Postgraduate Diploma

Preoperative Refractive Surgery

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Postgraduate Diploma

Preoperative 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/us/medicine/postgraduate-diploma/postgraduate-diploma-preoperative-refractive-surgery**

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01

Introduction

One of the most important moments in the process of Refractive Surgery is the preoperative preparation. Thus, the correct evaluation of the patient's visual health, the application of precise techniques and tests to assess the pathology, refractory defects, as well as care prior to surgery are essential. Based on this exhaustive procedure, this institution has designed this academic option that offers ophthalmology specialists a real update on the methodology used to assess the suitability of the practice of this surgery, ocular analysis, therapeutic alternatives and postoperative follow-up. All this, in only 6 months and with the most advanced syllabus, enriched by numerous first class multimedia didactic material.

Get an update on Preoperative Refractive Surgery in 450 teaching hours and with the most rigorous syllabus prepared by the best specialists"

The evaluation of visual quality, the methods and diagnostic measures used to select those patients with Myopia, Astigmatism or Hyperopia suitable for Refractive Surgery is key to the success of this intervention. For this reason, it is essential that, when faced with a surgical procedure that is in such high demand due to its benefits for ocular health, the specialist is aware of the preoperative tests and the techniques used before going to the operating room.

This reality leads ophthalmologists to be aware of the protocols in patient care, the clinical criteria for patient choice, as well as the procedures used to assess refractive defects and the various therapeutic options. A wide field of action that brings together this Postgraduate Diploma designed by TECH to provide the graduate with an unparalleled update in Preoperative Refractive Surgery.

An intensive academic course of 450 teaching hours with an advanced syllabus developed by professionals with extensive clinical experience and numerous interventions performed in this subspecialty. Undoubtedly, a unique opportunity to keep abreast of advances in the field of preparation for this surgical practice by the hand of real experts.

In addition, students have access to video summaries of each topic, videos in detail, specialized readings and clinical case studies that can be accessed with total comfort from a digital device with internet connection and at any time of the day. In addition, thanks to the Relearning method, you will be able to consolidate the concepts covered in a simple way and thus reduce the long hours of study.

A unique and flexible university degree that facilitates the balance of the daily professional and personal activities of ophthalmologists with a quality and cutting-edge program.

This **Postgraduate Diploma in Preoperative 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

The audiovisual material in this qualification will help you to keep up to date with the processes of patient assessment prior to surgery"

Compatibilize your professional activities without problems with this 100% online and flexible Postgraduate Diploma"

An academic itinerary that will take you through the different medical-surgical treatments for Astigmatism, Myopia and Hyperopia.

Get an effective update in just 6 months on the preparation and instrumentation of Refractive Surgery.

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

In order to promote the updating of ophthalmology professionals, TECH provides first class teaching tools using the latest technology applied to university teaching. In this way, and thanks to the advanced syllabus of this program, students will achieve in only 6 months a complete update in the most effective and precise procedures performed for the patient's choice and preparation for Refractive Surgery.

Increase your patient care skills in the time prior to Refractive Surgery thanks to this program"

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 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 graduation defects of patients
- Be aware of the different lenses that are used for this surgery without acting on the cornea or the crystalline lens
- To deepen 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. 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 3. 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

03

Course Management

Undoubtedly, this Postgraduate Diploma is distinguished by the high level of competence of its teaching staff. A faculty made up of true experts in Refractive Surgery with extensive accumulated experience in this subspecialty and in the field of ophthalmologic research and innovation. Thus, students who take this program will have the guarantee of having access to the most rigorous and current information on preoperative surgery in this type of surgical intervention.

You will have at your disposal an excellent team of specialists in Refractive Surgery with whom you will be able to solve any doubt about the content of this program"

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. Meghpara, Beeran

- 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, International Society of Ocular Inflammation, International Society of Ocular Inflammation

Professors

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. 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 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

04

Structure and Content

Great specialists in the field of Refractive Surgery have been involved in the preparation of the syllabus of this Postgraduate Diploma. His versed knowledge in this field and his numerous interventions are reflected in the content of this program. Thus, the graduate will be aware of the main therapeutic options for refractive defects and the processes of evaluation and preparation of the patient for this type of surgery. A unique upgrade opportunity that only TECH Technological University offers.

A study plan that will allow you to be up to date on the methods and diagnostic measures to evaluate ocular health prior to Refractive Surgery"

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

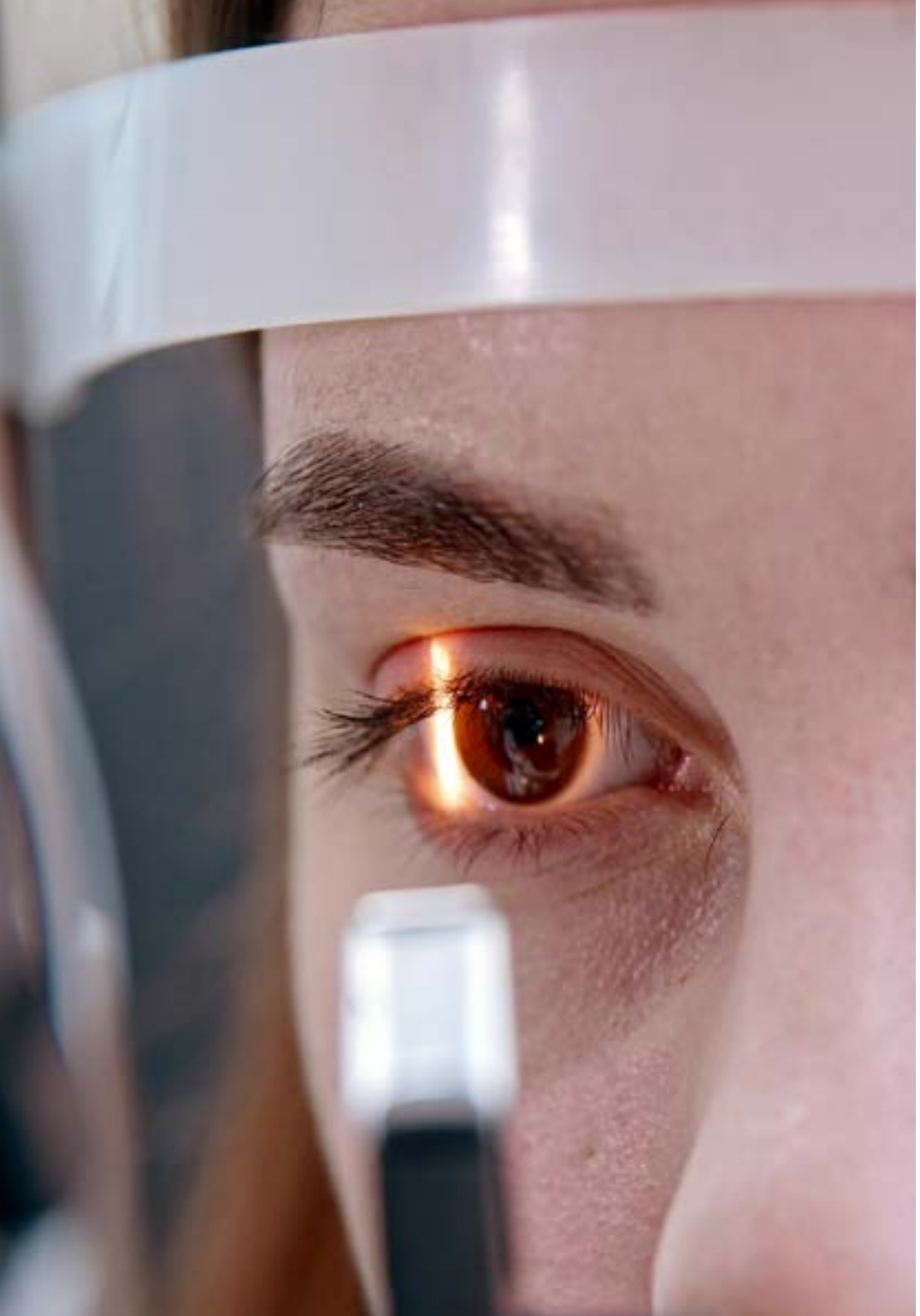
1.6. Diagnostic methods and measures III
- 1.6.1. Color vision
- 1.6.2. Pupil and depth of field and depth of focus
- 1.6.3. Importance of the tear and the ocular surface in visual quality
- 1.6.4. Importance of vitreous and retina in visual quality

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. Preoperative Evaluation for Refractive Surgery

2.1. Patient selection for Refractive Surgery
- 2.1.1. Age
- 2.1.2. Refractive defects
- 2.1.3. Refractive stability
- 2.1.4. Presence of contraindications

2.2. Medical History
- 2.2.1. Current disease
- 2.2.2. Personal background
- 2.2.3. Family Background
- 2.2.4. Previous surgeries

2.3. Ophthalmologic History
- 2.3.1. History of previous procedures
- 2.3.2. History of personal ocular pathologies
- 2.3.3. Family history of ocular pathologies
- 2.3.4. History of contraindication in another center

2.4. Medications
- 2.4.1. General Notions
- 2.4.2. Amiodarone
- 2.4.3. Venlafaxine
- 2.4.4. Sumatriptan
- 2.4.5. Isotrethionine

2.5. Expectations
- 2.5.1. Patient Expectations
- 2.5.2. What we can offer
- 2.5.3. Alternatives to the treatment proposed by the patient
- 2.5.4. Avoid problems

2.6. Physical Evaluation
- 2.6.1. Visual acuity
- 2.6.2. Keratometry
- 2.6.3. Biomicroscopy
- 2.6.4. Fundus

2.7. Preoperative studies
- 2.7.1. Ocular surface analysis
- 2.7.2. Corneal biomechanics analysis
- 2.7.3. Biometry and pupils
- 2.7.4. Optical Coherence Tomography (OCT)

2.8. Study of the retina
- 2.8.1. Papilla
- 2.8.2. Macula
- 2.8.3. Vascular Disorders
- 2.8.4. Peripheral retina

2.9. Other studies
- 2.9.1. Endothelial count
- 2.9.2. Meibography
- 2.9.3. Contrast Sensitivity
- 2.9.4. Aberrometry

2.10. Special considerations for each type of surgery
- 2.10.1. Laser Refractive Surgery
- 2.10.2. Refractive surgery with intraocular lens
- 2.10.3. Phaco-refractive surgery
- 2.10.4. Secondary implant surgery

Module 3. Surgical preparation and instrumentation

3.1. Nursing Patient Care
- 3.1.1. Staff
- 3.1.2. Informed Consent
- 3.1.3. Pre-Op Instructions
- 3.1.4. Preoperative mediation

3.2. Day of surgery
- 3.2.1. Signature of consent
- 3.2.2. Recovery room
- 3.2.3. Operating room clothing
- 3.2.4. Eye anesthesia

3.3. Entrance to operating room
- 3.3.1. Patient positioning
- 3.3.2. Anesthesia instillation
- 3.3.3. Periocular cleaning
- 3.3.4. Preparation of eyes

3.4. Surgical instrumentation
- 3.4.1. Blefarostat
- 3.4.2. Tweezers
- 3.4.3. Cannulas Irrigation
- 3.4.4. Hemostetas

3.5. Ocular fixation and corneal marking
- 3.5.1. Autofix
- 3.5.2. Uni or bilateral fixation
- 3.5.3. Visual axis marking
- 3.5.4. Corneal Markings

3.6. The Excimer Laser
- 3.6.1. Calibration
- 3.6.2. Optical zone and ablation depth
- 3.6.3. Maintenance
- 3.6.4. Cost limitations

3.7. Microkeratomes
- 3.7.1. Potential visual loss
- 3.7.2. Nasal hinge microkeratomes
- 3.7.3. Upper hinge microkeratomes
- 3.7.4. New microkeratomes

3.8. Suction rings and flap
- 3.8.1. Suction ring function
- 3.8.2. Intraocular pressure
- 3.8.3. Microkeratome passage
- 3.8.4. Flap management

3.9. Femtosecond laser
- 3.9.1. Suction ring
- 3.9.2. Femtosecond laser for the *flap*
- 3.9.3. Advantages over the microkeratome
- 3.9.4. Flap management

3.10. Excimer laser ablation
- 3.10.1. Myopia
- 3.10.2. Hyperopia
- 3.10.3. Astigmatism and combinations
- 3.10.4. Immediate postoperative management

Integrate into your daily practice the most effective and current procedures for the immediate postoperative management of patients undergoing 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.

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:

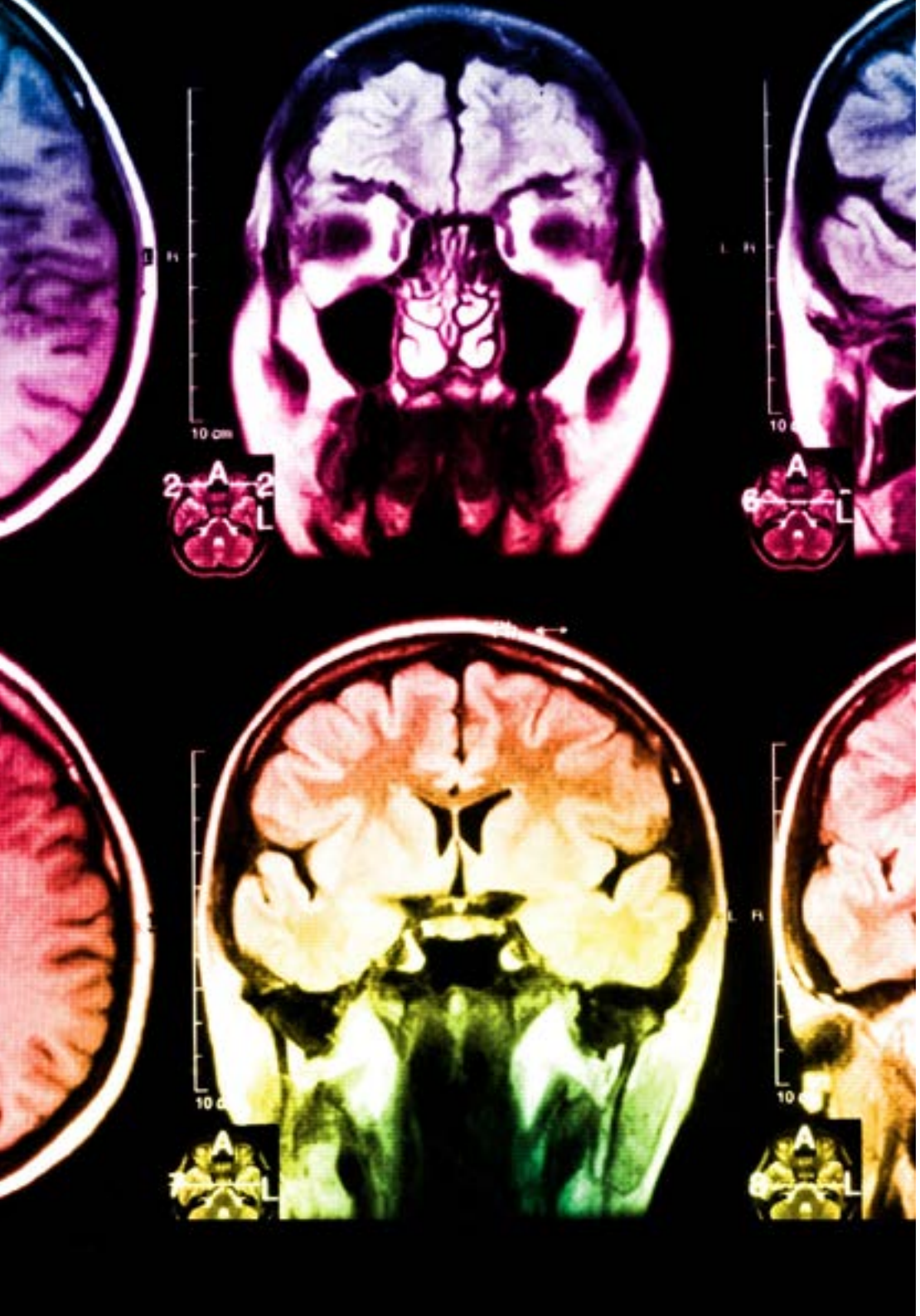
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better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

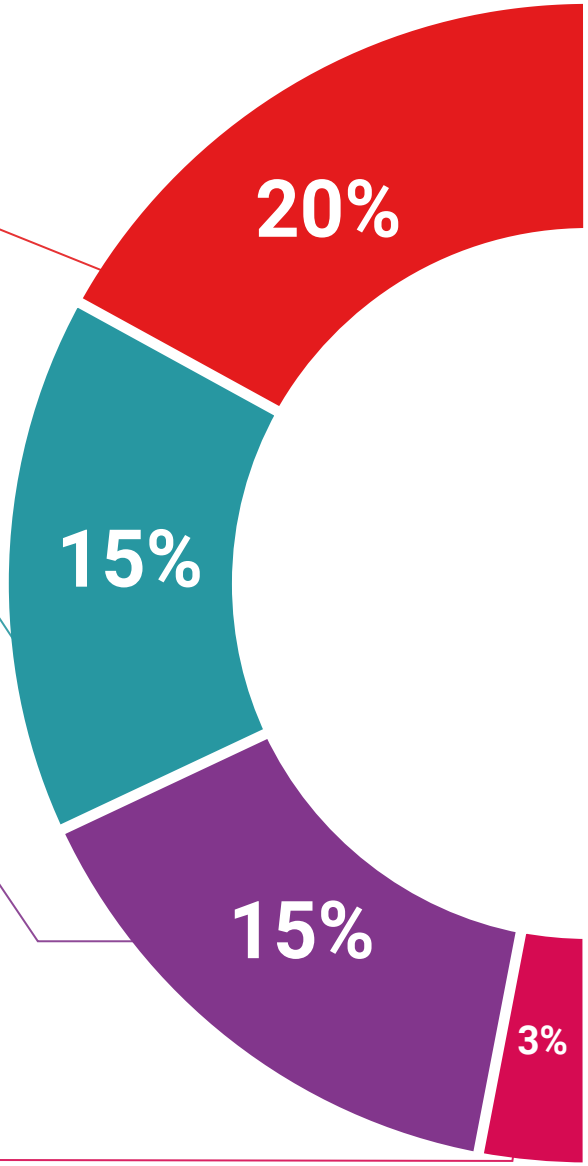
Interactive Summaries

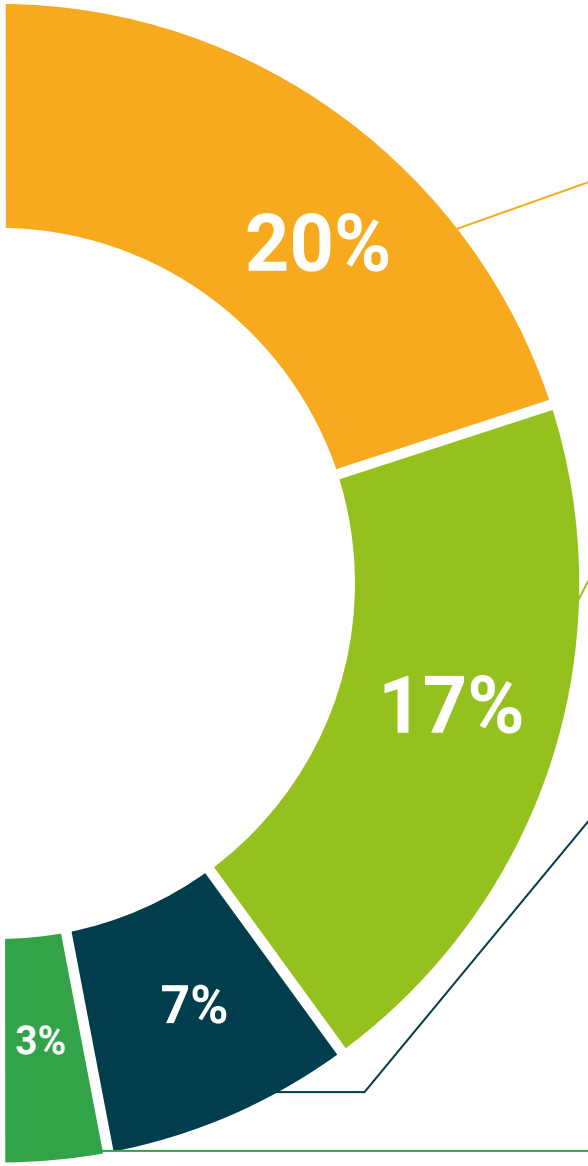
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Diploma in Preoperative Refractive Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 Diploma in Preoperative 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 diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Preoperative Refractive Surgery**

Official Nº of Hours: **450 h.**


tech technological university

Awards the following

DIPLOMA

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Preoperative Refractive Surgery

This is a qualification awarded by this University, equivalent to 450 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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