

# Postgraduate Certificate Instrumentation in Refractive Surgery



## Postgraduate Certificate Instrumentation in Refractive Surgery

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

Website: [www.techtitute.com/us/medicine/postgraduate-certificate/instrumentation-refractive-surgery](http://www.techtitute.com/us/medicine/postgraduate-certificate/instrumentation-refractive-surgery)

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# 01

# Introduction

Refractive surgery is a branch of ophthalmology dedicated to correcting visual defects such as myopia, hyperopia and astigmatism. The high demand for this type of interventions and the constant evolution of technology make it essential to have highly trained professionals in the area of Instrumentation in Refractive Surgery. In view of this, TECH offers updated and specialized training in this area, which will allow professionals in the sector to acquire knowledge about patient care, instrumentation and preparation for surgery. In addition, the program is taught 100% online, with a Relearning pedagogical methodology and a flexibility to organize academic resources that allows students to adapt to their schedules and needs.



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*Master Instrumentation in Refractive Surgery with the completion of this 100% online Postgraduate Certificate. Register now and become a highly trained professional in the field!"*

Refractive surgery has evolved significantly in the last decades, allowing a more precise and effective correction of refractive errors of the eye. The instrumentation used in these surgeries is crucial to obtain satisfactory results, and its correct handling is indispensable for health professionals who wish to specialize in this field. In this context, a Postgraduate Certificate on Instrumentation in Refractive Surgery is needed to enable students to acquire the knowledge and skills necessary to perform these surgeries effectively and safely.

To meet this need, TECH has implemented a professional qualification in the Instrumentation used in Refractive Surgery, from patient care to the handling of laser technology and other necessary surgical instruments. During the program, students will have the opportunity to be updated on the management of the patient from the consultation to the operating room day, describe the surgical process including laser management, surgery and the postoperative process, and update their knowledge on the operation of the femtosecond laser, among other topics.

The Postgraduate Certificate will be taught by a team of highly qualified experts with extensive experience in the field of Refractive Surgery. The methodology is based on theoretical and practical classes, with emphasis on the demonstration and practice of the surgical instrumentation techniques and tools used. In this way, students will have the opportunity to acquire practical skills and theoretical knowledge that will allow them to provide a better service to their patients and grow professionally in the field of Refractive Surgery.

This **Postgraduate Certificate in Instrumentation 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 medical experts focused on Instrumentation in 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 the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*If you want to learn about femtosecond laser management in refractive surgery, this program is for you, as it offers you the opportunity to be updated on the latest instrumentation techniques"*

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*Don't miss the opportunity to learn about Instrumentation in Refractive Surgery. In this degree, you will learn about the handling of the microkeratome, suction rings, excimer and femtosecond lasers"*

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.

*Do you want to specialize in Instrumentation in Refractive Surgery? This University Course is for you! This Postgraduate Certificate is for you!*

*Become an expert in Instrumentation in Refractive Surgery with this 100% online Postgraduate Certificate. Where you will learn in a flexible way with the Relearning pedagogical methodology.*



# 02 Objectives

Throughout the Postgraduate Certificate, the aim is to update the knowledge and skills of the participants regarding the management of the patient from the consultation to the postoperative process. In addition, the surgical procedures, from the preparation of the patient and the eyes, to the use of the laser and the ablation technique to correct the different refractive defects, are discussed in depth. The objective of this academic program is, therefore, to train students to be able to perform their work in a professional and efficient manner, thus ensuring the best results for patients who require this intervention.







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*Instrumentation Training in Refractive Surgery aims to provide students with the necessary tools to perform this surgical technique successfully”*



## General Objectives

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- ◆ 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
- ◆ Delve into 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
- ◆ 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

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- ◆ 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



*The focus on quality and educational excellence in this academic program will allow students to excel in the industry and become leaders in the field of Refractive Surgery specialization"*

03

# Course Management

TECH is committed to provide in this degree a quality education and excellence in the area of Refractive Surgery. To this end, it has a team of highly trained professionals with extensive experience in the industry of Instrumentation in Refractive Surgery, which will provide students with the necessary tools to develop solid and practical skills throughout the program. The management also ensures that the content of the Postgraduate Certificate is relevant, up-to-date and comprehensive to ensure that students are well prepared for success in the field of Refractive Surgery.



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*Enhance your skills thanks to the best teaching staff of the highest prestige, who will accompany you in the development of this Postgraduate Certificate in Instrumentation in Refractive Surgery”*

## Management



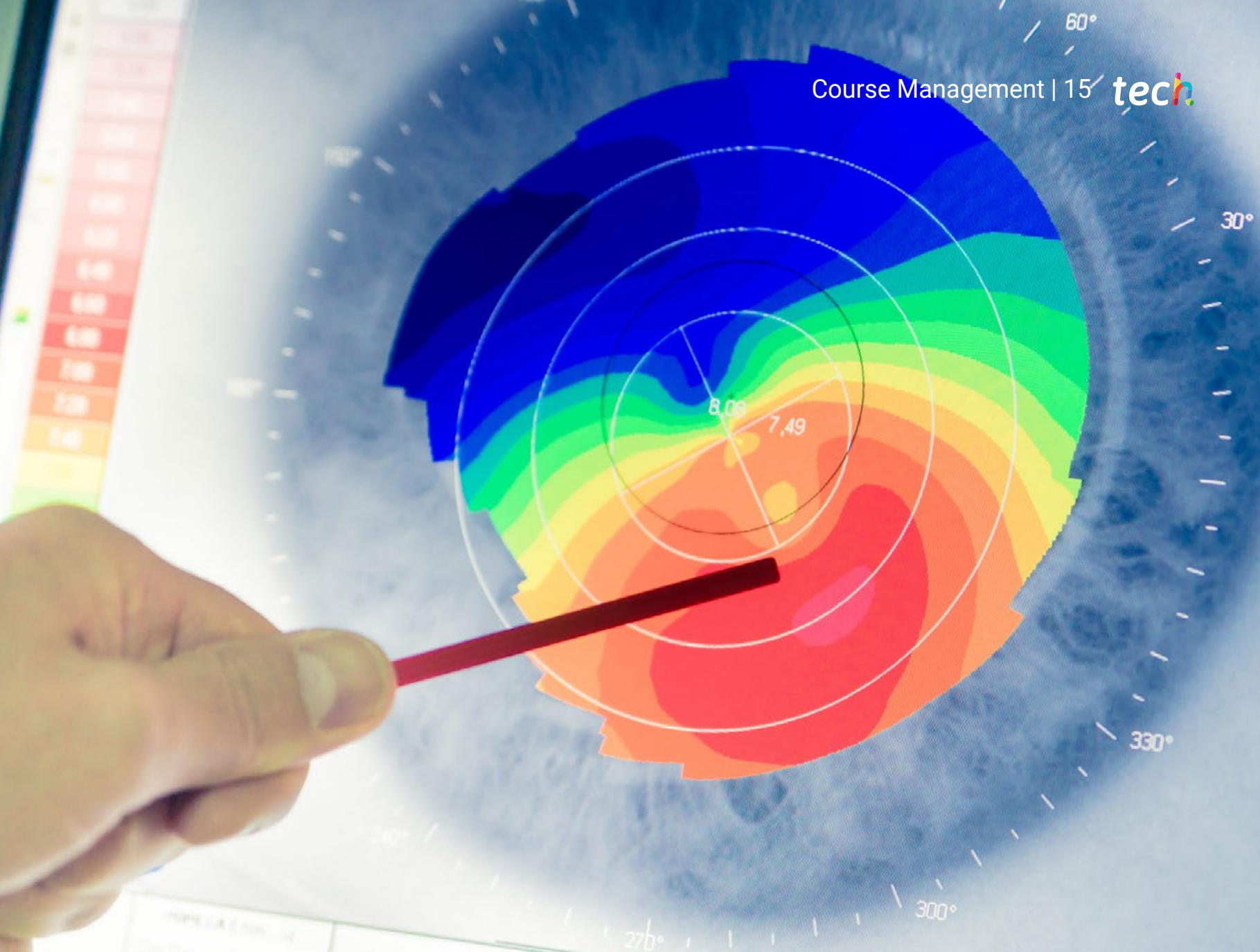
### Dr. Román Guindo, José Miguel

- ◆ 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

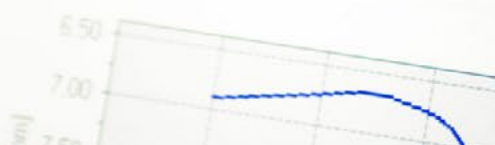


### Dr. Alaskar Alani, Hazem

- ◆ Ophthalmologist at Oftalvist Málaga
- ◆ Surgical Director of Poniente University Hospital
- ◆ 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 Implant 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



POPULATION: 14  
Sea Level: 0.04 m  
Sea Level: 0.46 m  
Elevation: 0.00 m  
Pop. Peak: 42,750



# 04

## Structure and Content

This Postgraduate Certificate provided by TECH Technological University covers a wide range of topics related to patient care before, during and after surgery. To this end, the program begins with a section dedicated to patient care, including care staff, informed consent, preoperative instructions and preoperative medication. Up to a final section, which focuses on the different types of lasers used, including excimer laser and femtosecond laser, as well as excimer laser ablation to correct myopia, hyperopia and astigmatism. All this by means of an innovative study methodology called Relearning, which allows the student to enhance their students to enhance their knowledge without the need to memorize.





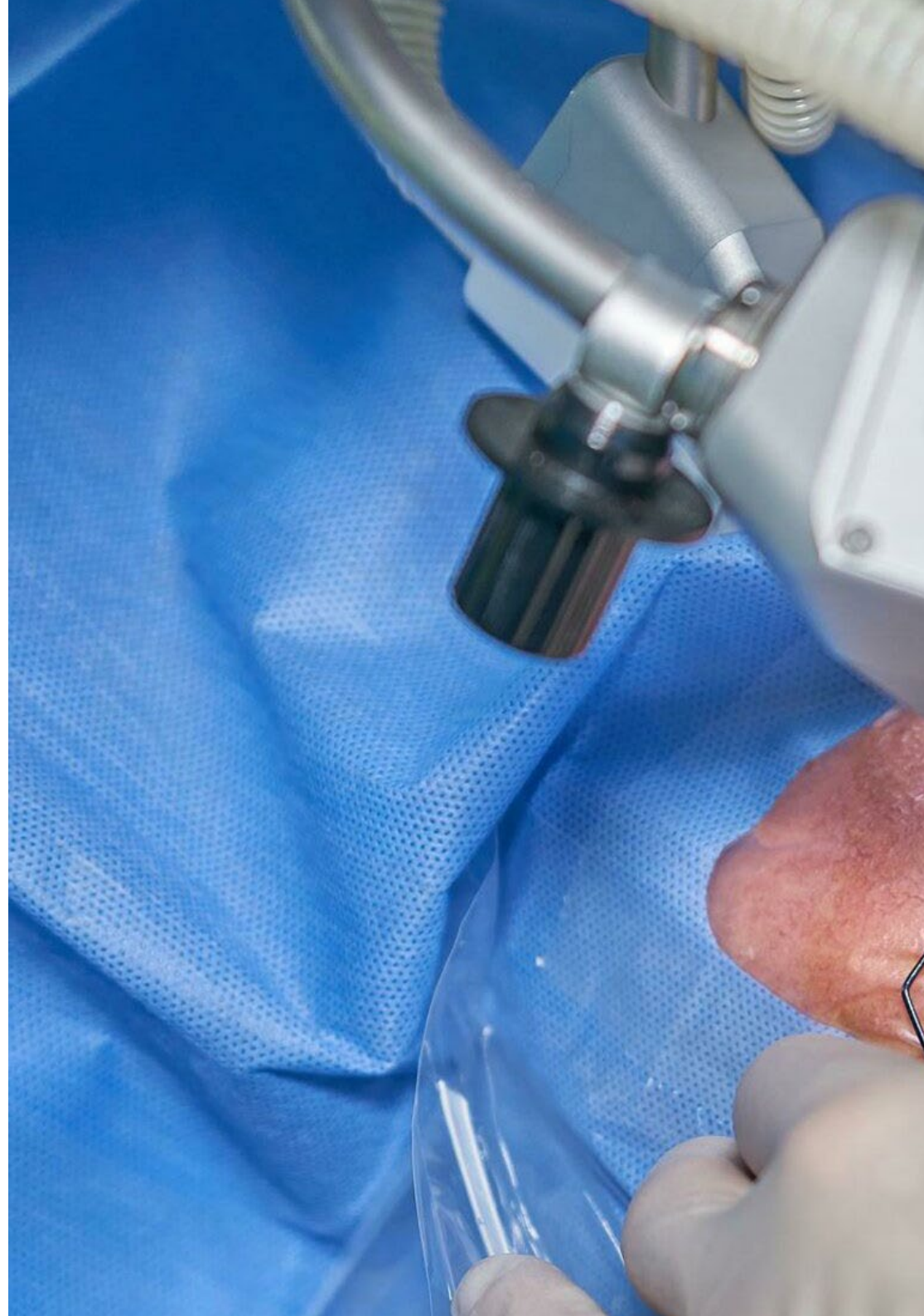


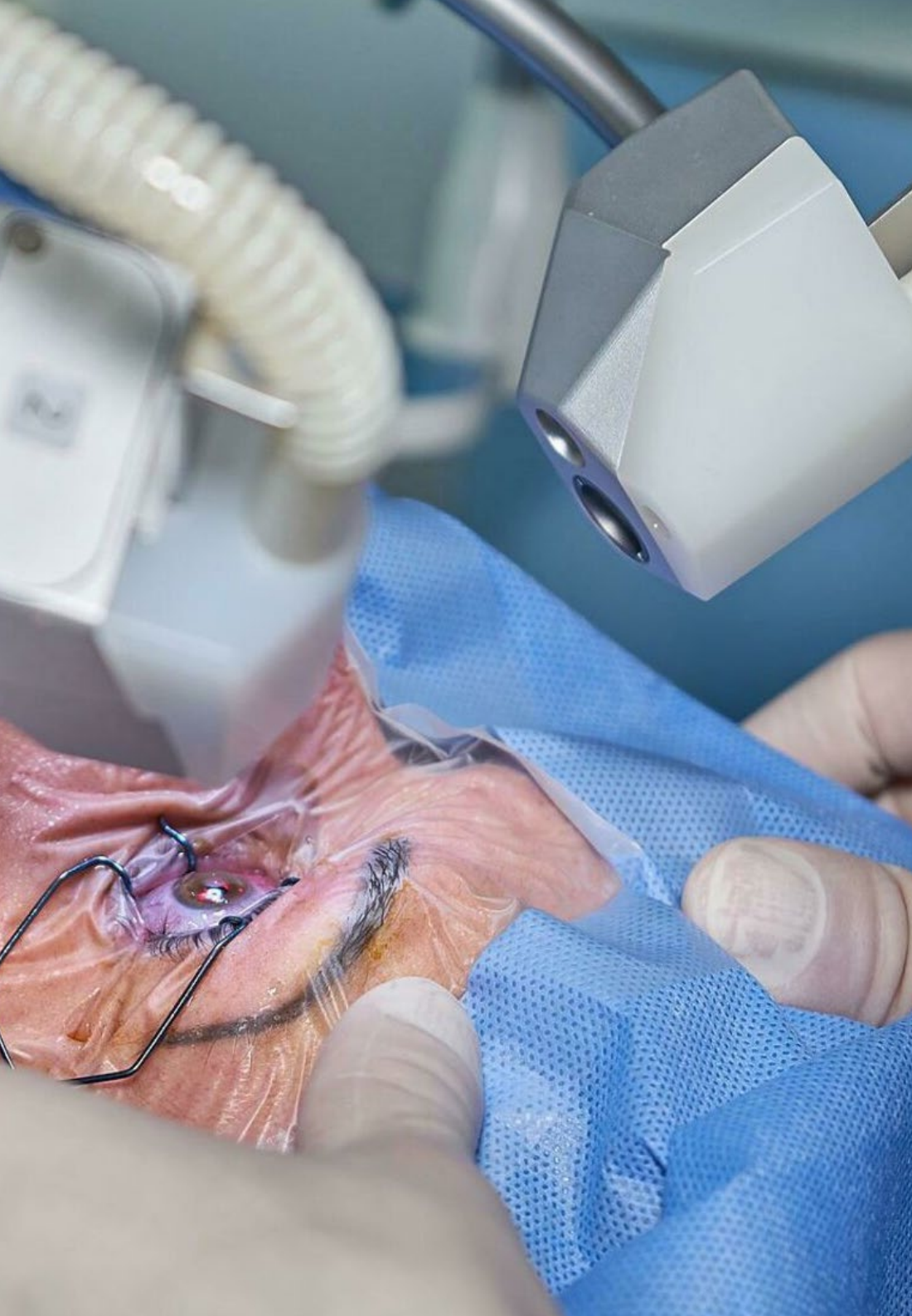
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*TECH structures the content in such a way that you can study it in depth in an autonomous and progressive way, without the need for transfers or strict schedules”*

## Module 1. Surgical preparation and instrumentation

- 1.1. Nursing Patient Care
  - 1.1.1. Staff
  - 1.1.2. Informed Consent
  - 1.1.3. Pre-Op Instructions
  - 1.1.4. Preoperative medication
- 1.2. Day of surgery
  - 1.2.1. Signature of consent
  - 1.2.2. Recovery room
  - 1.2.3. Operating room clothing
  - 1.2.4. Eye anesthesia
- 1.3. Entrance to operating room
  - 1.3.1. Patient positioning
  - 1.3.2. Anesthesia instillation
  - 1.3.3. Periocular cleaning
  - 1.3.4. Preparation of eyes
- 1.4. Surgical instrumentation
  - 1.4.1. Blefarostat
  - 1.4.2. Tweezers
  - 1.4.3. Cannulas Irrigation
  - 1.4.4. Hemostetas
- 1.5. Ocular fixation and corneal marking
  - 1.5.1. Autofix
  - 1.5.2. Uni or bilateral fixation
  - 1.5.3. Visual axis marking
  - 1.5.4. Corneal Markings
- 1.6. The Excimer Laser
  - 1.6.1. Calibration
  - 1.6.2. Optical zone and ablation depth
  - 1.6.3. Maintenance
  - 1.6.4. Cost limitations





- 1.7. Microkeratomes
  - 1.7.1. Potential visual loss
  - 1.7.2. Nasal hinge microkeratomes
  - 1.7.3. Upper hinge microkeratomes
  - 1.7.4. New microkeratomes
- 1.8. Suction rings and flap
  - 1.8.1. Suction ring function
  - 1.8.2. Intraocular pressure
  - 1.8.3. Microkeratome passage
  - 1.8.4. Flap management
- 1.9. Femtosecond laser
  - 1.9.1. Suction ring
  - 1.9.2. Femtosecond laser for the flap
  - 1.9.3. Advantages over the microkeratome
  - 1.9.4. Flap management
- 1.10. Excimer laser ablation
  - 1.10.1. Myopia
  - 1.10.2. Hyperopia
  - 1.10.3. Astigmatism and combinations
  - 1.10.4. Immediate postoperative management

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*With a 100% online modality and with all the material available for download and consultation even without internet connection, 24 hours a day, this is the Postgraduate Certificate in Instrumentation in Refractive Surgery”*

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.

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*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.



# 06 Certificate

The Postgraduate Certificate in Instrumentation in Refractive Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.





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

This **Postgraduate Certificate in Instrumentation 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 Certificate** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Instrumentation in Refractive Surgery**

Official N° of Hours: **150 h.**



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

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

personalized service innovation

knowledge present

online training

development language

virtual classroom

**tech** technological  
university

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