Professional Master's Degree
Refractive Surgery

tech technological university

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Professional Master's Degree
Refractive Surgery

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/pk/medicine/master/master-refractive-surgery**

Index

01

Introduction

The high technology applied to the field of Ophthalmology has made it possible to achieve maximum levels of precision, safety and efficiency in surgical treatments, especially in the treatment of Myopia, Astigmatism and Hyperopia. In this sense, specialists must be aware of the advances in laser equipment and in the evaluation procedures of patients suitable for Refractive Surgery. For this reason, TECH Technological University has designed this 100% online degree that will lead the graduate to obtain a complete update in decision algorithms, PRK, LASIK, Femtolasik, Smile techniques and postoperative management. All this, in addition to a syllabus prepared by distinguished experts with numerous surgeries performed in hospitals around the world.

A 100% online Professional Master's Degree that allows you to keep up to date with the evolution of Refractive surgical techniques"

One of the most demanded interventions by patients in the field of Ophthalmology after cataracts is Refractive Surgery, which allows them to recover their vision and do without glasses or contact lenses. Thus, since Dr. Pallikares operated on patients in Greece using this surgical technique in the 1990s, its improvement and the discovery of new laser equipment has made it a growing subspecialty.

This is why keeping abreast of advances in this field has become indispensable for the daily practice of ophthalmologists. Thus, to promote this updating process, TECH Technological University has created this Professional Master's Degree, which covers, over 12 months, the most rigorous and exhaustive information on technical and procedural advances in this field.

To achieve this update, this academic institution has selected an incomparable faculty of experts with accumulated clinical, research and technical experience. Thus, at the end of the 1,500 teaching hours, the graduate will be aware of the future challenges of corneal refractive surgery, on crystalline lens or with phakic lenses, in addition to the existing protocols for patient selection and management of possible complications.

In addition, this degree will become more attractive thanks to the video summaries of each topic, the videos in focus or the complementary readings which, together with the Relearning method, will favor the consolidation of the concepts addressed and reduce the hours of memorization.

The professional is thus presented with an exceptional opportunity for an effective update through a first class and flexible program. All you need is an electronic device with an Internet connection to access, at any time of the day, to the syllabus hosted on the virtual platform. A convenience that will also enable graduates to reconcile their work and/or personal life with an avant-garde degree.

This **Professional Master's Degree in Refractive Surgery** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of case studies presented by experts in Ophthalmology and Refractive Surgery
- 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
- Practical exercises where self-assessment can be used to improve learning
- Its special emphasis on innovative methodologies
- 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

TECH Technological University adapts to you and that is why it has designed a flexible degree program that adapts to your daily professional schedule”

Thanks to this university degree you will be up to date with the current surgical techniques PRK, LASIK, Femtolasik and Smile"

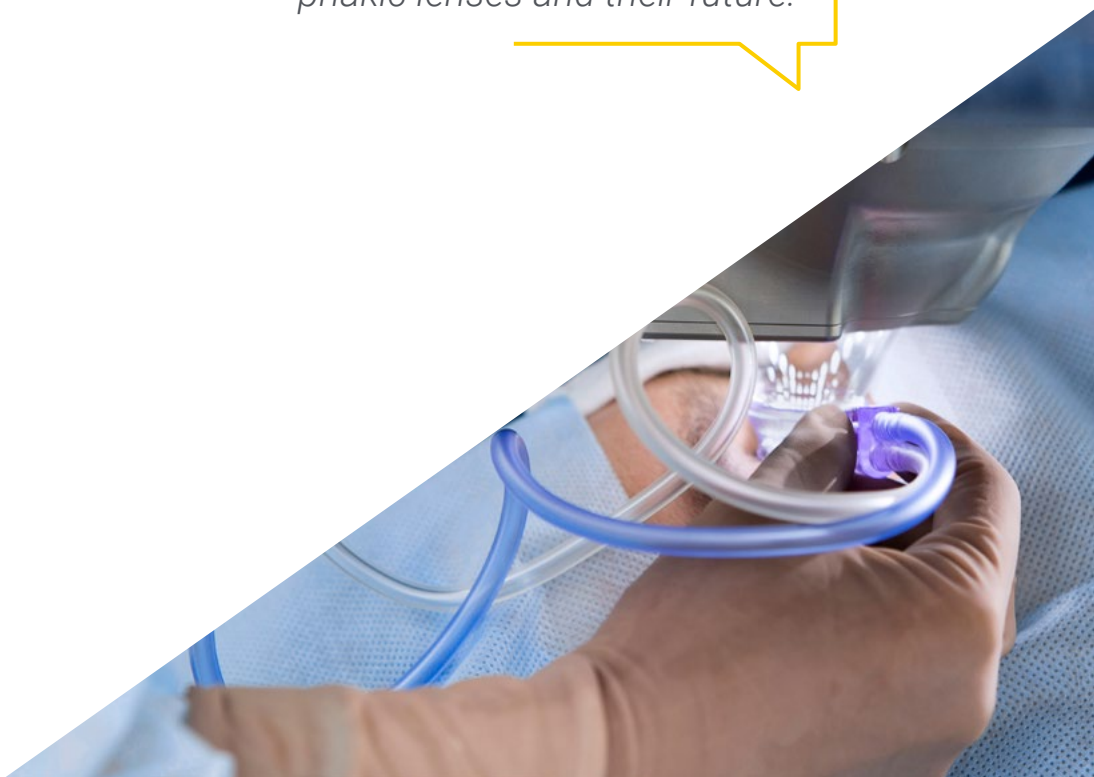
It delves into the different ocular pathologies that can modify, delay or prevent the inclusion of a patient as suitable or unsuitable for surgery.

A comprehensive program that will keep you abreast of the latest innovations in phakic lenses and their future.

The program's teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.



02

Objectives

The syllabus of this university program has been designed so that students are aware of the approach to the main refractive defects that can be corrected, the technical advances and the protocols applied for the selection of the optimal candidate for surgical intervention. In order to achieve this goal successfully, TECH Technological University provides a theoretical-practical syllabus that includes simulations of clinical case studies, provided by an excellent teaching team with extensive professional experience in this field.

Get a theoretical-practical and very useful approach to your surgical practice with phakic lenses thanks to the clinical cases of this program"

General Objectives

- Delve into the basic principles of optics, as well as refractive defects and their treatment possibilities
- Describe the corneal morphology and function on which much of Refractive Surgery is applied
- To deepen in the operation of an excimer laser and what are the fundamental characteristics of some excimer platforms
- To investigate the indications and contraindications of Refractive Surgery, as well as the algorithms used for the surgery
- Obtain an update on the studies to be performed on patients in order to correctly assess the indication for surgery
- Describe the processes of preparation for Refractive Surgery
- Go deeper on the different techniques applied on the cornea for the correction of refractive errors
- Identify the surgeries that can be performed on the crystalline lens to eliminate the patients' graduation defects
- Be aware of the different lenses that are used for this surgery without acting on the cornea or lens
- Go deeper into the relationship between Glaucoma and Refractive Surgery

Specific Objectives

Module 1. Optics and refractive errors: therapeutic options

- Go deeper into the anatomy and physical optics of the human eye
- Point out the principles of geometrical optics
- Update the knowledge of the methods of measurement and diagnosis of refractive defects
- Go deeper into the options for correcting these defects

Module 2. Topographic, Aberrometric and Biomechanical Study of the Human Cornea

- Delve into the morphology and functional structure of the cornea
- Describe the principles of corneal topography and how it is measured
- Go deeper into Corneal aberrometry and how it is quantified with the diagnostic means
- Relate what Corneal biomechanics is to concepts such as Corneal hysteresis and how it is evaluated

Module 3. Excimer laser: platforms and operation

- Investigate the beginnings of the excimer laser, as well as its evolution since the beginning of its use in Ophthalmology
- Point out how the treatment works and what actions it generates in the human cornea
- Delve into the basic mathematics of excimer laser surgery

Module 4. Decision Algorithms in Refractive Surgery

- Identify the decision algorithms in the inclusion or not of a patient for Refractive Surgery
- Delve into the dioptric limits of each refractive defect for refractive surgery
- Point out the ocular pathological processes that will cause the surgery to be delayed, modified in its technique or not performed

Module 5. Preoperative Evaluation for Refractive Surgery

- Delve into in the indications and contraindications for surgery, both ocular, systemic and familial
- Describe the pre-surgery tests that are performed to obtain the suitability of a patient prior to surgery

Module 6. Surgical preparation and instrumentation

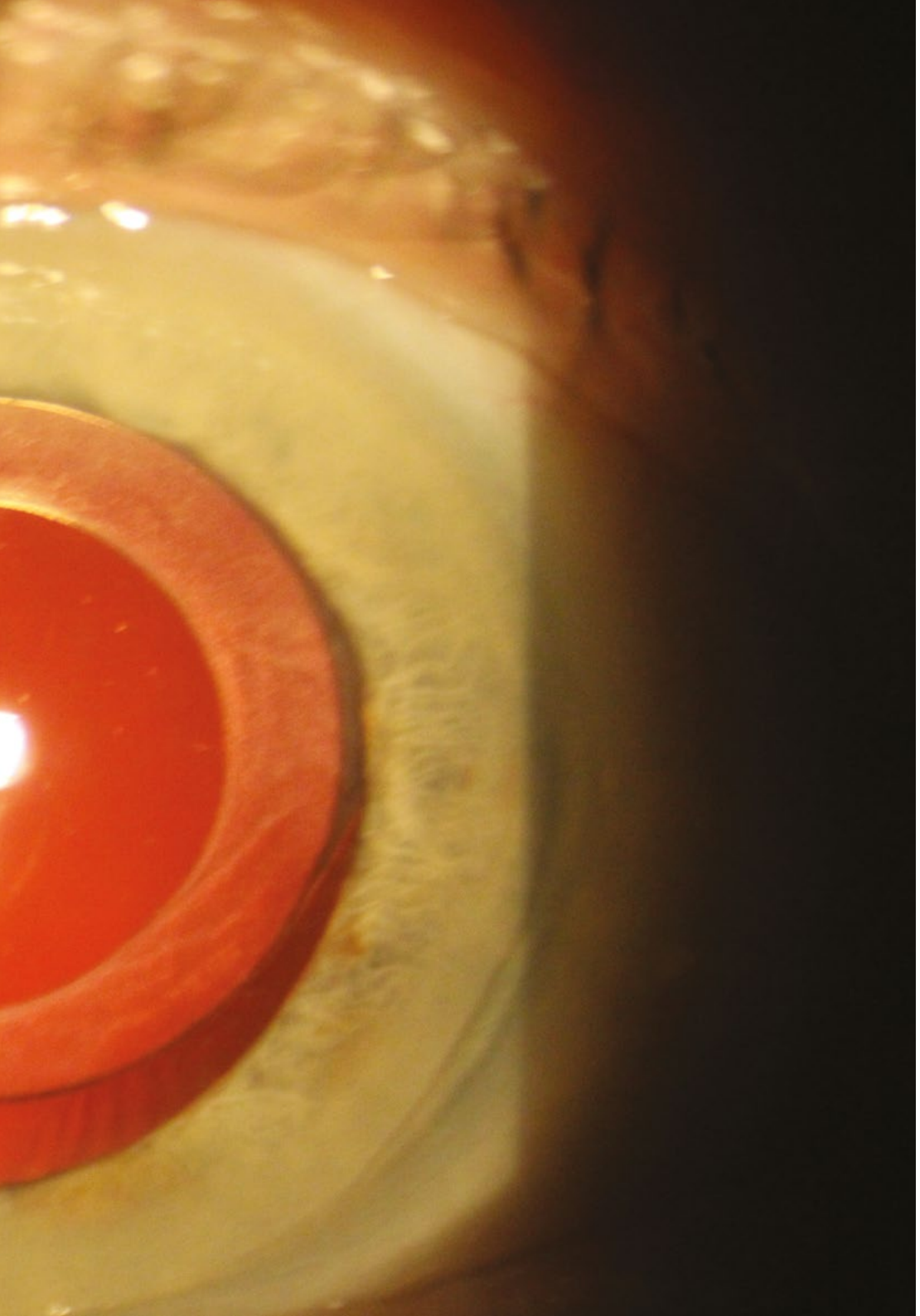
- Update knowledge on the management of the patient after discharge from the office until the day of surgery
- Describe how to prepare the patient and eyes before surgery
- Describe the surgical process including laser management, surgery and postoperative process
- Update knowledge on femtosecond laser operation
- Point out how the excimer performs the ablation in each refractive defect

Module 7. Corneal Refractive Surgery

- Delve into the cornea, the tissue on which the excimer acts
- Update knowledge on techniques that can be lasered on the cornea with both microkeratome and femtosecond
- Address the complications of surgery, as well as the need for reoperation on occasion
- Identify the action to be taken when using lasers in special situations

Module 8. Refractive Lens Surgery

- Delve into the anatomy and function of the crystalline lens
- Delve into the concept of presbyopia and why it occurs
- Describe the surgical techniques, as well as the calculation and choice of intraocular lenses
- Learn about surgical complications and complex cases



Module 9. Phakic lens surgery

- Delve into the history of phakic lenses and their evolution
- Identify the different models of lenses and how each one works
- Go deeper into the surgical complications of the same

Module 10. Refractive Surgery and Glaucoma

- Identify the clinical forms of Glaucoma
- Delve into how the diagnosis of Glaucoma is made
- Establish the relationship between Glaucoma and Corneal and Intraocular Refractive Surgery, as well as the follow-up of these patients

Incorporate the latest advances in refractive crystalline lens surgery into your practice"

03

Skills

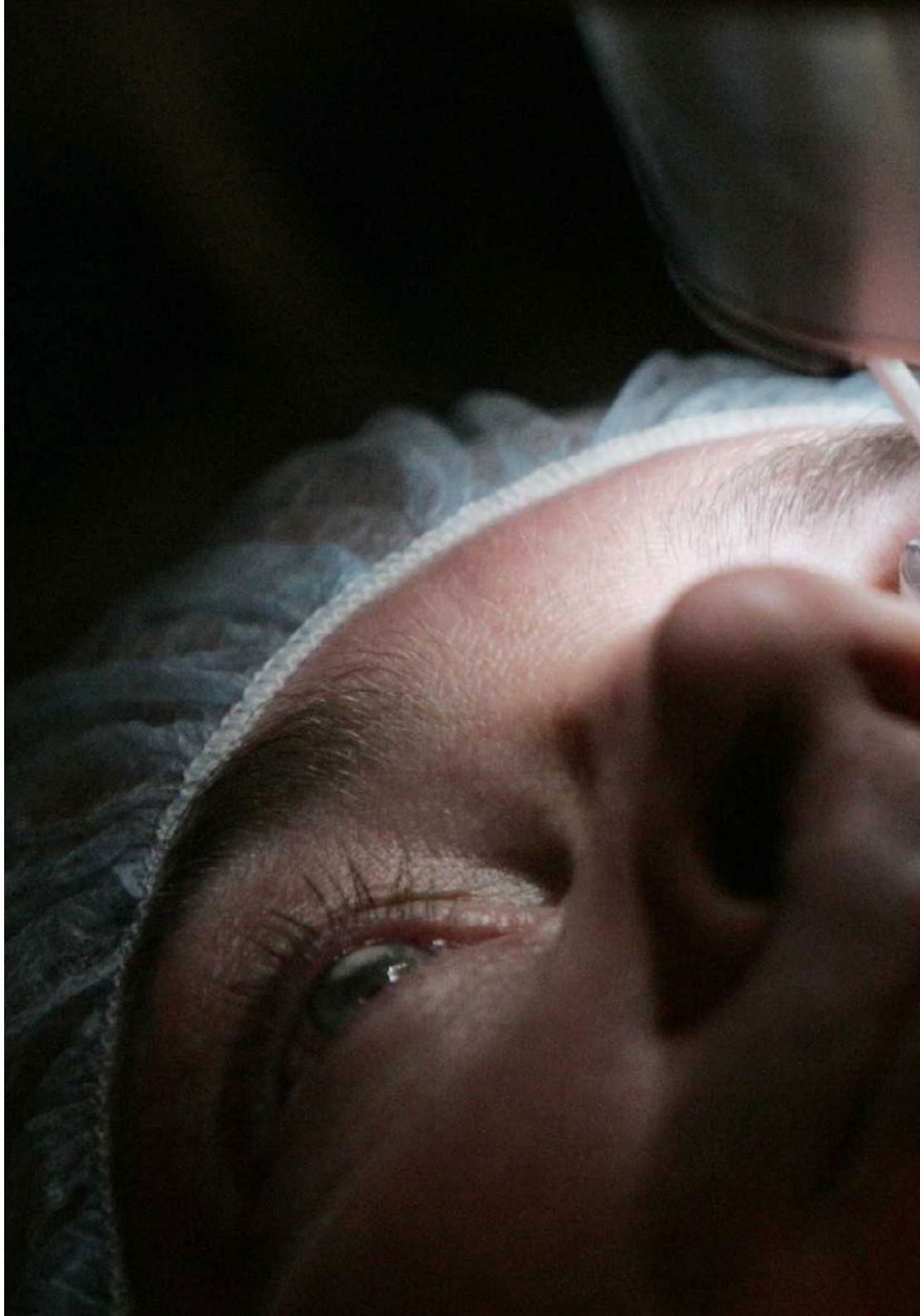
This Professional Master's Degree has been designed to raise the skills and abilities of specialists in the performance of Refractive Surgery, as well as in clinical and patient care throughout the process. These skills will be enhanced thanks to a program oriented to a complete update and with a focus on the updating of surgical techniques, the correct evaluation and selection of the patient and the information provided to the patient.

Enhance your skills to address the main complications of special cases with high Myopia, Hyperopia and Astigmatism"

General Skills

- Master the most advanced laser tools for the performance of Refractive Surgery
- Convey appropriate information to the patient about the advantages and disadvantages of certain techniques
- Address the main difficulties of surgical procedures in Refractive Surgery
- Perform successful patient care in preparation for surgery
- Select the most sophisticated lenses that meet the patient's expectations and needs
- Mastering the limits of the use of certain laser technology

Upgrade your skills with great specialists in Ophthalmologists in the use of excimer lasers"



Specific Skills

- To increase their capabilities for the management of patients presenting complications prior to surgery
- Apply the necessary surgical protocols for the performance of Refractive Surgery
- Implement the most effective treatment for patients with Glaucoma
- Perform the correct indication for phakic lens implantation
- Master current knowledge of stromal rings as an alternative to excimer lasers
- Identify what are and what are the pecauliarities of each of the main modern platforms used in Refractive Surgery
- Evaluate the risks and postoperative care for laser touch-up procedures
- Perform an adequate procedure for the patient's entrance to the operating room
- Successful follow-up of the patient with Glaucoma
- Propose alternatives to the treatment proposed by the patient

04

Course Management

One of the elements that distinguishes this university degree is its excellent teaching staff made up of true experts in Refractive Surgery with accumulated professional experience in first level hospitals. Undoubtedly, a team of distinguished specialists that will provide the graduate with a complete update, with the most rigorous scientific information on the techniques and technological equipment used in this field. In addition, thanks to their proximity, students will be able to resolve any doubts they may have about the content of this program.

It achieves a first level update thanks to the syllabus elaborated by renowned experts in the field of Refractive Surgery"

Management

Dr. Alaskar Alani, Hazem

- Ophthalmologist at Oftalvist Málaga
- Surgical Director of Hospital Universitario Poniente
- Head of the Ophthalmology Diseases Department, Poniente Hospital
- Specialist in Ophthalmology at the Puerta De las Nieves University Hospital
- Degree in Medicine and Surgery from the University of Valencia
- Doctor of Medicine and Surgery from the University of Almería
- Master's Degree in Health Management and Planning,European University of Madrid
- Master's Degree in Ophthalmology Medicine from Cardenal Herrera University
- Member of: European Retina Society EURETINA, SEDISA, The Spanish Society of Health Managers, Fellow of the European Board of Ophthalmology, FEBO European Society of Cataract and Refractive Surgery, ESCRS, Spanish Society of Implanto Refractive Surgery SECOIR, Andalusian Society of Ophthalmology SAO, Spanish Society of Retina and Vitreous SERV, Fellow of the European School of Retina and Vitreous Surgery EVRS

Mr. Román Guindo, José Miguel

- Ophthalmologist at Oftalvist Málaga
- Ophthalmologist at Vissum Madrid
- Ophthalmologist at Dubai International Medical Center
- Medical Director of Vissum Madrid Sur and Vissum Málaga
- Specialist in Ophthalmology at the San Carlos Clinical Hospital
- Doctor in Ophthalmology
- Degree in Medicine and Surgery General: from the Autonomous University of Madrid
- Member of: Spanish Society of Ophthalmology, International Society of Ocular Inflammation, International Society of Ocular Inflammation

Professors

Mr. Sánchez, Txema

- Clinical Application Specialist in the Refractive Department of Carl Zeiss Meditec
- Specialist technician in the Refractive Department at Carl Zeiss Meditec
- Specialist technician in the excimer laser department of TOPCON
- Sound Technician at TOPCON
- Electromedical technician in the company Gestión Técnica Hospitalaria
- Superior Technician in Industrial Electronics by the Polytechnic Institute

Dr. Morbelli Bigiolli , Agustín Francisco

- Director Dr. Morbelli Ophthalmology Center
- Eye Health General Ophthalmology Physician
- Physician of the Cornea and Refractive Surgery Service of the Vision Institute
- Ad Honorem Professor of Ophthalmology UDH UBA, Bernardino Rivadavia Hospital, Ophthalmology Service, Rivadavia Hospital
- University Specialist in Ophthalmology SAO
- Degree in Medicine from Maimonides University
- Master's Degree in Ophthalmology from the CEU University

Dr. Castro De Luna, Gracia

- Specialist in Ophthalmology at the Virgen Macarena University Hospital in Seville
- Founder of Startup Neurobia Research on neurorehabilitation with Virtual Reality
- Principal investigator of a research project on custom contact lens design based on corneal reconstruction algorithm
- Associate Professor in the Nursing, Physiotherapy and Medicine Department at the University of Almería
- Co-author of a patent on software for virtual neurorehabilitation and
- Co-author of a patent on corneal surface reconstruction
- Royal Academy of Oriental Medicine Award for best scientific publication
- Award of the College of Physicians of Almeria to the best publication in specialized care
- Award of the Social Council of the University of Almeria to the best entrepreneurial initiative
- ALMUR Business Innovation Award
- Degree in Medicine and Surgery from the University of Granada
- Grade in Pharmacy Medicine from the Alfonso X El Sabio University of Madrid
- Doctor of Medicine from the University Miguel Hernández
- Diploma in Epidemiology and Clinical Research from the Andalusian School of Public Health

Dr. Cuevas Santamaría, Diego

- Ophthalmology Specialist in the Ophthalmology Clinical Management Unit of the Poniente Hospital
- Specialist Doctor in Ophthalmology, Virgen del Rocio University Hospital
- Ophthalmologist at Oftalvist Almeria Clinic
- Specialist in the Ophthalmology Service of the Dr. Pascual Hospital
- Ophthalmological at Instituto Tumors VISSUM
- Graduate in Medicine and Surgery from the University of Malaga
- PhD in Medical Science University of Almeria
- Master's Degree in Medical Management and Clinical Management by the UNED
- Master's Degree in Ophthalmology from CEU San Pablo University
- University Expert in Public Health and Health Promotion by the University of Almeria
- Postgraduate Diploma in Uveitis and Retina from the Autonomous University of Madrid
- Member of: Sociedad Española de Oftalmología, American Academy of Ophthalmology, Grupo Español de Superficie Ocular (GESOC), Sociedad Andaluza de Oftalmología, Sociedad Española de Cirugía Implanto Refractiva

05

Structure and Content

Thanks to the effectiveness of the Relearning method, the professional who takes this university degree will reduce the long hours of study and will consolidate in a much more agile way the most important concepts of this program. In this way, you will get a complete update in 12 months of Refractive Surgery and the approach of the main techniques and pathologies treated by this procedure. In addition, graduates have access to innovative didactic material housed in the Virtual Library, which they can access comfortably at any time of the day from a digital device with Internet connection.

Video clips, videos in detail and the breadth of teaching resources of this degree will be at your disposal 24 hours a day"

Module 1. Optics and refractive errors: therapeutic options

1.1. Optics of the Human Eye
- 1.1.1. General Aspects
- 1.1.2. Cornea
- 1.1.3. Lens
- 1.1.4. Wavefront
- 1.1.5. Reflection and refraction applied
- 1.1.6. Interference, diffraction and polarization

1.2. Geometric Optics
- 1.2.1. Fundamental laws of geometrical optics
- 1.2.2. Characterization of optical systems
- 1.2.3. Ray Tracing
- 1.2.4. Optical prisms

1.3. Examination of refractive errors
- 1.3.1. Schiascopy
- 1.3.2. Cylinder conversion
- 1.3.3. Spherical equivalent
- 1.3.4. Crossed cylinders

1.4. Diagnostic methods and measures I
- 1.4.1. Quantification of visual acuity (VA)
- 1.4.2. Optotypes and notation for distance, intermediate and near vision
- 1.4.3. Blur curves
- 1.4.4. Evaluation of visual quality

1.5. Diagnostic methods and measures II
- 1.5.1. Contrast Sensitivity
- 1.5.2. Glare measurements. Halometry
- 1.5.3. Concepto de Point Spread Function (PSF) y Modulation Transfer Function (MTF)
- 1.5.4. Sistema de análisis de la calidad óptica

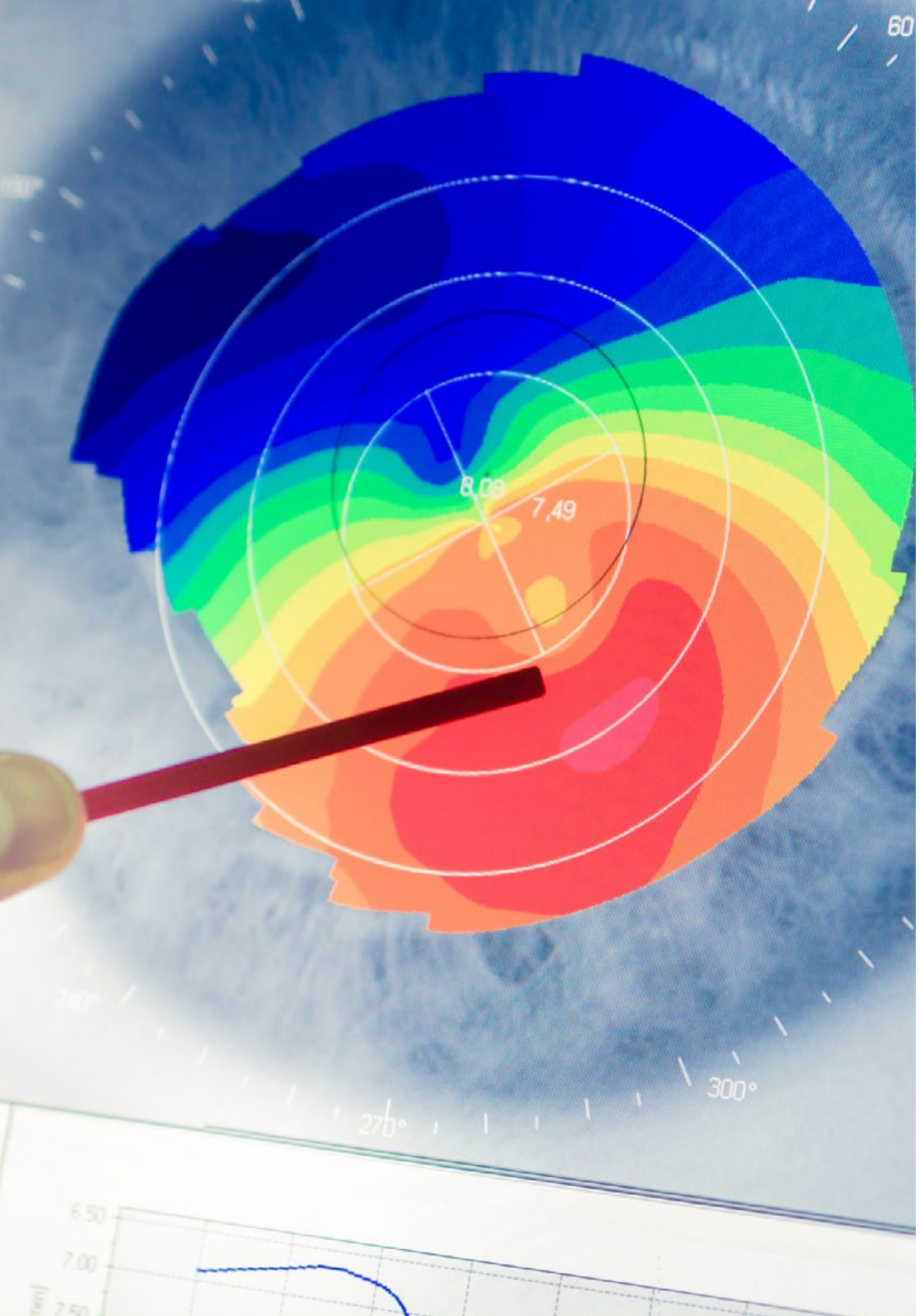
1.6. Diagnostic methods and measures III
- 1.6.1. Color vision
- 1.6.2. Pupil and depth of field and depth of focus
- 1.6.3. Importance of the tear and the ocular surface in visual quality
- 1.6.4. Importance of vitreous and retina in visual quality

1.7. Myopia
- 1.7.1. Classification
- 1.7.2. Etiology
- 1.7.3. Optical treatment
- 1.7.4. Medical- Surgical Treatment

1.8. Hyperopia
- 1.8.1. Classification
- 1.8.2. Etiology
- 1.8.3. Optical treatment
- 1.8.4. Medical- Surgical Treatment

1.9. Astigmatism
- 1.9.1. Classification
- 1.9.2. Etiology
- 1.9.3. Optical treatment
- 1.9.4. Medical- Surgical Treatment

1.10. Presbyopia
- 1.10.1. Etiology
- 1.10.2. Optical treatment
- 1.10.3. Medical Treatment
- 1.10.4. Surgical Management



Module 2. Topographic, Aberrometric and Biomechanical Study of the Human Cornea

2.1. Características morfoestructurales de la córnea
- 2.1.1. Corneal Morphology
- 2.1.2. Corneal Histology
- 2.1.3. Factors influencing corneal morphostructure
- 2.1.4. Evolution of Corneal Morphostructure

2.2. Corneal Topography
- 2.2.1. Topography concept
- 2.2.2. Corneal Topography based on Placido Discs
- 2.2.3. Scheimpflug camera based topography
- 2.2.4. Practical application of corneal topography to refractive surgery

2.3. Aberrometry
- 2.3.1. Aberrometry concept
- 2.3.2. Classification of Optical Aberrations
- 2.3.3. Types of aberrometers
- 2.3.4. Practical application of aberrometry to Refractive Surgery

2.4. Asphericity
- 2.4.1. Asphericity concept
- 2.4.2. Corneal eccentricity
- 2.4.3. Cornea Oblata and Prolata
- 2.4.4. Practical application of asphericity to Refractive Surgery

2.5. Corneal Biomechanics
- 2.5.1. Concept of corneal biomechanics
- 2.5.2. Factors influencing corneal biomechanics
- 2.5.3. Corneal tissue: Structure, composition and properties
- 2.5.4. Biomechanical modeling of the cornea

2.6. Exploration of corneal biomechanics
- 2.6.1. Bidirectional dynamic application ORA Systems
- 2.6.2. Confocal Microscopy
- 2.6.3. Anterior Segment Optical Coherence Tomography
- 2.6.4. Analysis of deformation after air pulse by means of Scheimpflug chamber

2.7. Corneal biomechanics study
- 2.7.1. Ocular Response Analyzer
- 2.7.2. Concept of Corneal Hysteresis
- 2.7.3. Corvis ST
- 2.7.4. Measurement parameters with Corvis ST

2.8. Characterization of biomechanical parameters: correlation with topographic and aberrometric parameters
- 2.8.1. Correlation of aberrometric and topographic parameters with corneal biomechanics
- 2.8.2. Combined topographic and biomechanical indices
- 2.8.3. Biomechanics of the healthy cornea
- 2.8.4. Biomechanics of Corneal Ectasia

2.9. Corneal Biomechanics and Intraocular Pressure
- 2.9.1. Corneal tonometry and biomechanical properties of the cornea
- 2.9.2. New generation of tonometers
- 2.9.3. Corneal Biomechanics and Glaucoma
- 2.9.4. Biomechanical analysis of the optic nerve

2.10. Practical application of corneal biomechanics in refractive surgery
- 2.10.1. Biomechanics and Corneal Refractive Surgery PRK technique
- 2.10.2. Biomechanics and Corneal Refractive Surgery Femtolasik Technique
- 2.10.3. Biomechanics and Corneal Refractive Surgery Smile Technique
- 2.10.4. Biomechanics and Intraocular Refractive Surgery

Module 3. Excimer laser: platforms and operation

3.1. Physical principles of the excimer laser
- 3.1.1. Concept: Laser and Excimer
- 3.1.2. Wave Length
- 3.1.3. Description of the excimer laser
- 3.1.4. Emission systems

3.2. Evolution of Lasik
- 3.2.1. Introduction
- 3.2.2. Keratophakia
- 3.2.3. Epikeratophakia
- 3.2.4. Automated in situ lamellar keratomileusis

3.3. Tissue effects of the excimer laser
- 3.3.1. Introduction
- 3.3.2. Experimental Studies
- 3.3.3. Standard Lasik
- 3.3.4. Complicated Lasik

3.4. Scarring changes
- 3.4.1. Introduction
- 3.4.2. Changes in the tear film
- 3.4.3. Changes in the corneal epithelium
- 3.4.4. Changes in the corneal stroma

3.5. Mathematics for Lasik
- 3.5.1. Ablation depth per diopter
- 3.5.2. Dogmas of lasik
- 3.5.3. Mathematics for primary Lasik
- 3.5.4. Mathematics for Lasik retouching

3.6. Lasik predictive formulas
- 3.6.1. Pretreatment protocols
- 3.6.2. Ablation protocols: single and multimodal zone
- 3.6.3. Limits of correction for primary lasik
- 3.6.4. Adjustment factors for refractive correction with lasik

3.7. Amaris 1050 RS Laser
- 3.7.1. Characteristics and Techniques
- 3.7.2. Eyetracker 7D
- 3.7.3. Versatile software and Smart surfACE
- 3.7.4. Advantages

3.8. MEL 90 Laser
- 3.8.1. Characteristics and Techniques
- 3.8.2. Flexibility
- 3.8.3. Triple A
- 3.8.4. Presbyond

3.9. Wavelight EX 500 Laser
- 3.9.1. Characteristics and Techniques
- 3.9.2. CustomQ Ablation
- 3.9.3. Transepithelial PRK
- 3.9.4. READ Treatment

3.10. Femtosecond laser
- 3.10.1. Characteristics and Techniques
- 3.10.2. Function and advantages over microkeratomes
- 3.10.3. Ziemer Z8 and Catalys
- 3.10.4. Wavelight FS200, IFS Advanced y Victus

Module 4. Decision Algorithms in Refractive Surgery

4.1. General decision algorithm in Refractive Surgery
- 4.1.1. Refractive stability
- 4.1.2. Contraindications
- 4.1.3. Background
- 4.1.4. Ametropia algorithm

4.2. Refractive stability
- 4.2.1. Myopia
- 4.2.2. Hyperopia
- 4.2.3. Astigmatism
- 4.2.4. Selection Criteria

4.3. Contraindications and systemic medication
- 4.3.1. Absolute general contraindications
- 4.3.2. Relative general contraindications
- 4.3.3. Systemic mediation: Tear and cornea
- 4.3.4. Systemic medication Pupil and refractive alteration

4.4. Conjunctivopalpebral pathology
- 4.4.1. Stye
- 4.4.2. Chalation
- 4.4.3. Allergy
- 4.4.4. Pathology

4.5. Corneouveal pathology
- 4.5.1. Leukomas
- 4.5.2. Acute inflammations
- 4.5.3. Active uveitis
- 4.5.4. Inactive uveitis

4.6. Peripheral Corneal Ectasias and Ulcers
- 4.6.1. Keratoconus/ Pellucid marginal degeneration
- 4.6.2. After Lasik
- 4.6.3. Infectious-inflammatory ulcers
- 4.6.4. Dystrophies

4.7. Dry eyes
- 4.7.1. Indications for dryness assessment
- 4.7.2. Schirmer y Tiempo de ruptura (BUT)
- 4.7.3. Rose of Bengal
- 4.7.4. Lasik and dry eye

4.8. Binocular vision impairment
- 4.8.1. Anisometropia
- 4.8.2. Forias
- 4.8.3. Trophies
- 4.8.4. Amblyopia

4.9. Intraocular Pressure Alteration (IOP)
- 4.9.1. IOP considerations
- 4.9.2. Ocular Hypertension
- 4.9.3. Glaucoma
- 4.9.4. Future assessments of IOP

4.10. Algorithm in ametropia and pediatrics
- 4.10.1. Myopia
- 4.10.2. Hyperopia
- 4.10.3. Astigmatism
- 4.10.4. Pediatric Refractive Surgery

Module 5. Preoperative Evaluation for Refractive Surgery

5.1. Patient selection for Refractive Surgery
- 5.1.1. Age
- 5.1.2. Refractive defects
- 5.1.3. Refractive stability
- 5.1.4. Presence of contraindications

5.2. Medical History
- 5.2.1. Current disease
- 5.2.2. Personal background
- 5.2.3. Family Background
- 5.2.4. Previous surgeries

5.3. Ophthalmologic History
- 5.3.1. History of previous procedures
- 5.3.2. History of personal ocular pathologies
- 5.3.3. Family history of ocular pathologies
- 5.3.4. History of contraindication in another center

5.4. Medications
- 5.4.1. General Notions
- 5.4.2. Amiodarone
- 5.4.3. Venlafaxine
- 5.4.4. Sumatriptan
- 5.4.5. Isotrethionine

5.5. Expectations
- 5.5.1. Patient Expectations
- 5.5.2. What we can offer
- 5.5.3. Alternatives to the treatment proposed by the patient
- 5.5.4. Avoid problems

5.6. Physical Evaluation
- 5.6.1. Visual acuity
- 5.6.2. Keratometry
- 5.6.3. Biomicroscopy
- 5.6.4. Fundus

5.7. Preoperative studies
- 5.7.1. Ocular surface analysis
- 5.7.2. Corneal biomechanics analysis
- 5.7.3. Biometry and pupils
- 5.7.4. Optical Coherence Tomography (OCT)

5.8. Study of the retina
- 5.8.1. Papilla
- 5.8.2. Macula
- 5.8.3. Vascular Disorders
- 5.8.4. Peripheral retina

5.9. Other studies
- 5.9.1. Endothelial count
- 5.9.2. Meibography
- 5.9.3. Contrast Sensitivity
- 5.9.4. Aberrometry

5.10. Special considerations for each type of surgery
- 5.10.1. Laser Refractive Surgery
- 5.10.2. Refractive surgery with intraocular lens
- 5.10.3. Phaco-refractive surgery
- 5.10.4. Secondary implant surgery

Module 6. Surgical preparation and instrumentation

6.1. Nursing Patient Care
- 6.1.1. Staff
- 6.1.2. Informed Consent
- 6.1.3. Pre-Op Instructions
- 6.1.4. Preoperative mediation

6.2. Day of surgery
- 6.2.1. Signature of consent
- 6.2.2. Recovery room
- 6.2.3. Operating room clothing
- 6.2.4. Eye anesthesia

6.3. Entrance to operating room
- 6.3.1. Patient positioning
- 6.3.2. Anesthesia instillation
- 6.3.3. Periocular cleaning
- 6.3.4. Preparation of eyes

6.4. Surgical instrumentation
- 6.4.1. Blefarostat
- 6.4.2. Tweezers
- 6.4.3. Cannulas Irrigation
- 6.4.4. Hemostetas

6.5. Ocular fixation and corneal marking
- 6.5.1. Autofix
- 6.5.2. Uni or bilateral fixation
- 6.5.3. Visual axis marking
- 6.5.4. Corneal Markings

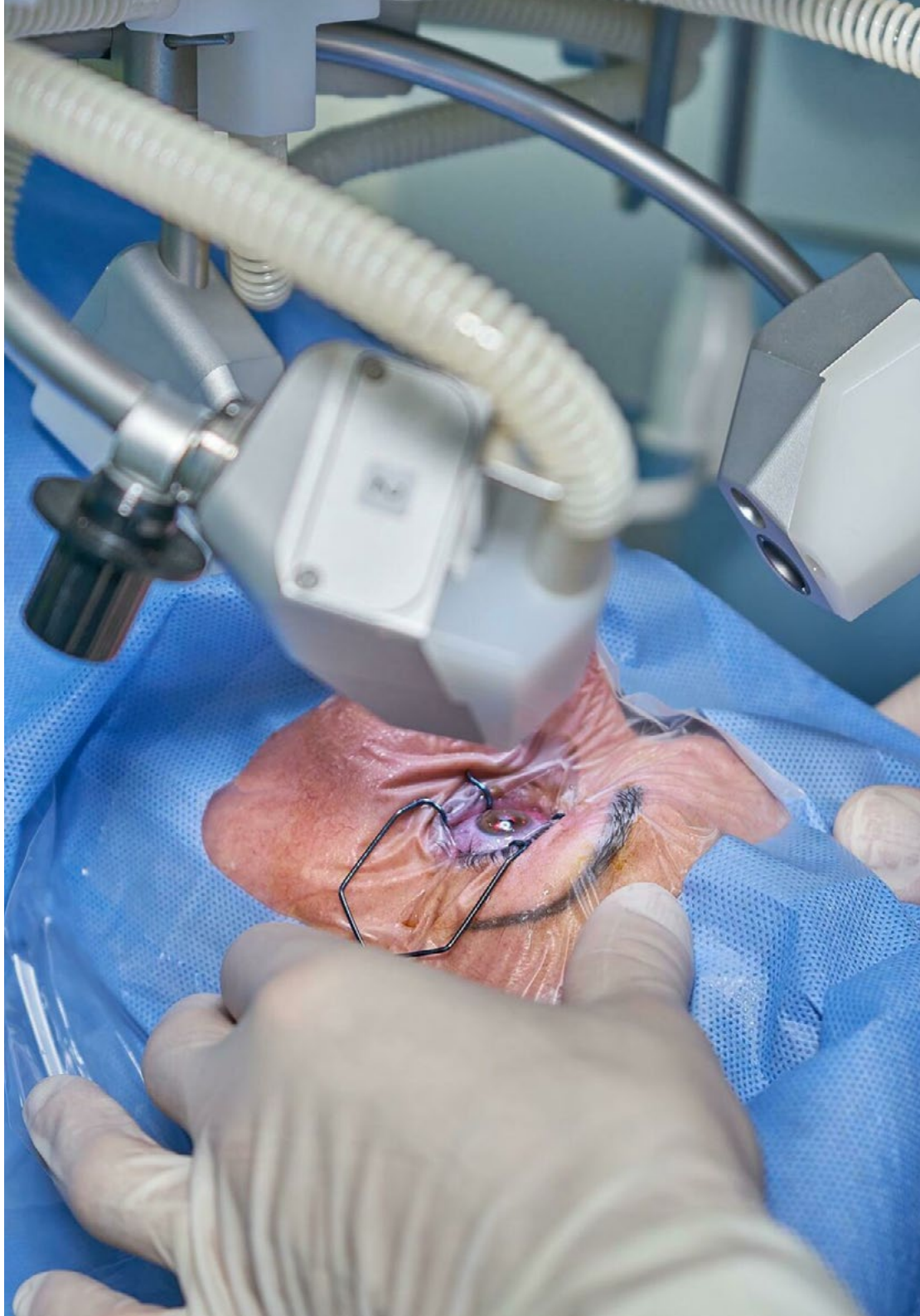
6.6. The Excimer Laser
- 6.6.1. Calibration
- 6.6.2. Optical zone and ablation depth
- 6.6.3. Maintenance
- 6.6.4. Cost limitations

6.7. Microkeratomes
- 6.7.1. Potential visual loss
- 6.7.2. Nasal hinge microkeratomes
- 6.7.3. Upper hinge microkeratomes
- 6.7.4. New microkeratomes

6.8. Suction rings and flap
- 6.8.1. Suction ring function
- 6.8.2. Intraocular pressure
- 6.8.3. Microkeratome passage
- 6.8.4. Flap management

6.9. Femtosecond laser
- 6.9.1. Suction ring
- 6.9.2. Femtosecond laser for the flap
- 6.9.3. Advantages over the microkeratome
- 6.9.4. Flap management

6.10. Excimer laser ablation
- 6.10.1. Myopia
- 6.10.2. Hyperopia
- 6.10.3. Astigmatism and combinations
- 6.10.4. Immediate postoperative management



Module 7. Corneal Refractive Surgery

7.1. Cornea
- 7.1.1. Anatomy
- 7.1.2. physiology
- 7.1.3. Pathology
- 7.1.4. Corneal Healing

7.2. Laser surgical techniques
- 7.2.1. PRK
- 7.2.2. LASIK/LASEK
- 7.2.3. Femtolasik
- 7.2.4. *Smile*

7.3. Microkeratomes and femtosecond lasers
- 7.3.1. The Corneal flap
- 7.3.2. Nasal hinge microkeratomes
- 7.3.3. Upper hinge microkeratomes
- 7.3.4. Femtosecond laser

7.4. Post-Operative Care
- 7.4.1. Physical Activity
- 7.4.2. Hygiene standards
- 7.4.3. Treatment
- 7.4.4. Postoperative revisions

7.5. Laser surgery complications
- 7.5.1. Preoperative
- 7.5.2. Preoperative
- 7.5.3. Specific trans-operative procedures for laser use
- 7.5.4. Post-Operatives

7.6. Laser retouching
- 7.6.1. Preoperative evaluation and indications
- 7.6.2. Surgical Techniques
- 7.6.3. Risk
- 7.6.4. Postoperative Care

7.7. Laser after keratoplasty (QPP)
- 7.7.1. How and when
- 7.7.2. Surgical Technique
- 7.7.3. Results
- 7.7.4. Conclusions

7.8. Laser after surgery with phakic and pseudophakic lenses
- 7.8.1. PRK
- 7.8.2. Lasik
- 7.8.3. Triple procedure
- 7.8.4. Aphakia

7.9. Intrastromal rings
- 7.9.1. Patient selection
- 7.9.2. Surgical technique and mechanisms of action
- 7.9.3. Results
- 7.9.4. Complications

7.10. Other Surgical Techniques
- 7.10.1. Presbyopic Lasik
- 7.10.2. Thermal/conductive keratoplasty
- 7.10.3. PTK
- 7.10.4. Other techniques in disuse

Module 8. Refractive Lens Surgery

8.1. Anatomy of the lens
- 8.1.1. Histological/ adult lens anatomy
- 8.1.2. Capsule and epithelial cells of the crystalline lens
- 8.1.3. Lenticular mass
- 8.1.4. Ciliary muscles and zonula

8.2. Accommodation
- 8.2.1. Mechanisms
- 8.2.2. Schacar's theory
- 8.2.3. Hemlhotz theory
- 8.2.4. New Theories

8.3. Presbyopia
- 8.3.1. Aging of the crystalline lens
- 8.3.2. Ciliary muscle atrophy
- 8.3.3. Medical Treatment
- 8.3.4. Surgical Management

8.4. Surgical techniques for the correction of Presbyopia
- 8.4.1. Presbyopic lasik
- 8.4.2. Monovision with lasik
- 8.4.3. Cataract Surgery
- 8.4.4. Clear lens surgery

8.5. Patient selection and indication for surgery
- 8.5.1. Age of the Patient
- 8.5.2. Crystalline State
- 8.5.3. Ametropia and Presbyopia
- 8.5.4. Emmetropic patient and Presbyopia

8.6. Calculation of intraocular lenses: Biometrics
- 8.6.1. Formulas for calculation
- 8.6.2. Bio-Meters
- 8.6.3. Surveying and surveyors
- 8.6.4. Tear film status

8.7. Selecting the right lens
- 8.7.1. Diffractive lenses
- 8.7.2. Refractive lenses
- 8.7.3. Accommodative lenses and EDOF
- 8.7.4. Patient expectations and needs

8.8. Surgical technique of the crystalline lens
- 8.8.1. Anesthesia
- 8.8.2. Surgical preparation
- 8.8.3. Phacoemulsification
- 8.8.4. Femtosecond surgery

8.9. Surgical complications
- 8.9.1. Capsular rupture
- 8.9.2. Corneal edema
- 8.9.3. Endophthalmitis
- 8.9.4. Residual defect/refractive surprise

8.10. Complex and special cases
- 8.10.1. High Myopia
- 8.10.2. High Farsightedness
- 8.10.3. High Astigmatism
- 8.10.4. Uncooperative patients

Module 9. Phakic lens surgery

9.1 Phakic lenses
- 9.1.1. Concept
- 9.1.2. Type of phakic lenses
- 9.1.3. Current use of phakic lenses
- 9.1.4. Materials used in phakic lenses

9.2. Anatomical aspects in relation to the use of phakic lenses
- 9.2.1. Anatomy of the anterior pole of the eyeball
- 9.2.2. Biometric data to be taken into account for the implantation of phakic lenses
- 9.2.3. Measuring instruments used
- 9.2.4. Anatomical contraindications

9.3. Optical aspects of phakic lenses
- 9.3.1. Ocular optics
- 9.3.2. Phakic lens optics
- 9.3.3. Spherical correction with phakic lenses
- 9.3.4. Correction of Astigmatism with phakic lenses

9.4. Indications for phakic lens implantation
- 9.4.1. Indications in the adult eye
- 9.4.2. Indications in children
- 9.4.3. Indications in the pathological eye
- 9.4.4. Clinical contraindications

9.5. History of phakic lens development
- 9.5.1. The precursors
- 9.5.2. First models
- 9.5.3. Disused models
- 9.5.4. Development of current models

9.6. Angle-supported phakic lenses
- 9.6.1. Concept
- 9.6.2. Indications
- 9.6.3. Implantation Techniques
- 9.6.4. Complications

9.7. Iridian fixation phakic anterior chamber lenses
- 9.7.1. Concept
- 9.7.2. Indications
- 9.7.3. Implantation Technique
- 9.7.4. Complications

9.8. Epicrystalline lenses
- 9.8.1. Concept
- 9.8.2. Indications
- 9.8.3. Implantation Technique
- 9.8.4. Complications

9.9. Evolution of phakic lenses
- 9.9.1. Innovation in phakic lenses
- 9.9.2. New indications for phakic lenses
- 9.9.3. Future of phakic lenses
- 9.9.4. Phakic lenses in relation to other Refractive Surgery techniques

9.10. Conclusions
- 9.10.1. Phakic lenses in context
- 9.10.2. Epicrystalline lenses in relation to phakic lenses
- 9.10.3. Best practice phakic lenses
- 9.10.4. Summary

Module 10. Refractive Surgery and Glaucoma

10.1. Basic aspects of Glaucoma
- 10.1.1. Epidemiology
- 10.1.2. Prevalence
- 10.1.3. Risk Factors
- 10.1.4. Follow-up protocol

10.2. Exploración I
- 10.2.1. IOP
- 10.2.2. Gonioscopy
- 10.2.3. Angle
- 10.2.4. Optic nerve head

10.3. Exploration II
- 10.3.1. Visual field
- 10.3.2. Imaging and Glaucoma
- 10.3.3. Progression
- 10.3.4. Genetics

10.4. Clinical Forms
- 10.4.1. Ocular hypertension (OHT)
- 10.4.2. Primary open angle glaucoma
- 10.4.3. Primary closed angle glaucoma
- 10.4.4. Congenital Glaucoma

10.5. Clinical forms II
- 10.5.1. Primary and secondary angular closure
- 10.5.2. Pseudoexfoliative and pigmentary glaucoma
- 10.5.3. Glaucoma in children and adolescents
- 10.5.4. Glaucoma secondary to ocular surgery

10.6. Treatment I
- 10.6.1. Target IOP
- 10.6.2. Hypotensive drugs
- 10.6.3. Dietary supplements
- 10.6.4. Neuroprotection

10.7. II Treatment
- 10.7.1. Laser surgery Trabeculoplasty
- 10.7.2. Classic trabeculectomy
- 10.7.3. Non-penetrating deep sclerectomy (NPS)
- 10.7.4. Valve implants

10.8. Intraocular Lens Refractive Surgery and Glaucoma
- 10.8.1. Angle support lenses and Glaucoma
- 10.8.2. Iris-anchored lenses and Glaucoma
- 10.8.3. Multifocal Lenses and Glaucoma
- 10.8.4. Postoperative Aftercare

10.9. Corneal Refractive and Glaucoma Surgery
- 10.9.1. Refractive Surgery Considerations for Glaucoma Patients
- 10.9.2. Effects of Refractive Surgery on Glaucoma
- 10.9.3. Tracking algorithm
- 10.9.4. Risk factors in the progression of myopic glaucoma after corneal refractive surgery

10.10. Final Aspects
- 10.10.1. Methods of IOP measurement after surgery
- 10.10.2. Postoperative Dry Eye and Glaucoma Treatment
- 10.10.3. Effect of corticosteroids on IOP
- 10.10.4. Addressing complications

Elevate your surgical skills for presbyopia correction with this academic option and its numerous multimedia teaching resources"

05

Methodology

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

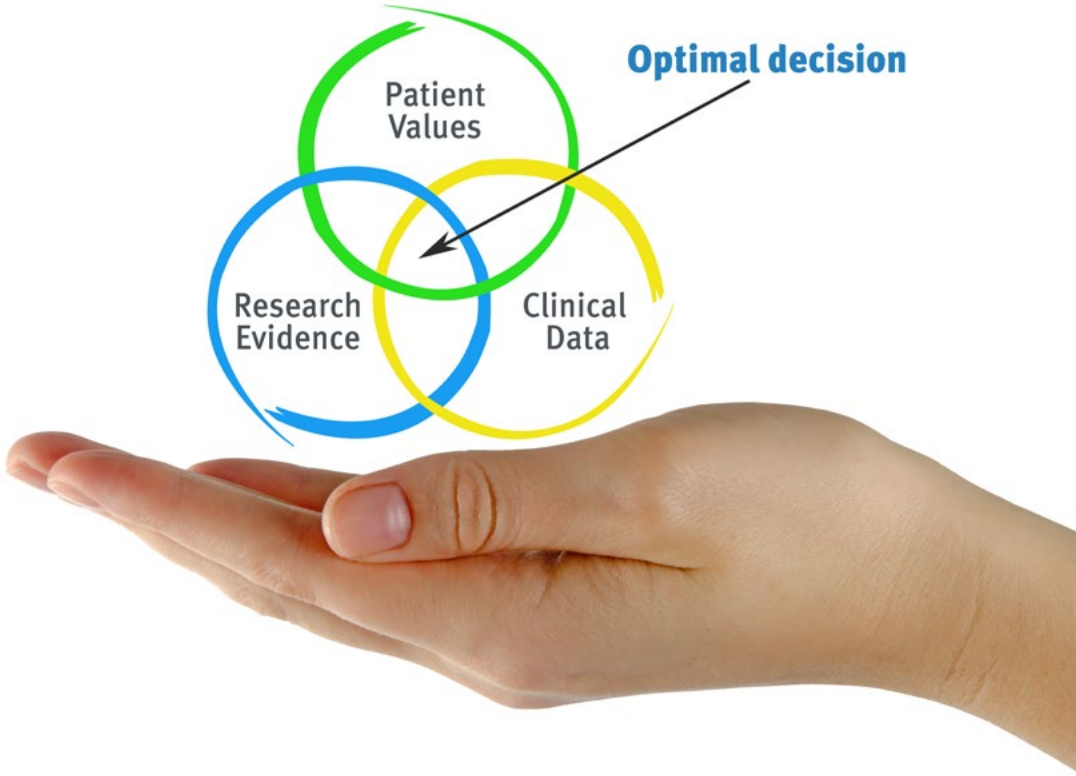
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the ***New England Journal of Medicine*** have considered it to be one of the most effective.

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:

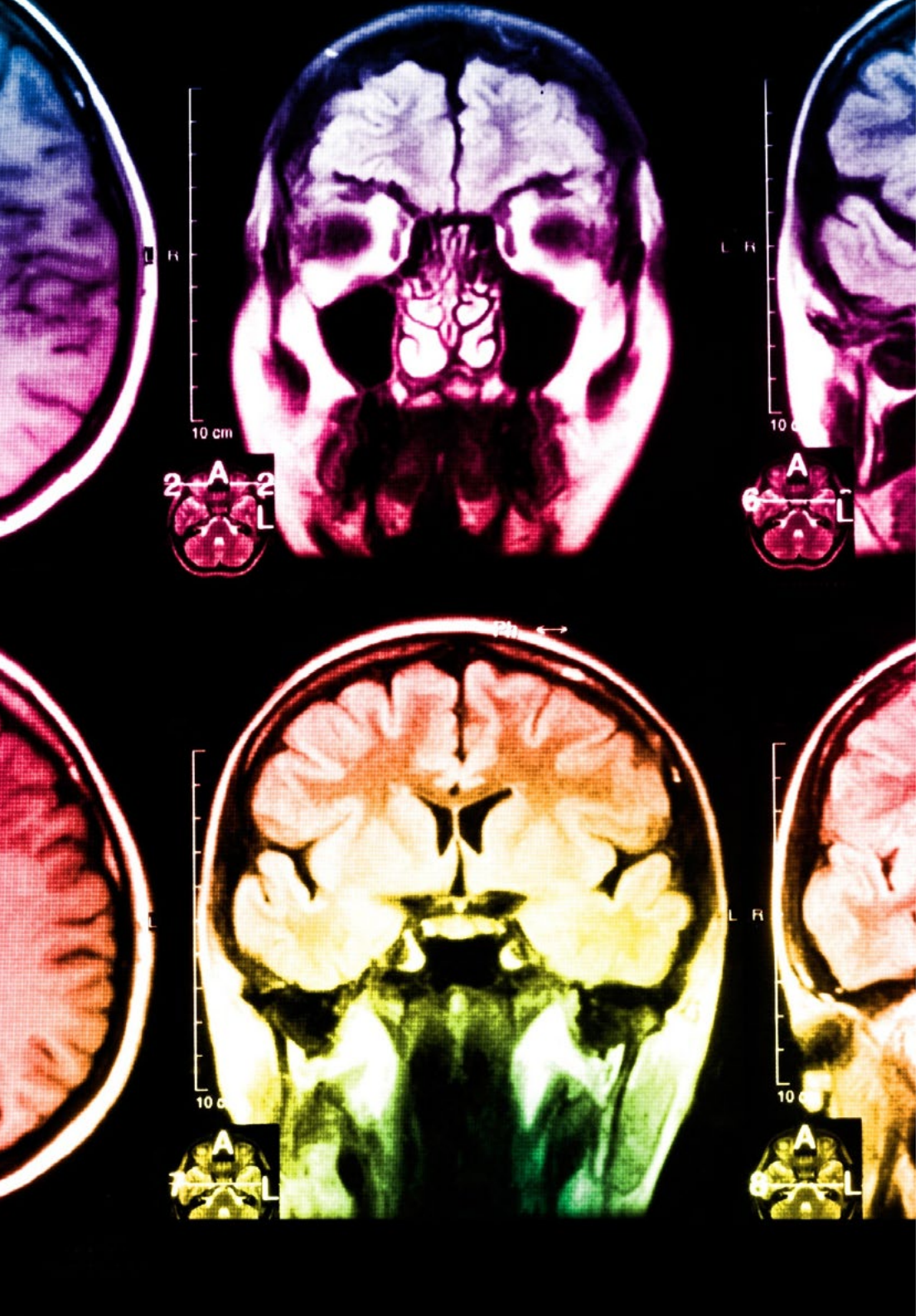
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better 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.

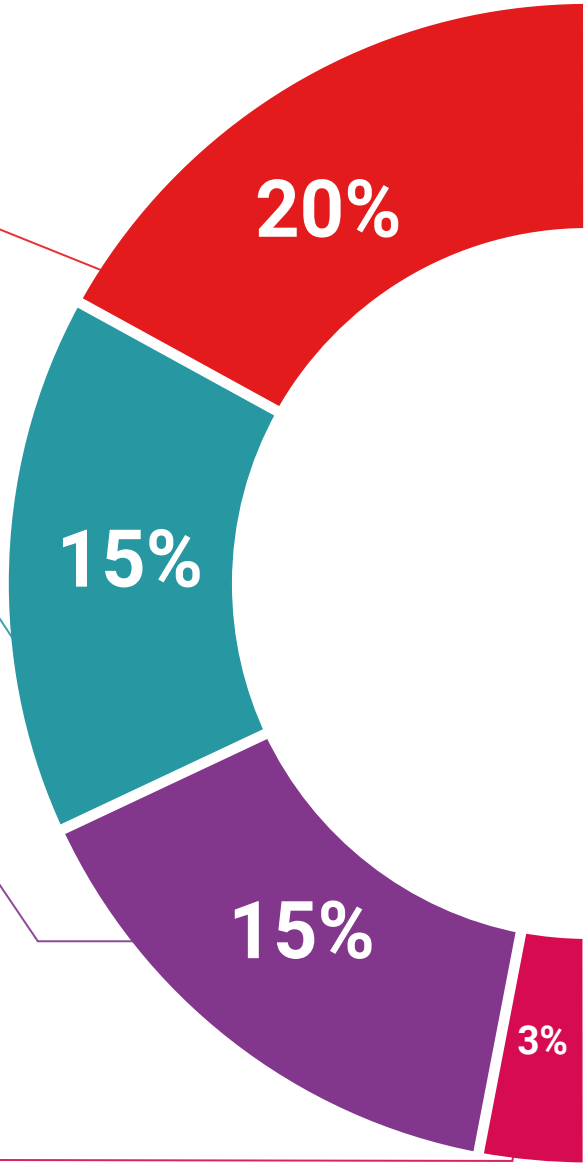
Interactive Summaries

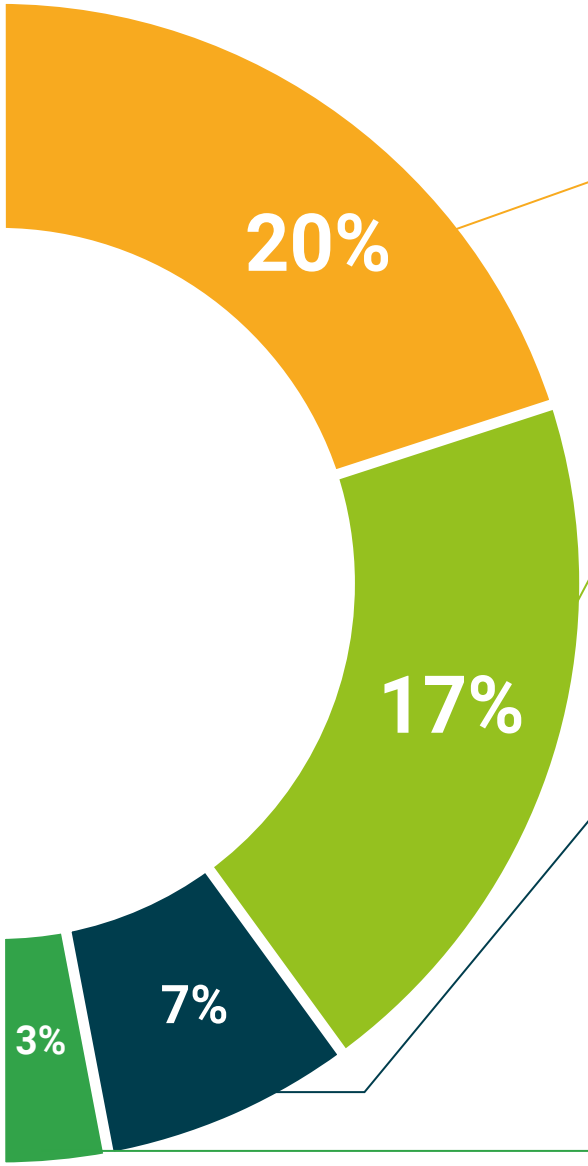
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.

07

Certificate

The Professional Master's Degree in Refractive Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Technological University.

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

This **Professional Master's Degree in Refractive Surgery** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Professional Master's Degree** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Professional Master's Degree in Refractive Surgery**
Official Nº of Hours: **1,500 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.
For having successfully passed and accredited the following program

PROFESSIONAL MASTER'S DEGREE
in
Refractive Surgery

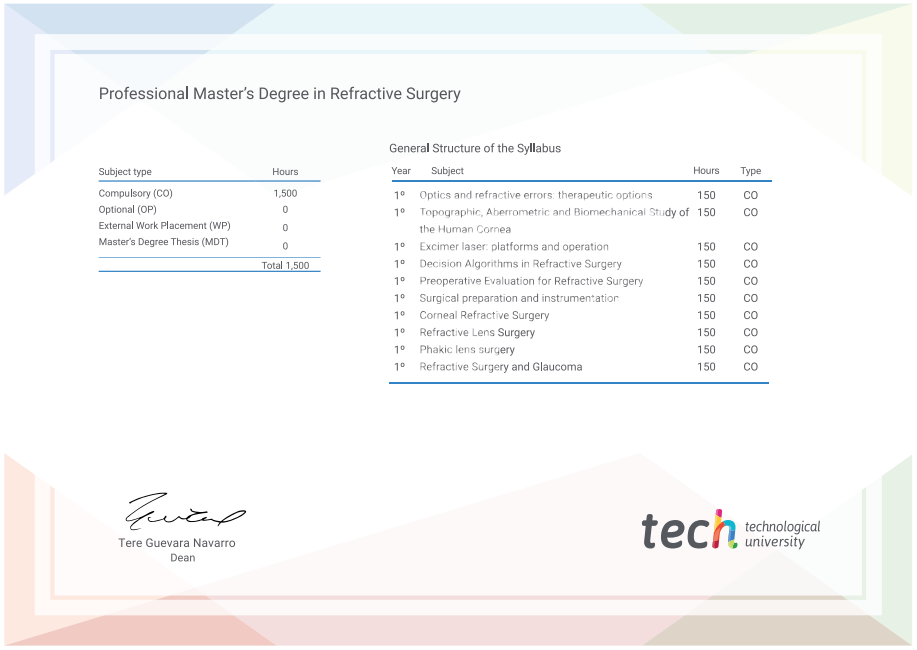
This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

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


Professional Master's Degree in Refractive Surgery

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,500

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Optics and refractive errors: therapeutic options	150	CO
1º	Topographic, Aberrometric and Biomechanical Study of the Human Cornea	150	CO
1º	Excimer laser: platforms and operation	150	CO
1º	Decision Algorithms in Refractive Surgery	150	CO
1º	Preoperative Evaluation for Refractive Surgery	150	CO
1º	Surgical preparation and instrumentation	150	CO
1º	Corneal Refractive Surgery	150	CO
1º	Refractive Lens Surgery	150	CO
1º	Phakic lens surgery	150	CO
1º	Refractive Surgery and Glaucoma	150	CO

Tere Guevara Navarro
Dean

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

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Professional Master's Degree
Refractive Surgery

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree
Refractive Surgery

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