroom

Module 4. Metrics and Measures of Visual Quality

4.1. Principles of Aberrometry
- 4.1.1. Wavefront
  - 4.1.1.1. Perfect Wavefront
  - 4.1.1.2. Aberrated Wavefront
- 4.1.2. Perfect Optical System and Diffraction
  - 4.1.2.1. Diffraction Rings
- 4.1.3. Classification of Optical Aberrations
  - 4.1.3.1. High Order
  - 4.1.3.2. Low Order
- 4.1.4. Decomposition Into Zernike Polynomials
  - 4.1.4.1. Zernike Coefficients
  - 4.1.4.2. Normal Values

4.2. Clinically Significant Optical Aberrations
- 4.2.1. Spherical aberration
  - 4.2.1.1. Optical Foundation
  - 4.2.1.2. Positive Spherical Aberration
  - 4.2.1.3. Negative Spherical Aberration
  - 4.2.1.4. Normal Values
- 4.2.2. Coma.
  - 4.2.2.1. Normal Values

4.3. Metrics for the Measurement of Visual Quality
- 4.3.1. Zernike Coefficients
- 4.3.2. Strehl's Ratio
- 4.3.3. CSF and MTF
- 4.3.4. RMS

4.4. External Ocular Aberrations
- 4.4.1. Corneal Geometry
- 4.4.2. Asphericity
  - 4.4.2.1. Asphericity Coefficients
  - 4.4.2.2. Aspherical and Spherical Aberration
- 4.4.3. Normal Distribution of Corneal Aberrations
  - 4.4.3.1. Normal Eye Asphericity
  - 4.4.3.2. Normal Eye Coma

4.5. Internal Ocular Aberrations
- 4.5.1. Lens
- 4.5.2. Methods

4.6. Aberrations in the Irregular Cornea
- 4.6.1. Keratoconus
- 4.6.2. Corneal Ectasia

4.7. Induced Aberrometric Changes on the Cornea
- 4.7.1. Orthokeratology
  - 4.7.1.1. Focused Treatment Case
  - 4.7.1.2. Off-Center Treatment Case
- 4.7.2. Aberrometric Changes Induced by Corneal Refractive Surgery
  - 4.7.2.1. Myopia Surgery
  - 4.7.2.2. Hyperopia Surgery
  - 4.7.2.3. Off-Center Ablations

4.8. Aberrometric Changes Induced by Crystalline Lens Surgery and Intraocular Lens Implantation
- 4.8.1. Intraocular Lens Aberrations
- 4.8.2. Asphericity and Aberrations in the Pseudophakic Eye

4.9. Instruments for Measuring Visual Quality
- 4.9.1. Surveyors
- 4.9.2. Hartman-Shack Aberrometry

4.10. Compensation of Ocular Aberrations
- 4.10.1. Contact Lenses
- 4.10.2. Corneal Topography Guided Laser Ablation

Module 5. Latest Advances in the Management of Amblyopia

5.1. General Information
- 5.1.1. Visual Acuity Development
- 5.1.2. Critical Periods vs. Plasticity

5.2. Definition

5.3. Types of Amblyopia
- 5.3.1. Refractive Amblyopia
- 5.3.2. Strabismic Amblyopia
- 5.3.3. Deprivation Amblyopia
- 5.3.4. Combination Amblyopia

5.4. Visual Alterations
- 5.4.1. Visual Acuity
- 5.4.2. Contrast Sensitivity
- 5.4.3. Accommodation System
- 5.4.4. Ocular Motility
- 5.4.5. Spatial Localization (Spatial Uncertainty and Distortions)
- 5.4.6. Stacking Effect
- 5.4.7. Suppression and Stereopsis
- 5.4.8. Reading Performance
- 5.4.9. Visuomotor Tasks
- 5.4.10. Neurological Activity and Pupillary Reaction
- 5.4.11. Anatomical Changes

5.5. Visual Acuity
- 5.5.1. Contrast Sensitivity
- 5.5.2. Accommodation System
- 5.5.3. Ocular Motility
- 5.5.4. Spatial Localization (Spatial Uncertainty and Distortions)
- 5.5.5. Stacking Effect
- 5.5.6. Suppression and Stereopsis
- 5.5.7. Reading Performance
- 5.5.8. Visuomotor Tasks
- 5.5.9. Neurological Activity and Pupillary Reaction
- 5.5.10. Anatomical Changes

5.6. Inclusion and Exclusion Assessment and Diagnosis
- 5.6.1. Visual Acuity Evaluation
- 5.6.2. Refractive Status Evaluation
- 5.6.3. Binocular System Evaluation
- 5.6.4. Accommodating System Evaluation
- 5.6.5. Ocular Motility Assessment
- 5.6.6. Ocular Health Assessment

5.7. Treatment With Refractive Status Correction Latest Studies
- 5.7.1. Optical Correction to Prescribe
- 5.7.2. Time Required for Effect
- 5.7.3. Effectiveness

5.8. Treatment With Occlusion and Pharmacological Penalty Latest Studies
- 5.8.1. Occlusion
  - 5.8.1.1. Types of Occlusion
  - 5.8.1.2. Occlusion Time
  - 5.8.1.3. Effectiveness
- 5.8.2. Pharmacological Penalty
  - 5.8.2.1. Atropine Dosage
  - 5.8.2.2. Effectiveness
  - 5.8.2.3. Comparison of Treatment With Occlusion Vs Pharmacological Penalty
  - 5.8.2.4. Treatment Compliance
  - 5.8.2.5. Treatment Regression

5.8.3. Treatment With Visual Therapy Latest Studies
5.8.3.1. Advantages and Inconveniences
5.8.3.2. Monocular Activities
5.8.3.3. Near and Far Vision Activities
5.8.3.4. Antisuppressive Techniques and Binocular Therapy
5.8.4. Other Current and Future Treatments
5.8.4.1. Pharmacological Treatment
5.8.4.2. Acupuncture
5.8.4.3. Other Future Treatments
5.8.5. Comprehensive Management of the Amblyopia Patient
5.8.5.1. Action Protocol
5.8.5.2. Follow-up Evaluation
5.8.5.3. Check-up Calendar

Module 6. Low Vision and Geriatric Optometry

6.1. Low Vision, Definition and Current Classifications
6.1.1. Definition, New Terms and Concepts
6.1.2. What Is a Low Vision Test?
6.1.3. Functional Vision
6.1.4. New Concept of Fragile Vision
6.1.5. Different Classifications, a Single Protocol?
6.1.6. Statistics Related to Visual Impairment of all Types
6.1.7. Concepts and Terminology
6.1.8. Low Vision Statistics
6.1.9. Low Vision Decalogue
6.2. Ocular Pathologies and Other Conditions Causing Low Vision
6.2.1. Degenerative and Non-Degenerative Pathologies
6.2.2. Classification of These Pathologies According to Their Condition
6.2.3. Physiopathogenesis
6.2.4. Risk Factors
6.2.5. Current Evolution of These Pathologies, Epidemiology
6.2.6. Adjustment Process to Visual Impairment
6.2.7. Low Vision in Children and Infants
6.3. Anamnesis in Low Vision and Multidisciplinary Intervention
6.3.1. Preliminary Considerations
6.3.2. Guidelines for Interaction With People With Low Vision
6.3.3. Role of the Patient's Family And/or Companions
6.3.4. How to Transmit the Information
6.3.5. Accompanying the Person With Low Vision
6.3.6. Patient Selection, Success or Failure, Outcome Prognoses
6.4. Clinical Intervention Protocol for Low Vision Individuals or Who Suffer Moderate to Severe Visual Loss
6.4.1. WHO Diagram
6.4.2. Individuals Eligible for Low Vision Adaptive Aids and Visual Rehabilitation
6.4.3. Improved Intervention for People With Low Vision, Fragile Vision, or Neurological Injuries
6.4.4. Tips for Professionals to Help Patients and Family Members
6.4.5. Interdisciplinary Referral Protocol
6.4.6. Interaction With People With Visual Impairment
6.4.7. Same Conditions, Different Solutions
6.5. Low Vision Consultation Material
6.5.1. Attitude and Aptitude
6.5.2. Material in Low Vision and Geriatrics
6.5.3. Tests Required for Evaluation
6.5.4. Which Commercial Products Are Useful?
6.5.5. Organization of a Low Vision Consultation
6.5.6. Patient and Family Support Reports
6.6. Low Vision and Geriatric Vision Patient Examination
6.6.1. Core Values for the Care of Low Vision and Geriatric Patients
6.6.2. Dunning-Kruger Syndrome in the Professional
6.6.3. Refraction of the Patient With Low Vision
6.6.4. Distant Vision
6.6.5. Near Vision
6.6.6. What Does the Patient Want?

6.7. Visual and Non-visual Aids in Visual Limitation, Low Vision and Geriatrics
- 6.7.1. Optical Aids, Classification
- 6.7.2. Non-Optical Aids Environment in Patients With Low Vision
- 6.7.3. Electronic Aids, Classification and Utilities
- 6.7.4. Latest Technologies and Artificial Intelligence for Low Vision
- 6.7.5. How to Create Positive Circumstances

6.8. Light, Its Importance and Basic Concepts Needed for Low Vision
- 6.8.1. Notions of Light Spectrum
- 6.8.2. Basic Concepts
- 6.8.3. Adaptation to Light and Darkness in Low Vision
- 6.8.4. Glare, a Fundamental Factor in Low Vision and Geriatrics
- 6.8.5. Variable of Objects Influencing Vision
- 6.8.6. Selective Filters: Not Everything Goes

6.9. Training in Low Vision Patient Support, Accompaniment and Follow Up
- 6.9.1. Optimal Choice in Patient Aids
- 6.9.2. Clear and Documented Information About Prescribed Aids
- 6.9.3. Guidelines for Training Aids
- 6.9.4. Specific Training in Distance, Medium and Near Vision
- 6.9.5. Expectations and Perceptions
- 6.9.6. Multidisciplinary Follow-up and Intervention, Training
- 6.9.7. Concepts of TR, and Patient Orientation

6.10. Geriatric Optometry Aging and Vision Problems
- 6.10.1. Pillars of Geriatrics
- 6.10.2. Aging and Visual Impairment
- 6.10.3. Significant Physical Changes
- 6.10.4. Assessment of Personal Autonomy
- 6.10.5. Most Relevant Neuropsychological Characteristics
- 6.10.6. Optometric Examination in Geriatric Patients
- 6.10.7. Appropriate Corrections in Geriatric Patients
- 6.10.8. Welfare Support

Module 7. Pharmacology of Ophthalmic Use

7.1. General Principles of Pharmacology
- 7.1.1. Drug Concept
- 7.1.2. Drug Action Mechanisms

7.2. Pharmacokinetics
- 7.2.1. Routes of Drug Administration
- 7.2.2. LADME Process: Release, Absorption, Distribution, Metabolism and Excretion of Drugs
- 7.2.3. Adverse Reactions of Drugs Administered by General and Topical Ocular Administration

7.3. Anesthetic Drugs in Ophthalmology
- 7.3.1. Pharmacological Effects of Anesthetics Applied at the Ocular Level
- 7.3.2. Use of Anesthetics in Ophthalmology
- 7.3.3. Adverse Reactions

7.4. Drugs That Modify the Diameter of the Pupil
- 7.4.1. Pharmacological Effects of Mydriatics, Miotics and Cycloplegics Applied at the Ocular Level
- 7.4.2. Use of Drugs in Ophthalmology
- 7.4.3. Adverse Reactions

7.5. Ocular Hypotensive Drugs
- 7.5.1. Glaucoma Pathology
- 7.5.2. Drug Action Mechanisms
- 7.5.3. Adverse Reactions

7.6. Anti-infective Drugs
- 7.6.1. Antibiotic Drugs
- 7.6.2. Antiviral Drugs
- 7.6.3. Antifungal Drugs

7.7. Anti-inflammatory Drugs and Antihistamines
- 7.7.1. AINES Drugs
- 7.7.2. Steroid Anti-inflammatory Drugs
- 7.7.3. Antihistamine Drugs

7.8. Antiangiogenic Drugs
- 7.8.1. Pathology of AMD
- 7.8.2. Mechanism of Action of Antiangiogenic Drugs

7.9. Botulinum toxin
- 7.9.1. Botulinum Toxin Mechanism of Action
- 7.9.2. Use of Botulinum Toxin in Strabismus

7.10. Drugs Used in the Diagnosis of Ocular Surface Disorders Artificial Tears and Ocular Moisturizers
- 7.10.1. Ocular Dyes
- 7.10.2. Artificial Tears and Ocular Moisturizers

Module 8. Latest Advances in Optical and Optometric Instrumentation

8.1. Characterization of the Tear
- 8.1.1. Characterization of the Meibomian Glands: Indications for Intense Pulsed Light (IPL) Treatment
- 8.1.2. Qualitative and Quantitative Techniques
- 8.1.3. Assessment of Tear Patterns

8.2. Characterization of the Cornea
- 8.2.1. Corneal Topography: Placido Systems and Scheimpflug Photography
- 8.2.2. Optical Coherence Tomography (OCT) of the Anterior Segment
- 8.2.3. Endothelial Microscopy
- 8.2.4. Corneal Biomechanics

8.3. Characterization of the Sclera: Scleral Topography

8.4. Evaluation of the Anterior Chamber and Iridocorneal Angle
- 8.4.1. Classic Techniques
- 8.4.2. Anterior Segment OCT
- 8.4.3. Gonioscopy
- 8.4.4. Ultrasonic Biomicroscopy (UBM)

8.5. Tonometry
- 8.5.1. Techniques
- 8.5.2. Instruments

8.6. Evaluation of the Crystalline Lens
- 8.6.1. Techniques
- 8.6.2. Instruments

8.7. Evaluation of the Optic Nerve, Retina (Vascular Tree, Parenchyma and Macular Area) and Choroid
- 8.7.1. Ophthalmoscopy
- 8.7.2. Posterior Segment OCT
- 8.7.3. Retinography
- 8.7.4. Other Techniques

8.8. Visual Field Evaluation
- 8.8.1. Computerized Campimetry

8.9. Systems for Assessing Visual Quality and Light Scattering

8.10. Ocular Biometry
- 8.10.1. Uses in Optometry
- 8.10.2. Ultrasound biometry
- 8.10.3. Optical biometrics

Module 9. Geriatric Optometry

9.1. Introduction
- 9.1.1. Optometric Goals in the Pediatric Population
- 9.1.2. Developmental Scale of the Child in the First Years of Life

9.2. Development of the Visual System
- 9.2.1. The Visual Pathway: Retina-Lateral Geniculate Body-Visual Cortex
- 9.2.2. Other Routes, Structures and Conexions

9.3. Epidemiology and Clinical Guidelines
- 9.3.1. Preliminary Considerations
- 9.3.2. Prevalence of Refractive Errors, Amblyopia, and Strabismus
- 9.3.3. Other Prevalences

9.4. Cabinet Design and Optometrist's Aptitude
- 9.4.1. The Optometrist and the Child
- 9.4.2. Pediatric Practice Design
- 9.4.3. Inclusion From Diversity

9.5. Medical History in the Pediatric Population
- 9.5.1. Anamnesis From 0 to 3 Years Old
- 9.5.2. Anamnesis From 3 to 7 Years Old
- 9.5.3. Anamnesis From 7 to 18 Years Old

9.6. Visual Acuity, Refractive Status and Contrast Sensitivity in the Pediatric Population
- 9.6.1. Development of Visual Acuity in Pediatric Population
- 9.6.2. Refraction and Its Evolution in the Pediatric Population
- 9.6.3. Contrast Sensitivity in Pediatric Population

9.7. Accommodation and Oculomotor Function in the Pediatric Population
- 9.7.1. Accommodation in Pediatric Population
- 9.7.2. Function in Pediatric Population

9.8. Binocular Function and Perceptual Assessment
- 9.8.1. Binocular Function
- 9.8.2. Perceptual Assessment and Other Skills

9.9. Detection of Pathological Alterations in the Pediatric Population
- 9.9.1. Detection of Alterations in the Anterior Pole
- 9.9.2. Detection of Posterior Pole Alterations

9.10. Transdisciplinary Involvement of the Optometrist in Vision Therapy
- 9.10.1. Communication With Other Health Care Providers
- 9.10.2. Communication With Educational Professionals

Module 10. Advanced Contactology

10.1. Cornea and Ocular Surface
- 10.1.1. Cornea
- 10.1.2. Tears
- 10.1.3. Lens-To-Eye Relationship

10.2. Corneal Topography
- 10.2.1. Introduction and Principles
- 10.2.2. Placid Disk and Elevation Based Topographies
- 10.2.3. Types of Maps and Their Application

10.3. Biomicroscopy
- 10.3.1. Introduction
- 10.3.2. Techniques and Uses
- 10.3.3. Photography and Image Capture

10.4. Fitting of Contact Lenses in Regular Cornea
- 10.4.1. When a Cornea Is Regular
- 10.4.2. RGP Lenses
  - 10.4.2.1. Materials
  - 10.4.2.2. Designs
- 10.4.3. Custom Fitting of Soft Lenses
  - 10.4.3.1. Introduction
  - 10.4.3.2. Concept of Sagitta
  - 10.4.3.3. Importance of Sagittal Height in Soft Lenses

10.5. Fitting of Contact Lenses in Irregular Cornea
- 10.5.1. Definition of Irregular Cornea
- 10.5.2. Corneal Lenses
- 10.5.3. Scleral Lenses
- 10.5.4. Other Possible Solutions

10.6. Principles of Orthokeratology
- 10.6.1. History
- 10.6.2. Treatment Mecanisms
- 10.6.3. Lens Design
- 10.6.4. Evaluation of the Fluorogram
- 10.6.5. Topography Evaluation

10.7. Advanced Orthokeratology
- 10.7.1. Myopia
- 10.7.2. Astigmatism
- 10.7.3. Hyperopia

10.8. Myopia Control With Contact Lenses
- 10.8.1. Introduction to Myopia
- 10.8.2. Orthokeratology
- 10.8.3. Multifocal Soft Lenses
- 10.8.4. Combined Treatments With Atropine

10.9. Fitting of Multifocal Lenses for Presbyopia
- 10.9.1. Blur Curve and Power Profiles
- 10.9.2. RGP Lenses
- 10.9.3. Soft Lenses

10.10. Complications in Contactology
- 10.10.1. Complications Arising From Adaptation
- 10.10.2. Complications Unrelated to the Adaptation

07

Clinical Internship

After completing the period of online theoretical contents, the degree includes an internship in a clinical center recognized for its attention to numerous patients with ocular pathologies and experts. Over the course of the program, the specialist will have the support of professionals who have years of experience in the sector and who will solve all the doubts of the real cases in situ.

Expand your professional knowledge by being part of a clinical team that treats a multitude of patients with optical problems on a daily basis"

The Internship period of this program in optical technologies and clinical optometry is developed over 3 weeks with a thorough preparation around ocular pathologies. It consists of 8-hour days from Monday to Friday, under the guidance of the assistant optometrists. In this way, the specialist will delve into the tools of visual therapy and prevention of eye pathologies, treating directly patients with various pathologies.

These internships are proposed as an academic alternative to orthodox programs based on theory. TECH not only offers the academic period from anywhere and whenever the specialist chooses, but also offers the opportunity to apply all the knowledge in the hospital field. This is the most effective way to learn first-hand about visual quality metrics, advances in amblyopia, new developments in geriatric optometry, ophthalmic pharmacology, as well as optometric instrumentation.

The practical period is a unique and enriching opportunity that will promote the multidisciplinary training of optometrists and boost their professional careers. Students will also be provided with all the clinical material so that they can put their previous theoretical knowledge into practice with real patients and expert tutors. Students will participate in different cases ranging from pediatric optometry to advanced contact lenses. All this with the support of tutors who will guide them and guarantee their correct practice.

The procedures described below will form the basis of the practical part of the training, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:

Module	Practical Activity
Surgical Procedures and Vision Therapy Techniques	Perform preparatory tests for corneal and intraocular refractive surgery
	Intervene using the latest techniques in corneal refractive surgery
	Manage and use the different types of lasers in refractive surgery such as PRK, LASIK, LASEK or EPILASIK
	Perform the calculation of intraocular lenses
	Perform postoperative follow-up and control possible complications after surgery
	Perform the specific intervention in accommodative, binocular, oculomotor and strabismus dysfunctions
	Make a correct optometric report
	Assess and treat amblyopia through treatments with refractive status correction and with occlusion and pharmacological penalization
Biostatistics and Metrics in Optics, Optometry and Visual Quality	Use biostatistics to perform tests for comparison of two or more samples and two or more ratios
	Use specific metrics, using the most advanced instrumentation, for the assessment of the patient's visual quality (Zernike coefficients, Strehl Ratio, CSF and MTF, RMS)
	Treat, from the different measurement methods, the ocular anomalies, as well as spherical and cylindrical ametropias
Technological Innovations, Contactology and Optical and Optometric Instrumentation	Perform corneal topography using Placido systems and Scheimpflug photography
	Use optical coherence tomography (OCT) of the anterior segment
	Assess, using optical and optometric instrumentation, tear patterns, anterior chamber and iridocorneal angle, as well as the lens, retinal optic nerve and visual field
	Apply endothelial microscopy analysis
	Address, by tonometry techniques, the intraocular pressure status
	Use optical instruments such as the telescope and the microscope in different clinical procedures
	Perform contact lens fitting in regular and irregular corneas
	Apply orthokeratology treatment
	Design lenses adapted to each patient, according to their visual conditions

Module	Practical Activity
Techniques of Geriatric and Pediatric Optometry	Perform low vision examination in the geriatric patient
	Apply specific tests to assess the visual and ocular status of the geriatric patient
	Assess the perception of binocular function in the pediatric patient
	Distinguish pharmacodynamics in the geriatric patient and how it affects the main prescribed drugs
	Detect pathological alterations in the pediatric patient
	Adapt contact lenses for pediatric patients
	Identify common problems in pediatric patients such as amblyopia, visual efficiency problems and impact on visual and school performance
Pharmacology for Ophthalmologic Use	Use drugs that modify the pupil diameter
	Apply ocular hypotensive drugs, as well as anti-infective and anti-inflammatory drugs
	Use of botulinum toxin in strabismus
	Approach different procedures according to the pharmacological effects of anesthetics applied at ocular level
	Assess the use of parasympathomimetics and brimonidine in cases of presbyopia

Through this program you will be able to be part of the professional team that takes care of a multitude of patients and intervenes in the preoperative and postoperative stages of the eye"

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.

General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both practical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: the Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

08

Where Can I Do the Clinical Internship?

This Hybrid Professional Master's Degree integrates in its program the internship in a prestigious hospital clinic, where the specialist will be able to complete their academic education and will deal with all practical issues in the clinical environment itself. This practical period will take place during 3 weeks and will bring the optometrist closer to the daily challenges of the profession by facing real cases of various ocular pathologies.

Complete your academic and theoretical education with an internship in a hospital center, thanks to which you will be able to perform daily clinical tasks"

The student will be able to complete the internship of this Hybrid Professional Master's Degree at the following centers:

Vissum Madrid

Country: Spain
City: Madrid

Address: C. Polvoranca, 9, 28901 Getafe, Madrid

Ophthalmology assistance center of international reference

Related internship programs:
- Clinical Ophthalmology
- Optical Technologies and Clinical Optometry

Vissum Alicante

Country: Spain
City: Alicante

Address: Calle Cabañal 1, 03016, Alicante, España

Ophthalmologic care assistance clinic

Related internship programs:
- Clinical Ophthalmology
- Optical Technologies and Clinical Optometry

Hospital HM Modelo

Country: Spain
City: La Coruña

Address: Rúa Virrey Osorio, 30, 15011, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Anaesthesiology and Resuscitation
- Palliative Care

Hospital Maternidad HM Belén

Country: Spain
City: La Coruña

Address: R. Filantropía, 3, 15011, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Update on Assisted Reproduction
- Hospitals and Health Services Management

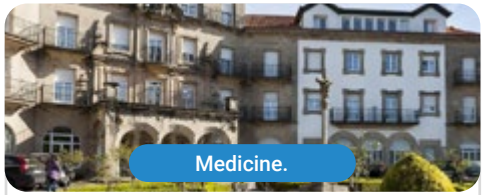
Hospital HM Rosaleda

Country: Spain
City: La Coruña

Address: Rúa de Santiago León de Caracas, 1, 15701, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Hair Transplantation
- Orthodontics and Dentofacial Orthopedics



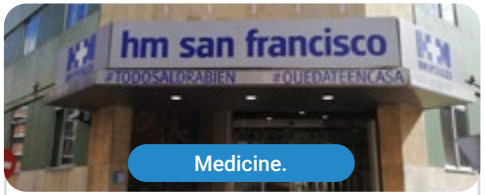
Hospital HM La Esperanza

Country: Spain
City: La Coruña

Address: Av. das Burgas, 2, 15705, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Oncology Nursing
- Clinical Ophthalmology



Hospital HM San Francisco

Country: Spain
City: León

Address: C. Marqueses de San Isidro, 11, 24004, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Update in Anesthesiology and Resuscitation
- Trauma Nursing

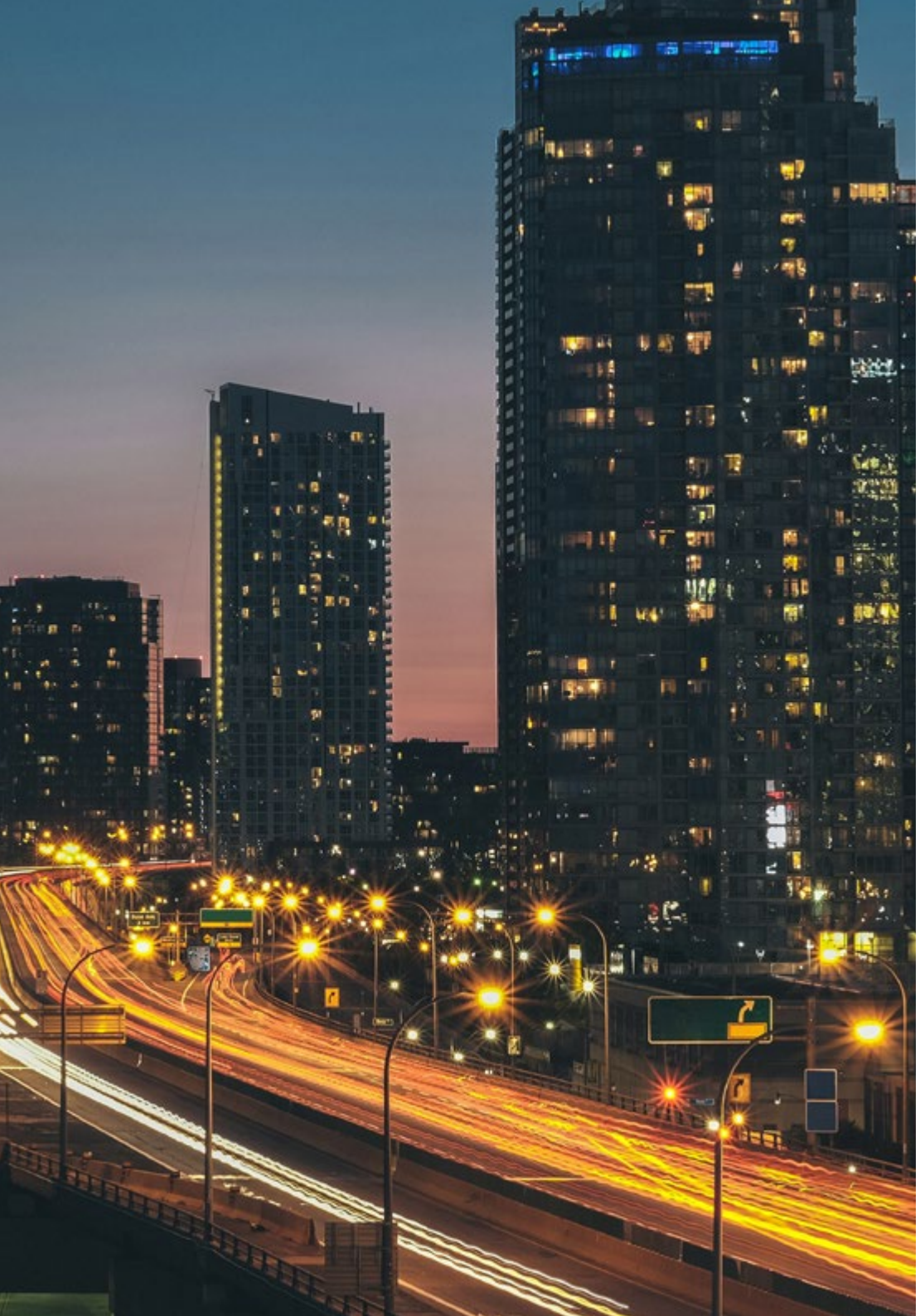
Hospital HM Nou Delfos

Country: Spain
City: Barcelona

Address: Avinguda de Vallcarca, 151, 08023 Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Aesthetic Medicine
- Clinical Nutrition in Medicine



Hospital HM Madrid

Country: Spain
City: Madrid

Address: Pl. del Conde del Valle de Súchil, 16, 28015, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Palliative Care
- Anaesthesiology and Resuscitation

Hospital HM Montepríncipe

Country: Spain
City: Madrid

Address: Av. de Montepríncipe, 25, 28660, Boadilla del Monte, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Palliative Care
- Aesthetic Medicine

Hospital HM Torrelodones

Country: Spain
City: Madrid

Address: Av. Castillo Olivares, s/n, 28250, Torrelodones, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Anaesthesiology and Resuscitation
- Palliative Care

Hospital HM Sanchinarro

Country: Spain
City: Madrid

Address: Calle de Oña, 10, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Anaesthesiology and Resuscitation
- Palliative Care

Hospital HM Puerta del Sur

Country: Spain
City: Madrid

Address: Av. Carlos V, 70, 28938, Móstoles, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Palliative Care
- Clinical Ophthalmology

Hospital HM Vallés

Country: Spain
City: Madrid

Address: Calle Santiago, 14, 28801, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Gynecologic Oncology
- Clinical Ophthalmology

Policlínico HM Cruz Verde

Country: Spain
City: Madrid

Address: Plaza de la Cruz Verde, 1-3, 28807, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Advanced Clinical Podiatry
- Optical Technologies and Clinical Optometry

Policlínico HM Distrito Telefónica

Country: Spain
City: Madrid

Address: Ronda de la Comunicación, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Optical Technologies and Clinical Optometry
- General and Digestive System Surgery

Policlínico HM Gabinete Velázquez

Country: Spain
City: Madrid

Address: C. de Jorge Juan, 19, 1° 28001, 28001, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Clinical Nutrition in Medicine
- Aesthetic Plastic Surgery

Policlínico HM Moraleja

Country: Spain
City: Madrid

Address: P.º de Alcobendas, 10, 28109, Alcobendas, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Rehabilitation Medicine in Acquired Brain Injury Management

Policlínico HM Rosaleda Lalín

Country: Spain
City: Pontevedra

Address: Av. Buenos Aires, 102, 36500, Lalín, Pontevedra

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:
- Advances in Hematologyand Hemotherapy
- Neurological Physiotherapy

09

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.

According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

The effectiveness of the method is justified by four fundamental achievements:

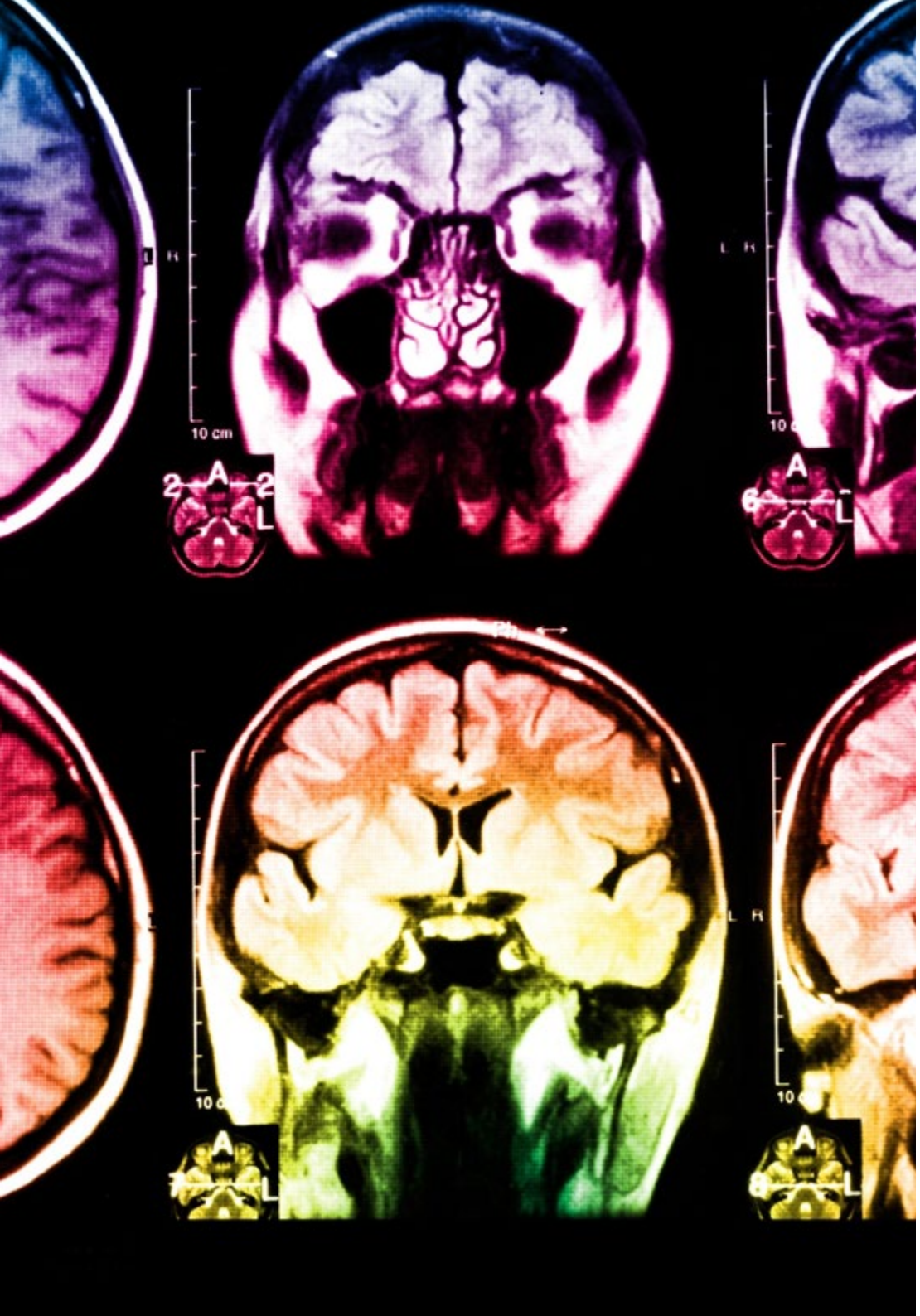
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.

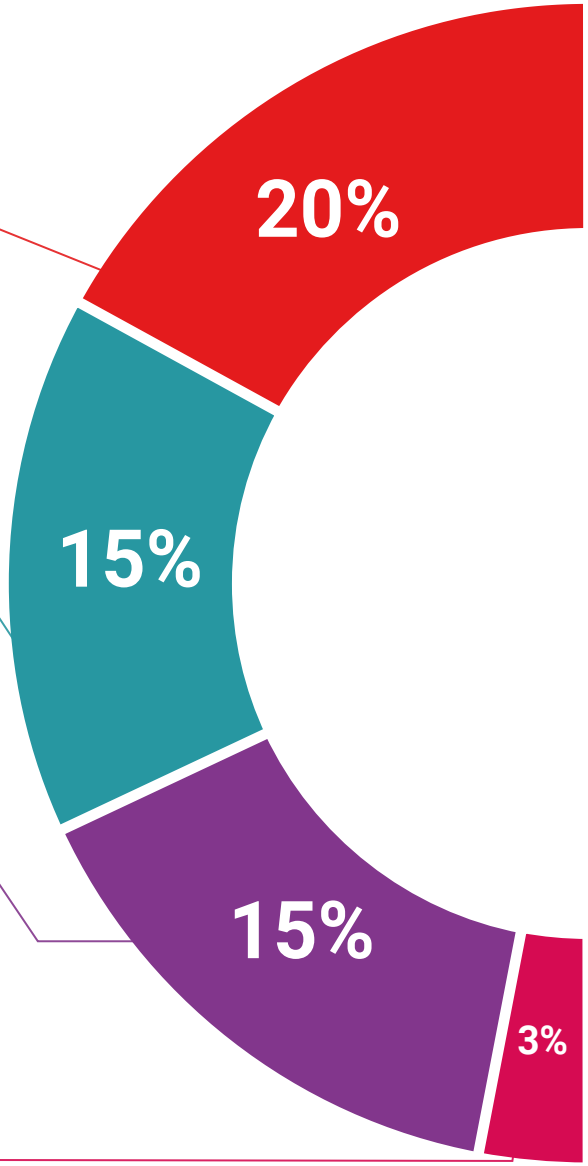
Interactive Summaries

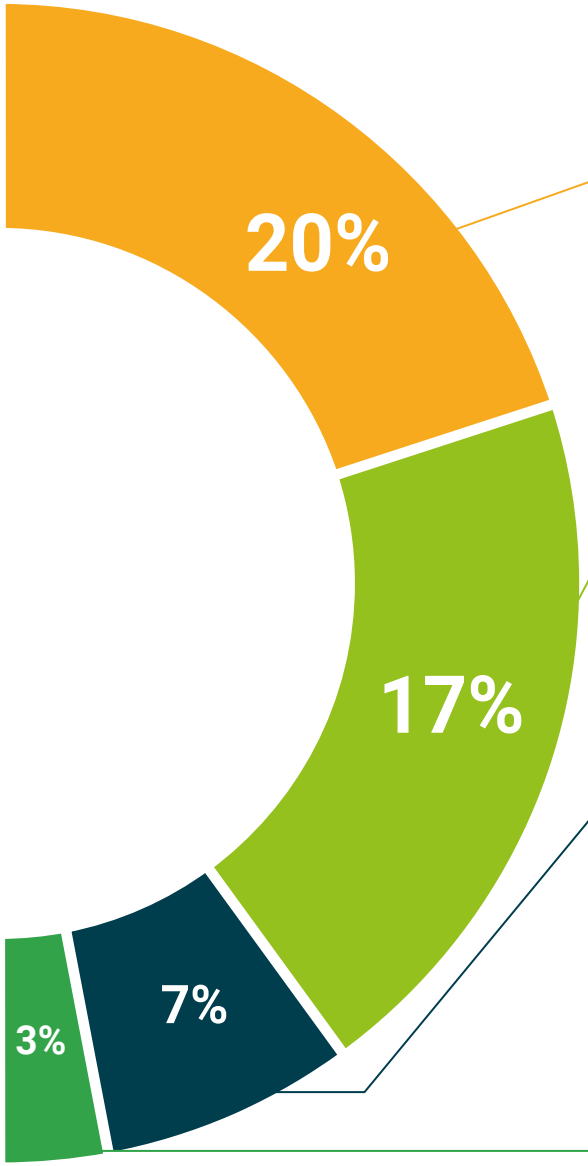
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

10

Certificate

The Hybrid Professional Master's Degree in Optical Technologies and Clinical Optometry and guarantees you, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree diploma issued by TECH Global University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This program will allow you to obtain your **Hybrid Professional Master's Degree diploma in Optical Technologies and Clinical Optometry** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

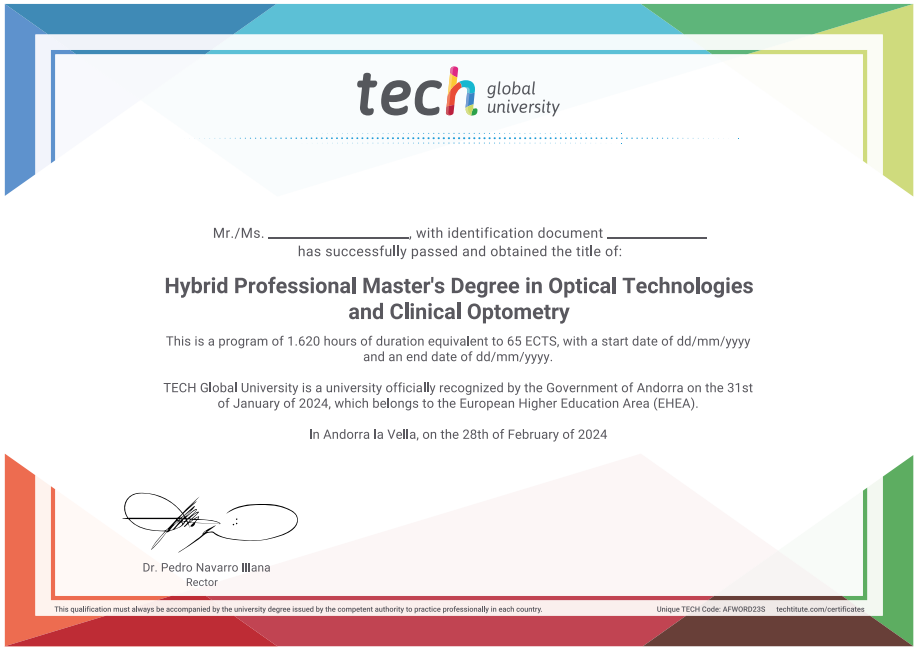
Title: **Hybrid Professional Master's Degree in Optical Technologies and Clinical Optometry**

Course Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Hybrid Professional Master's Degree in Optical Technologies and Clinical Optometry

This is a program of 1.620 hours of duration equivalent to 65 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Rector

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


Hybrid Professional Master's Degree in Optical Technologies and Clinical Optometry

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	5
Master's Degree Thesis (MDT)	0
Total	65

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery	6	CO
1º	Biostatistics for Optics and Optometry Research	6	CO
1º	Vision Therapy in Clinical Practice	6	CO
1º	Metrics and Measures of Visual Quality	6	CO
1º	Latest Advances in the Management of Amblyopia	6	CO
1º	Low Vision and Geriatric optometry	6	CO
1º	Pharmacology of Ophthalmic Use	6	CO
1º	Latest Advances in Optical and Optometric Instrumentation	6	CO
1º	Geriatric Optometry	6	CO
1º	Advanced Contactology	6	CO

Dr. Pedro Navarro Illana
Rector

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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Hybrid Professional Master's Degree

Optical Technologies and Clinical Optometry

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

60 + 5 créditos ECTS

Hybrid Professional Master's Degree

Optical Technologies and Clinical Optometry

tech global university