Postgraduate Certificate

Excimer Laser in Refractive Surgery

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Postgraduate Certificate
Excimer Laser in Refractive Surgery

- Modality: **online**
- Duration: **6 weeks**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/medicine/postgraduate-certificate/excimer-laser-refractive-surgery**

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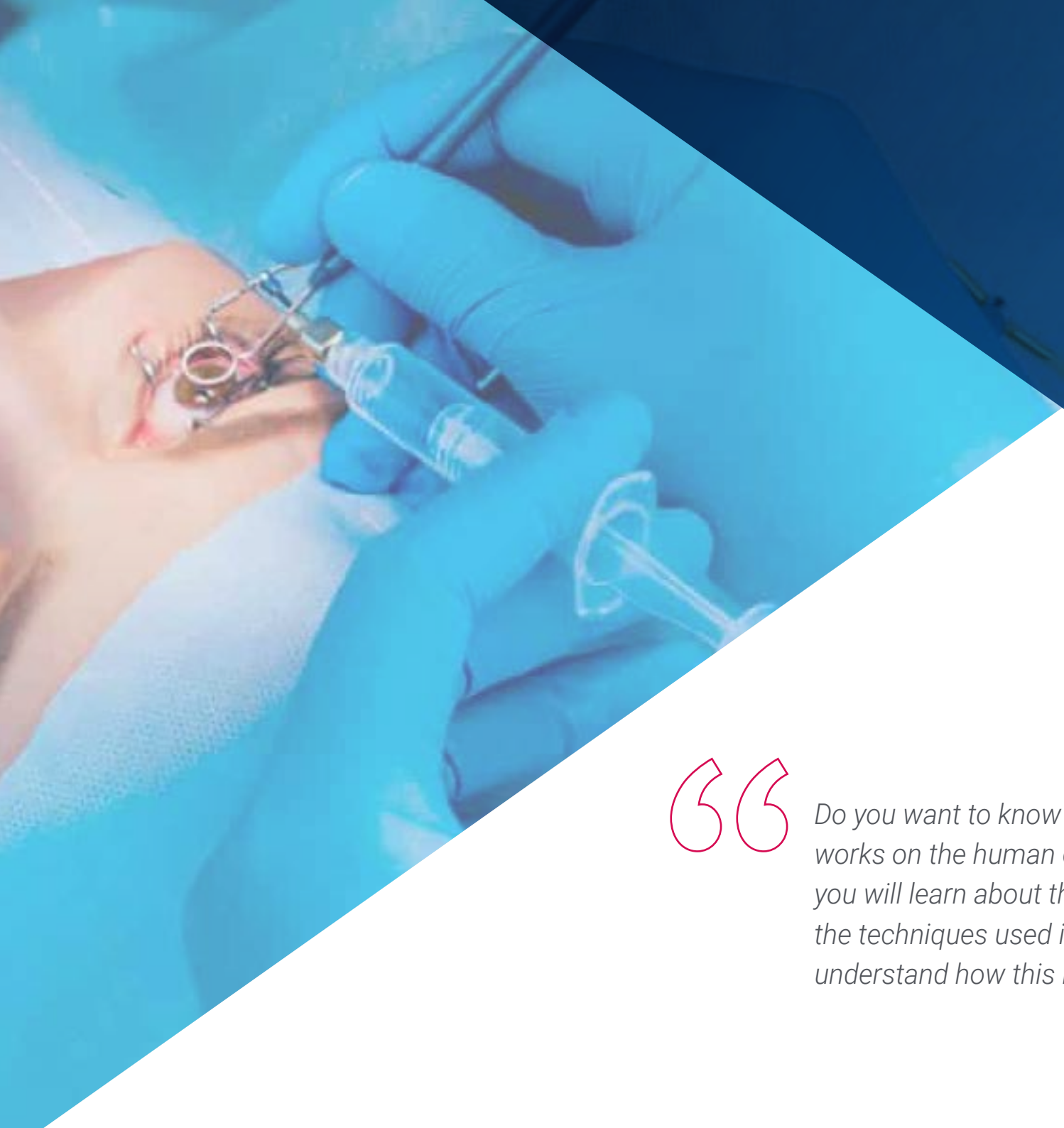
01

Introduction

Excimer laser refractive surgery is a technique used to correct visual defects such as myopia, astigmatism and hyperopia. It is one of the most common and popular surgeries worldwide due to its high success rates and rapid recovery. For this reason, TECH has developed a program, which focuses on providing students with an exhaustive and updated knowledge of this surgical technique. This program is 100% online and uses the Relearning pedagogical methodology, which combines theory and practice to ensure effective and practical training. In addition, flexibility is offered so that students can organize their academic resources according to their needs.

The main objective of the program is to provide students with a solid and updated training in the field of excimer laser refractive surgery, so that they can apply this knowledge in their clinical practice successfully.



Do you want to know how Excimer Laser treatment works on the human cornea? Enroll in this degree and you will learn about the tissue effects of the laser and the techniques used in the procedure, so you can fully understand how this innovative technique works"

Excimer laser refractive surgery is a technique used to correct visual defects such as myopia, astigmatism and hyperopia. With the increasing demand for this surgery and the constant evolution of the techniques and technologies used, it is crucial that health professionals who perform this surgical procedure remain up-to-date in their training and knowledge.

The Postgraduate Certificate in Excimer Laser in Refractive Surgery is a TECH program designed to offer students a complete and updated knowledge in this area. The degree covers topics such as the physical principles of the excimer laser, the evolution of the LASIK technique, predictive formulas for LASIK, and the technical characteristics of different types of excimer lasers and femtosecond lasers.

In addition, the Relearning pedagogical methodology is used in this Postgraduate Certificate, which allows students to combine theory with practice and provide practical and effective training. Also, the program is taught 100% online, which allows students to access academic resources from anywhere and at any time. Flexibility in organizing academic resources is also offered to suit the needs of students. In general, this Postgraduate Certificate in Excimer Laser in Refractive Surgery provides students with a solid and updated foundation in refractive surgeries, allowing them to apply this knowledge in their clinical practice successfully.

This **Postgraduate Certificate in Excimer Laser 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 medicine focused on Excimer Laser in Refractive Surgery on Excimer Laser 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 for experts, discussion forums on controversial issues and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection

Become an expert in the field and excel in your career in ophthalmology by learning in this degree about the mathematics of Excimer Laser Surgery"

Are you scared of math? Don't worry! In this Postgraduate Certificate, you will learn everything you need to know about the basic mathematics of excimer laser surgery"

TECH's innovative methodology, Relearning, allows you to learn in an effective and comfortable way, with access to state-of-the-art materials and resources made by internationally renowned experts.

If you are interested in refractive surgery and want to learn more about the Excimer Laser and its applications in ophthalmology, this academic program is for you, register now!

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.

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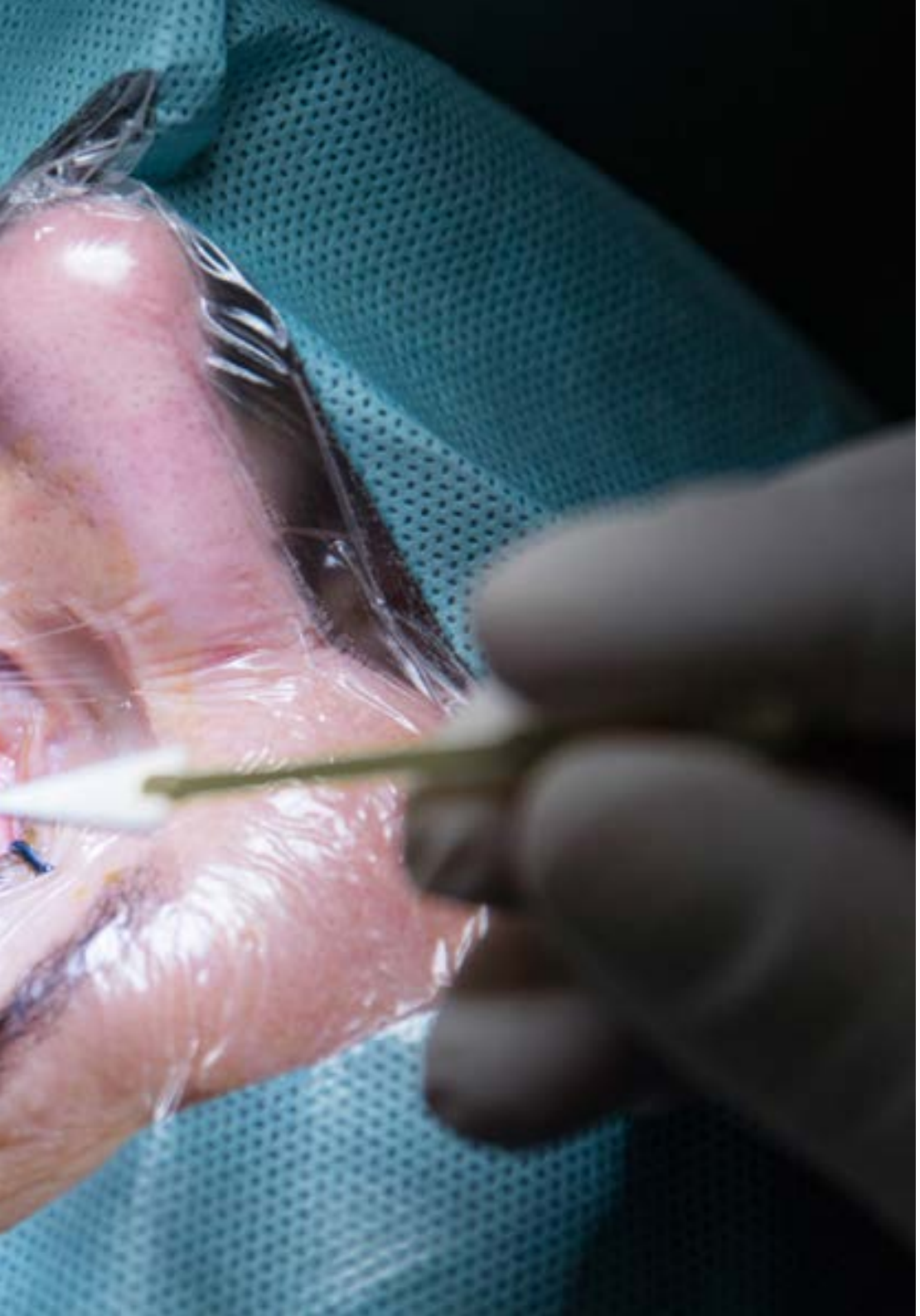
Objectives

Through this Postgraduate Certificate, students will learn about the history and evolution of this Excimer Laser technology, as well as how it works and the actions it generates in the human cornea during treatment. In addition, they will also be able to deepen their knowledge of the basic mathematical concepts used in this type of surgery. In short, this program aims to provide students with the skills and knowledge necessary to perform this surgical technique effectively and safely in clinical practice.

Discover the past and future of the Excimer Laser in Refractive Surgery. In this Postgradaute Certificate, you will learn all about the beginnings of this technique, its evolution over the years and the most recent advances"

General Objectives

- Delve deeper 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
- Deepen knowledge on the operation of an excimer laser and what are the fundamental characteristics of some excimer platforms
- Investigate the indications and contraindications of Refractive Surgery, as well as the algorithms used for the surgery
- Get updated 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
- Delve into 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

- 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

Don't miss the opportunity to specialize in refractive surgery with this 100% online Postgradaute Certificate in Excimer Laser in Refractive Surgery. Sign up now and take your career to the next level!"

03

Course Management

To ensure quality training in the Postgraduate Certificate in Excimer Laser in Refractive Surgery, TECH has a highly qualified and experienced teaching team in the field of ophthalmology and refractive surgery. The professionals in charge of directing the program are committed to providing an elite education to all students, and to this end, they have designed a comprehensive and up-to-date academic program that addresses everything from theoretical fundamentals to clinical practice. In addition, it is supported by the most advanced technology and resources so that students can acquire solid and applicable knowledge in their professional performance.

The direction of the Postgraduate Certificate is focused on providing students with the tools and skills necessary to successfully perform in this ever-evolving medical specialty"

International Guest Director

Dr. Beeran Meghpara is an internationally renowned ophthalmologist specializing in Cornea, Cataract and Laser Refractive Surgery.

He has served as Director of Refractive Surgery and member of the Cornea Service at Wills Eye Hospital in Philadelphia, a world leading center in the treatment of eye diseases. Here, this expert has performed all forms of Corneal Transplantation, including Partial Thickness DMEK and DALK. In addition, he has extensive experience with the latest technology in Cataract Surgery, including Femtosecond Laser and Intraocular Lens Implants, which correct Astigmatism and Presbyopia. He also specializes in the use of Bladeless Custom LASIK, Advanced Surface Ablation and Phakic Intraocular Lens Surgery to help patients reduce their dependence on glasses and contact lenses.

In addition, Dr. Beeran Meghpara has excelled as a scholar by publishing numerous articles and presenting his research at local, national and international conferences, contributing to the field of Ophthalmology. Likewise, he has been honored with the prestigious Golden Apple Resident Teaching Award (2019), in recognition of his dedication to teaching residents in Ophthalmology. In addition, he has been selected by his peers as one of Philadelphia magazine's Best Doctors (2021-2024) and Best Doctor by Castle Connolly (2021), a leading research and information resource for patients seeking the best medical care.

In addition to his clinical and academic work, he has served as an ophthalmologist for the Philadelphia Phillies baseball team, underscoring his ability to handle highly complex cases. In this sense, his commitment to technological innovation, as well as his excellence in medical care, continues to raise the standards in ophthalmic practice worldwide.

Dr. Beeran Meghpara

- Director of the Department of Refractive Surgery at Wills Eye Hospital, Pennsylvania, United States
- Ophthalmic Surgeon at the Center for Advanced Ophthalmic Care, Delaware
- Fellow in Cornea, Refractive Surgery and External Disease at the University of Colorado
- Resident Ophthalmology Physician at Cullen Eye Institute, Texas
- Intern at St. Joseph's Hospital, New Hampshire
- Doctor of Medicine from the University of Illinois, Chicago
- Graduate of the University of Illinois, Chicago
- Selected for the Alpha Omega Alpha Medical Honor Society
- Awards: Golden Apple Resident Teaching Award (2019), Best Doctor from, Philadelphia Magazine (2021-2024), Best Doctor from Castle Connolly (2021)

Thanks to TECH, you will be able to learn with the best professionals in the world"

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 the Spanish Society of Ophthalmology, La International Society of Ocular Inflammation, International Society of Ocular Inflammation

04

Structure and Content

The Postgraduate Certificate is structured by a comprehensive syllabus of ten items, each of which covers a specific topic related to the use of the excimer laser in refractive surgery. The first one for example focuses on the physical principles of the excimer laser, including concepts such as wavelength and description of the excimer laser. The following focus on the evolution of LASIK and the tissue effects of the excimer laser, the mathematics of LASIK and predictive formulas for treatment, respectively, and many other topics that follow. In summary, the program offers a complete and detailed overview of the use of the Excimer Laser in Refractive Surgery, covering from the physical principles to the different types of lasers available and their applications in clinical practice.

This Postgraduate Certificate in Excimer Laser in Refractive Surgery has excellent multimedia resources such as infographics and interactive summaries: the best allies for 100% online study"

Module 1. Excimer laser: platforms and operation

1.1. Physical principles of the excimer laser
- 1.1.1. Concept: Laser and Excimer
- 1.1.2. Wave Length
- 1.1.3. Description of the excimer laser
- 1.1.4. Emission systems

1.2. Evolution of Lasik
- 1.2.1. Introduction
- 1.2.2. Keratophakia
- 1.2.3. Epikeratophakia
- 1.2.4. Automated in situ lamellar keratomileusis

1.3. Tissue effects of the excimer laser
- 1.3.1. Introduction
- 1.3.2. Experimental Studies
- 1.3.3. Standard Lasik
- 1.3.4. Complicated Lasik

1.4. Scarring changes
- 1.4.1. Introduction
- 1.4.2. Changes in the tear film
- 1.4.3. Changes in the corneal epithelium
- 1.4.4. Changes in the corneal stroma

1.5. Mathematics for Lasik
- 1.5.1. Ablation depth per diopter
- 1.5.2. Dogmas of lasik
- 1.5.3. Mathematics for primary Lasik
- 1.5.4. Mathematics for Lasik retouching

1.6. Lasik predictive formulas
- 1.6.1. Pretreatment protocols
- 1.6.2. Ablation protocols: single and multimodal zone
- 1.6.3. Limits of correction for primary lasik
- 1.6.4. Adjustment factors for refractive correction with lasik

1.7. Amaris 1050 RS Laser
- 1.7.1. Characteristics and Techniques
- 1.7.2. Eyetracker 7D
- 1.7.3. Versatile software and Smart surfACE
- 1.7.4. Advantages

1.8. MEL 90 Laser
- 1.8.1. Characteristics and Techniques
- 1.8.2. Flexibility
- 1.8.3. Triple A
- 1.8.4. Presbyond

1.9. Wavelight EX 500 Laser
- 1.9.1. Characteristics and Techniques
- 1.9.2. CustomQ Ablation
- 1.9.3. Transepithelial PRK
- 1.9.4. READ Treatment

1.10. Femtosecond laser
- 1.10.1. Characteristics and Techniques
- 1.10.2. Function and advantages over microkeratomes
- 1.10.3. Ziemer Z8 and Catalys
- 1.10.4. Wavelight FS200, IFS Advanced y Victus

The study platform of this degree is accessible from anywhere in the world where you have a device connected to the Internet. Enroll now with TECH!"

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:

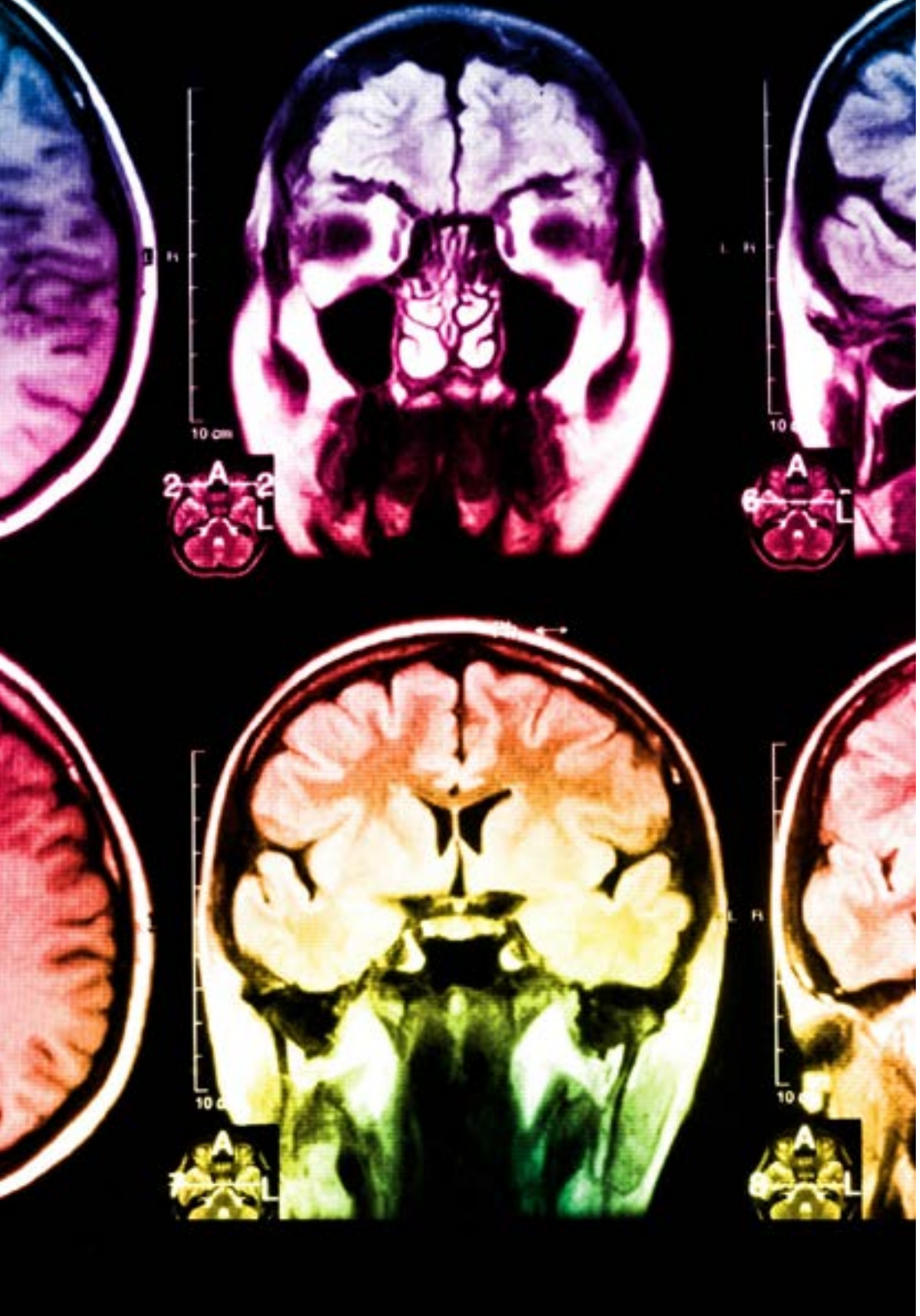
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better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

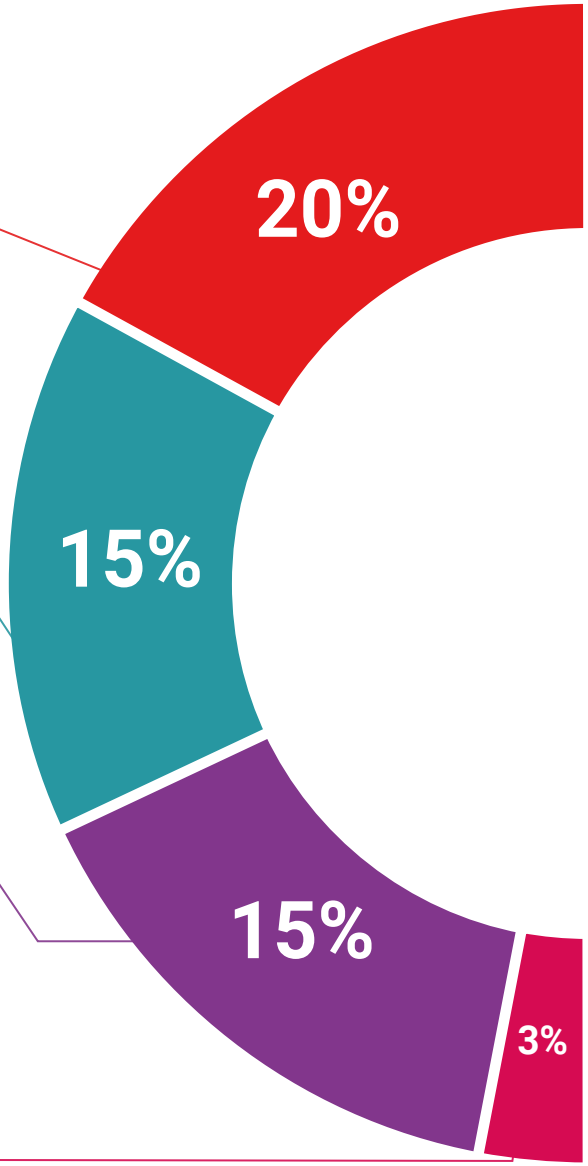
Interactive Summaries

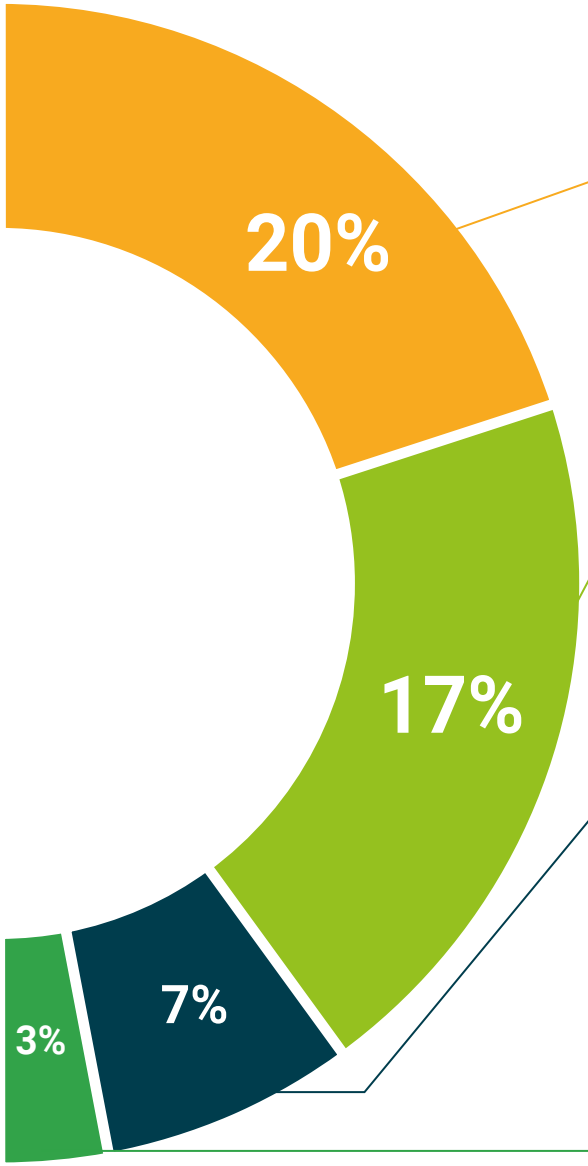
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.

06

Certificate

The Postgraduate Certificate in Excimer Laser 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.

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

This **Postgraduate Certificate in Excimer Laser 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 Excimer Laser in Refractive Surgery**

Official Nº of Hours: **150 h.**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Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Excimer Laser in Refractive Surgery

This is a qualification awarded by this University, equivalent to 150 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

*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.

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Postgraduate Certificate

Excimer Laser in Refractive Surgery

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