



## Postgraduate Diploma

# Surgical Procedures in Refractive Surgery

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 8h/week

» Schedule: at your own pace

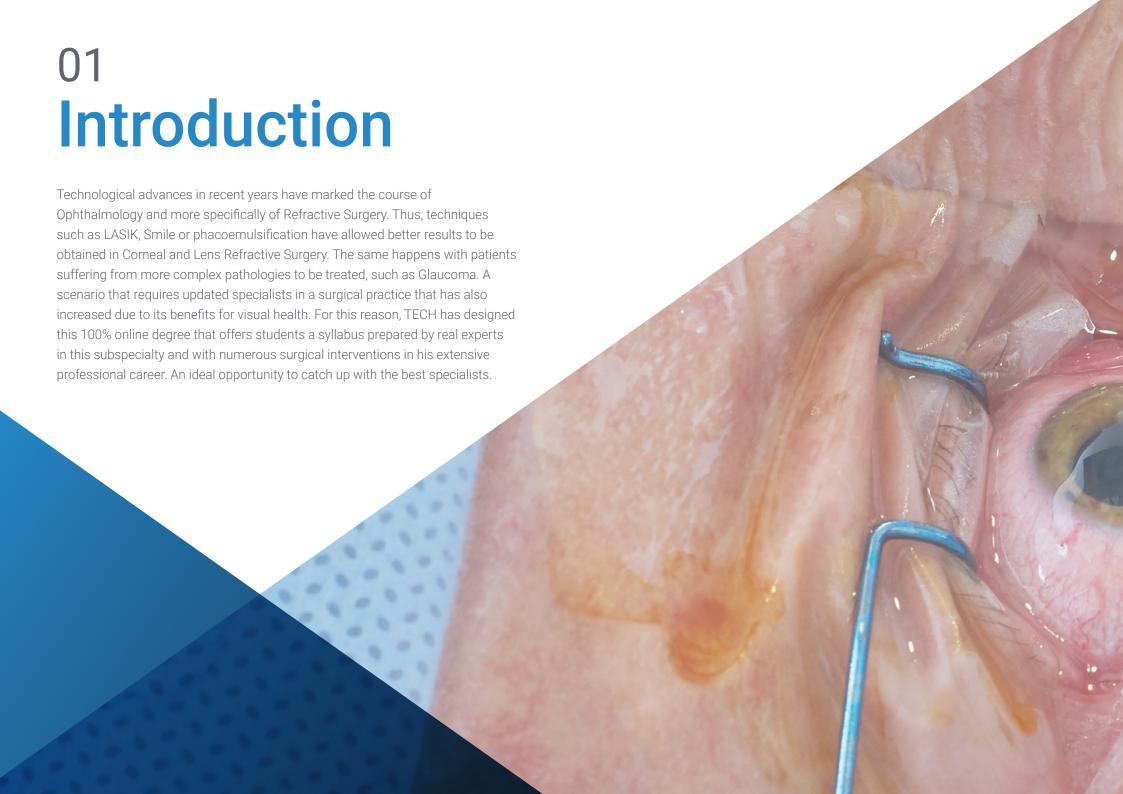
» Exams: online

Website: www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-surgical-procedures-refractive-surgery

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## tech 06 | Introduction

The introduction of advances in laser technology, new types of intraocular lenses and more precise surgical techniques have given Refractive Surgery a major boost. Thus, many patients with Myopia, Astigmatism or Hypermetromia have benefited from it, and other more complex clinical cases such as Glaucoma have also improved in recent years.

These relevant achievements for people's visual health, as well as the new surgical and medical treatments in Refractive Surgery are brought together in this 6-month Postgraduate Diploma with the most advanced syllabus in the current academic panorama.

It is a program that is made up of an excellent team of ophthalmologist specialists with accumulated surgical experience and the implementation of the most precise procedures. In this way, students will be able to be aware at the end of this degree of the advances in Crystalline Refractive Surgery, Corneal Refractive Surgery, phakic lenses and the approach to patients with Glaucoma through this surgery.

An academic tour that also includes a Virtual Library composed of multimedia didactic material, complementary readings and simulations of case studies that provide greater dynamism.

A unique opportunity for updating through a flexible academic option that students can access whenever and wherever they wish. All you need is an electronic device with an internet connection to view this program at any time of the day. Thus, the professional will have greater freedom to self-manage his or her studies and will be able to balance his or her daily activities with a quality degree.

This **Postgraduate Diploma in Surgical Procedures 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



Video clips and detailed videos bring great dynamism to the update on surgical techniques and intraocular lens selection"



Do you want to learn more about phakic lens advances at any time of the day and without time pressure?

Do it with this 100% online program"

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. This will be done with the help of an innovative system of interactive videos made by renowned experts.

It delves into the important achievements made through the laser-assisted phacoemulsification technique.

You will be updated on the latest clinical evidence on the use of Refractive Surgery in Glaucoma patients.







## tech 10 | Objectives



## **General Objectives**

- To 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
- To deepen in 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
- To deepen the relationship between Glaucoma and Refractive Surgery







## **Specific Objectives**

### Module 1. Corneal Refractive Surgery

- Delve deeper into the cornea, the tissue on which the excimer acts
- To 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 2. Refractive Lens Surgery

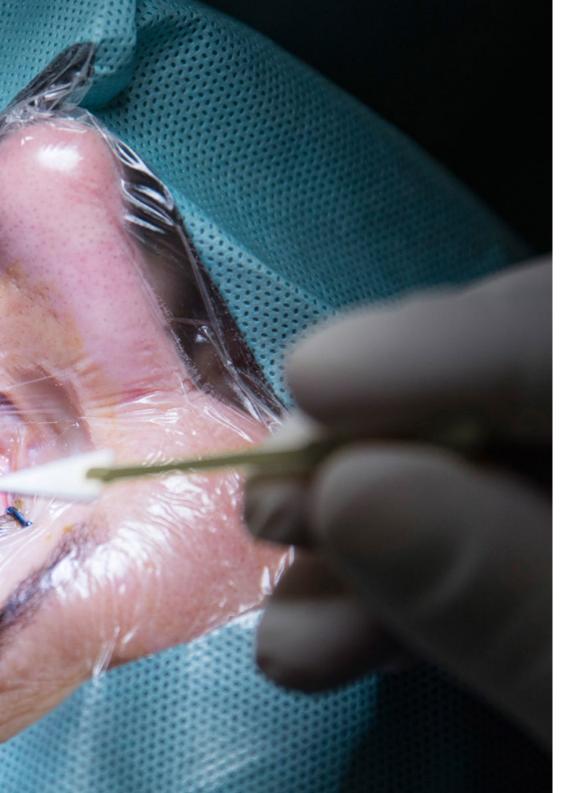
- Delve into the anatomy and function of the crystalline lens
- Delve into the concept of presbyopia and why it occurs
- Describe the surgical techniques, as well as the calculation and choice of intraocular lenses
- Learn about surgical complications and complex cases

#### Module 3. Phakic lens surgery

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

#### Module 4. 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







## tech 14 | Course Management

## 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

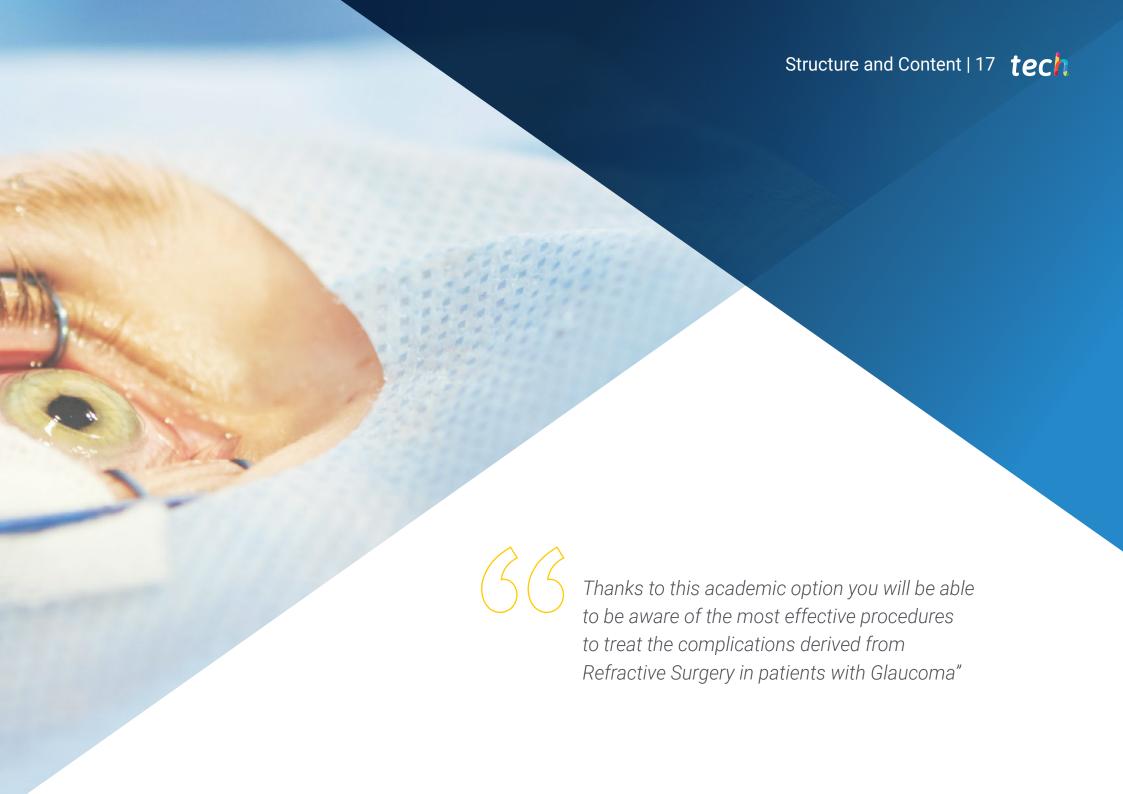
#### **Professors**

## 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: Spanish Society of Ophthalmology, American Academy of Ophthalmology, Spanish Ocular Surface Group (GESOC), the Andalusian Society of Ophthalmology, the Spanish Society of Implanto Refractive Surgery





## tech 18 | Structure and Content

## Module 1. Corneal Refractive Surgery

- 1.1. Cornea
  - 1.1.1. Anatomy
  - 1.1.2. Physiology
  - 1.1.3. Pathology
  - 1.1.4. Corneal Healing
- 1.2. Laser surgical techniques
  - 1.2.1. PRK
  - 1.2.2. LASIK/LASEK
  - 1.2.3. Femtolasik
  - 1.2.4. Smile
- 1.3. Microkeratomes and femtosecond lasers
  - 1.3.1. The Corneal flap
  - 1.3.2. Nasal hinge microkeratomes
  - 1.3.3. Upper hinge microkeratomes
  - 1.3.4. Femtosecond laser
- 1.4. Post-Operative Care
  - 1.4.1. Physical Activity
  - 1.4.2. Hygiene standards
  - 1.4.3. Treatment
  - 1.4.4. Postoperative revisions
- 1.5. Laser surgery complications
  - 1.5.1. Preoperative
  - 1.5.2. Preoperative
  - 1.5.3. Specific trans-operative procedures for laser use
  - 1.5.4. Post-Operatives
- 1.6. Laser retouching
  - 1.6.1. Preoperative evaluation and indications
  - 1.6.2. Surgical Techniques
  - 1.6.3. Risk
  - 1.6.4. Postoperative Care

- 1.7. Laser after keratoplasty (QPP)
  - 1.7.1. How and when
  - 1.7.2. Surgical Technique
  - 1.7.3. Results
  - 1.7.4. Conclusions
- 1.8. Laser after surgery with phakic and pseudophakic lenses
  - 1.8.1. PRK
  - 1.8.2. Lasik
  - 1.8.3. Triple procedure
  - 1.8.4. Aphakia
- 1.9. Intrastromal rings
  - 1.9.1. Patient selection
  - 1.9.2. Surgical technique and mechanisms of action
  - 1.9.3. Results
  - 1.9.4. Complications
- 1.10. Other Surgical Techniques
  - 1.10.1. Presbyopic Lasik
  - 1.10.2. Thermal/conductive keratoplasty
  - 1.10.3. PTK
  - 1.10.4. Other techniques in disuse

## Module 2. Refractive Lens Surgery

- 2.1. Anatomy of the lens
  - 2.1.1. Histological/ adult lens anatomy
  - 2.1.2. Capsule and epithelial cells of the crystalline lens
  - 2.1.3. Lenticular mass
  - 2.1.4. Ciliary muscles and zonula
- 2.2. Accommodation
  - 2.2.1. Mechanisms
  - 2.2.2. Schacar's theory
  - 2.2.3. Hemlhotz theory
  - 2.2.4. New Theories

## Structure and Content | 19 tech

2.3.	Presby	nnia
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- 2.3.1. Aging of the crystalline lens
- 2.3.2. Ciliary muscle atrophy
- 2.3.3. Medical Treatment
- 2.3.4. Surgical Management
- 2.4. Surgical techniques for the correction of Presbyopia
  - 2.4.1. Presbyopic lasik
  - 2.4.2. Monovision with lasik
  - 2.4.3. Cataract Surgery
  - 2.4.4. Clear lens surgery
- 2.5. Patient selection and indication for surgery
  - 2.5.1. Age of the Patient
  - 2.5.2. Crystalline State
  - 2.5.3. Ametropia and Presbyopia
  - 2.5.4. Emmetropic patient and Presbyopia
- 2.6. Calculation of intraocular lenses: Biometrics
  - 2.6.1. Formulas for calculation
  - 2.6.2. Bio-Meters
  - 2.6.3. Surveying and surveyors
  - 2.6.4. Tear film status
- 2.7. Selecting the right lens
  - 2.7.1. Diffractive lenses
  - 2.7.2. Refractive lenses
  - 2.7.3. Accommodative lenses and EDOF
  - 2.7.4. Patient expectations and needs
- 2.8. Surgical technique of the crystalline lens
  - 2.8.1. Anesthesia
  - 2.8.2. Surgical preparation
  - 2.8.3. Phacoemulsification
  - 2.8.4. Femtosecond surgery

- 2.9. Surgical complications
  - 2.9.1. Capsular rupture
  - 2.9.2. Corneal edema
  - 2.9.3. Endophthalmitis
  - 2.9.4. Residual defect/refractive surprise
- 2.10. Complex and special cases
  - 2.10.1. High Myopia
  - 2.10.2. High Farsightedness
  - 2.10.3. High Astigmatism
  - 2.10.4. Uncooperative patients

## Module 3. Cirugía con lentes fáquicas

- 3.1. Phakic lenses
  - 3.1.1. Concept
  - 3.1.2. Type of phakic lenses
  - 3.1.3. Current use of phakic lenses
  - 3.1.4. Materials used in phakic lenses
- 3.2. Anatomical aspects in relation to the use of phakic lenses
  - 3.2.1. Anatomy of the anterior pole of the eyeball
  - 3.2.2. Biometric data to be taken into account for the implantation of phakic lenses
  - 3.2.3. Measuring instruments used
  - 3.2.4. Anatomical contraindications
- 3.3. Optical aspects of phakic lenses
  - 3.3.1. Ocular optics
  - 3.3.2. Phakic lens optics
  - 3.3.3. Spherical correction with phakic lenses
  - 3.3.4. Correction of Astigmatism with phakic lenses
- 3.4. Indications for phakic lens implantation
  - 3.4.1. Indications in the adult eye
  - 3.4.2. Indications in children
  - 3.4.3. Indications in the pathological eye
  - 3.4.4. Clinical contraindications

## tech 20 | Structure and Content

- 3.5. History of phakic lens development
  - 3.5.1. The precursors
  - 3.5.2. First models
  - 3.5.3. Disused models
  - 3.5.4. Development of current models
- 3.6. Angle-supported phakic lenses
  - 3.6.1. Concept
  - 3.6.2. Indications
  - 3.6.3. Implantation Techniques
  - 3.6.4. Complications
- 3.7. Iridian fixation phakic anterior chamber lenses
  - 3.7.1. Concept
  - 3.7.2. Indications
  - 3.7.3. Implantation Technique
  - 3.7.4. Complications
- 3.8. Epicrystalline lenses
  - 3.8.1. Concept
  - 3.8.2. Indications
  - 3.8.3. Implantation Technique
  - 3.8.4. Complications
- 3.9. Evolution of phakic lenses
  - 3.9.1. Innovation in phakic lenses
  - 3.9.2. New indications for phakic lenses
  - 3.9.3. Future of phakic lenses
  - 3.9.4. Phakic lenses in relation to other Refractive Surgery techniques.
- 3.10. Conclusions
  - 3.10.1. Phakic lenses in context
  - 3.10.2. Epicrystalline lenses in relation to phakic lenses
  - 3.10.3. Best practice phakic lenses
  - 3.10.4. Summary



#### Module 4. Refractive Surgery and Glaucoma

- 4.1. Basic aspects of Glaucoma
  - 4.1.1. Epidemiology
  - 4.1.2. Prevalence
  - 4.1.3. Risk Factors
  - 4.1.4. Follow-up protocol
- 4.2. Exploración I
  - 4.2.1. IOP
  - 4.2.2. Gonioscopy
  - 4.2.3. Angle
  - 4.2.4. Optic nerve head
- 4.3. Exploration II
  - 4.3.1. Visual field
  - 4.3.2. Imaging and Glaucoma
  - 4.3.3. Progression
  - 4.3.4. Genetics
- 4.4. Clinical Forms
  - 4.4.1. Ocular hypertension (OHT)
  - 4.4.2. Primary open angle glaucoma
  - 4.4.3. Primary closed angle glaucoma
  - 4.4.4. Congenital Glaucoma
- 4.5. Clinical forms II
  - 4.5.1. Primary and secondary angular closure
  - 4.5.2. Pseudoexfoliative and pigmentary glaucoma
  - 4.5.3. Glaucoma in children and adolescents
  - 4.5.4. Glaucoma secondary to ocular surgery
- 4.6. Treatment I
  - 4.6.1. Target IOP
  - 4.6.2. Hypotensive drugs
  - 4.6.3. Dietary supplements
  - 4.6.4. Neuroprotection

- 4.7. II Treatment
  - 4.7.1. Laser surgery Trabeculoplasty
  - 4.7.2. Classic trabeculectomy
  - 4.7.3. Non-penetrating deep sclerectomy (NPS)
  - 4.7.4. Valve implants
- 4.8. Intraocular Lens Refractive Surgery and Glaucoma
  - 4.8.1. Angle support lenses and Glaucoma
  - 4.8.2. Iris-anchored lenses and Glaucoma
  - 4.8.3. Multifocal Lenses and Glaucoma
  - 4.8.4. Postoperative Aftercare
- 4.9. Corneal Refractive and Glaucoma Surgery
  - 4.9.1. Refractive Surgery Considerations for Glaucoma Patients
  - 4.9.2. Effects of Refractive Surgery on Glaucoma
  - 4.9.3. Tracking algorithm
  - 4.9.4. Risk factors in the progression of myopic glaucoma after corneal refractive surgery
- 4.10. Final Aspects
  - 4.10.1. Methods of IOP measurement after surgery
  - 4.10.2. Postoperative Dry Eye and Glaucoma Treatment
  - 4.10.3. Effect of corticosteroids on IOP
  - 4.10.4. Addressing complications



You have at your disposal a Virtual Library with extensive didactic material that will complement your updating process in Refractive Surgery"





## tech 24 | Methodology

#### 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.



## Methodology | 27 tech

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.

## tech 28 | Methodology

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.









## tech 32 | Certificate

This **Postgraduate Diploma in Surgical Procedures 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 **Postgraduate Diploma** 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: Postgraduate Diploma in Surgical Procedures in Refractive Surgery Official N° of Hours: 600 h.



<sup>\*</sup>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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guarantee accreditation teaching
institutions technology learning



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- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 8h/week
- » Schedule: at your own pace
- » Exams: online

