

Postgraduate Certificate

Optometric Procedures in Corneal,
Intraocular and Cataract
Refractive Surgery





Postgraduate Certificate

Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery

Course Modality: Online

Duration: 6 weeks

Certificate: TECH - Technological University

6 ECTS Credits

Teaching Hours: 150

Website: www.techtute.com/us/medicine/postgraduate-certificate/optometric-procedures-corneal-intraocular-cataract-refractive-surgery

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01

Introduction

This course provides optometrists with the necessary knowledge to be part of a refractive surgical team, performing most of the preoperative tests, collaborating in the surgical act, and performing the scheduled postoperative revisions. For this purpose, the two main groups of techniques will be addressed: corneal and intraocular. For each of them, the most modern techniques and the most important and necessary aspects optometrists must know in order to perform their work safely and efficiently will be studied.





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The latest advances in the area of optical technologies and clinical optometry compiled in a highly efficient Postgraduate Certificate that will optimize your effort with the best results”

Refractive surgery is increasingly present in our society. Advances in techniques, instrumentation and the extensive clinical experience of the professionals involved have made it a safe and effective option for visual correction. The optometrist, as a specialist in the ocular optical system, is a professional especially qualified to form part of surgical-refractive teams. For this reason, more and more optometrists are being hired by ophthalmology clinics or hospital ophthalmology departments to perform preoperative tests, give advice and optometric support to the refractive surgeon, and carry out follow-up visits after the operation.

Amblyopias are among the main causes of decreased vision in the general population. These appear as an alteration in the development of vision at an early age, affecting not only visual acuity, but also many visual functions. The importance of detecting amblyopia lies in the fact that, if they are not treated, and the sooner the better, they will continue to affect visual function throughout life.

Continuous training in the latest optometric technologies and treatments is essential in professional updating, preparing to take on jobs that are increasingly integrated into the healthcare system, both public and private.

The Postgraduate Certificate in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery covers the main fields of optometrist action, always highly updated and with a first level teaching staff. The study plan has been designed from the perspective and experience of experts highly specialized in their modules, and immersed in the clinical world, which has led us to know the current and future training challenges.

This Postgraduate Certificate has been clearly and robustly directed to the clinical field, preparing students to develop in this field with extensive theoretical and practical knowledge in optometry.

Students will follow modules, each of them structured in 10 topics. Each topic consists of a theoretical introduction, explanations by the professor, activities, etc., in such a way that learning becomes an enjoyable journey to high-level knowledge in Optical Instrumentation and Clinical Optometry.

This **Postgraduate Certificate in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery** is the most complete and up-to-date educational program on the market. The most important features of the program include:

- ♦ More than 100 clinical cases presented by experts in the different specialties.
- ♦ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- ♦ The latest developments in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery.
- ♦ The presentation of hands-on workshops on procedures, diagnostic and therapeutic techniques.
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course.
- ♦ 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.



Increase your decision-making confidence by updating your knowledge through this Postgraduate Certificate”

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This Postgraduate Certificate is the best investment you can make when choosing a refresher program to update your existing knowledge of Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery”

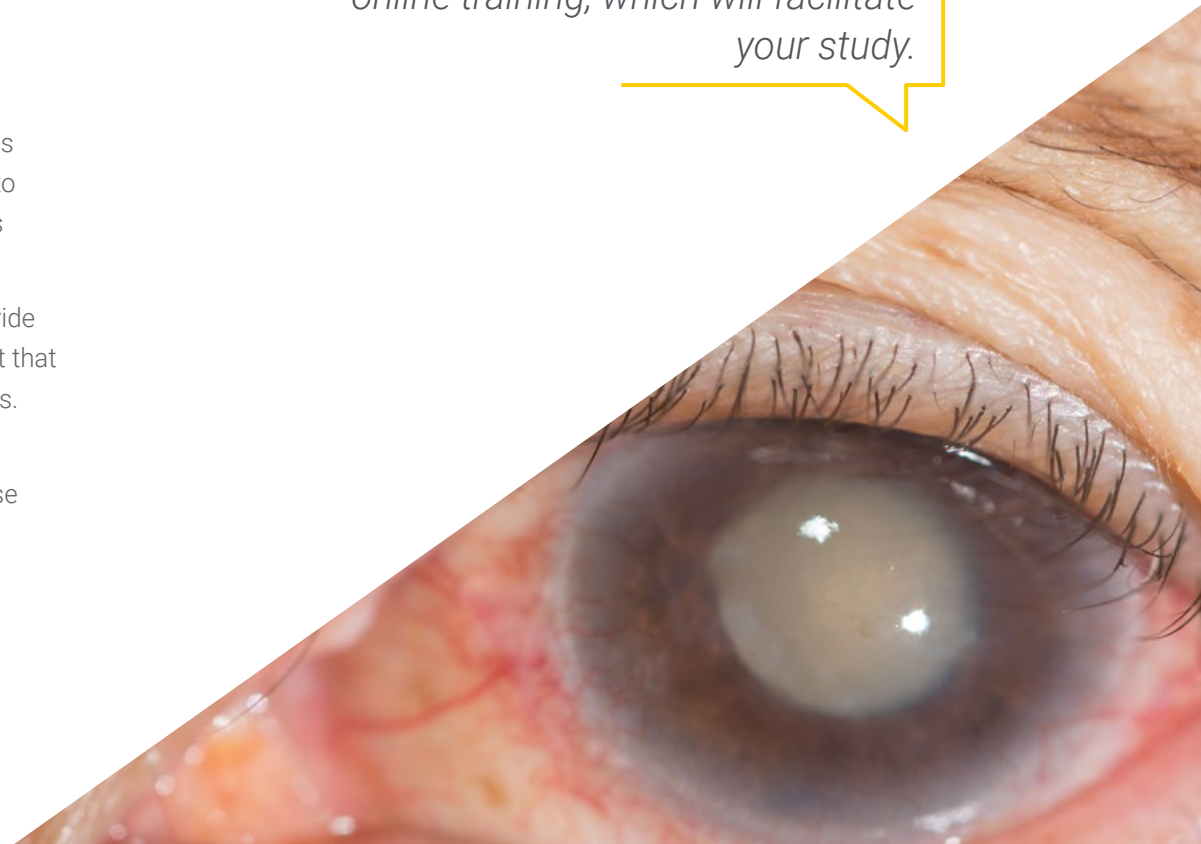
The teaching staff includes professionals from the field of in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery, who bring their experience to this training, as well as renowned specialists from leading societies and prestigious universities.

The 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 training experience designed to train for real-life situations.

This program is designed around Problem Based Learning, where the medical professional must try to solve the different professional practice situations that arise during the course. For this purpose, the specialist will be assisted by an innovative, interactive video system created by renowned and experienced experts in treating pediatric emergencies.

All the necessary methodology for non-specialist medical professionals in the field of clinical optometry, in a specific and concrete Postgraduate Certificate.

We have the best didactic material, an innovative methodology and a 100% online training, which will facilitate your study.



02 Objectives

This Postgraduate Certificate is designed to effectively update physician knowledge in order to provide quality care based on the latest scientific evidence that guarantees patient safety.





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If you are looking for success in your profession, we can help you achieve it. We offer you the most complete training on Optical Technologies and Clinical Optometry”



General Objective

- Advise patients in optical centers about the different procedures and their indications

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Seize the opportunity and take the step to get up to date on the latest developments in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery”





Specific Objectives

- ♦ In-depth understanding of ocular optics and how to act on it to adjust refraction by modifying corneal power
- ♦ In-depth understanding of ocular optics and how to act on it to modify refraction with intraocular lenses
- ♦ Handle the excimer laser and ablation profiles according to the refraction being treated
- ♦ Study the different techniques of corneal refractive surgery
- ♦ Describe the preoperative tests necessary for surgical indication in corneal refractive surgery
- ♦ Manage the role of the optometrist in the preoperative, intraoperative and postoperative process in corneal refractive surgery
- ♦ Deepen in the postoperative medical treatment in corneal refractive surgery
- ♦ Gain in-depth knowledge of the normal evolution and complications in corneal refractive surgery
- ♦ Study the techniques used in intraocular refractive surgery
- ♦ Describe phakic lenses, their indications and necessary preoperative testing
- ♦ Describe lenses for Pseudophakic eyes, their indications and necessary preoperative testing
- ♦ Specialize in the surgical procedure of clear lens and cataract surgery
- ♦ Learn how to perform ocular biometry and intraocular lens calculation for clear lens and cataract surgery
- ♦ Apply the different formulas for calculating the pseudophakic intraocular lens in normal eyes
- ♦ Deepen in the special procedures for calculating the pseudophakic intraocular lens in eyes that have previously undergone corneal refractive surgery
- ♦ Have a comprehensive understanding of medical and optometric treatments after surgery
- ♦ Describe the main complications that can occur in intraocular refractive surgery

03

Course Management

The teaching staff includes leading experts in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery, who bring their work experience to this training. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.



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Leading professionals in the field have come together to teach you the latest advances in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery”

Management



Dr. Calvache Anaya, José Antonio

- ♦ Doctor in Optometry and Vision Sciences
- ♦ Postgraduate Diploma in Statistics Applied to Health Sciences
- ♦ Optometrist at Clínica Baviera in Palma de Mallorca



04

Structure and Content

The content structure has been designed by a team of professionals who recognize the implications of training in the medical practice of in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery, who are aware of the current relevance of specialization to be able to treat pediatric patients with urgent pathology, and who are committed to quality teaching through new educational technologies.





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This Postgraduate Certificate in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery will help you keep up to date in order to provide comprehensive quality care to patients”

Module 1. Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery

- 1.1. Physical Basis of Refractive Change in the Corneal Plane
 - 1.1.1. Theoretical Eye Solution
 - 1.1.1.1. Theoretical Emeropip Eye
 - 1.1.1.2. Theoretical Ametropic Eye
 - 1.1.2. Change in Refraction as a Function of Change in ACD
 - 1.1.3. Change in Refraction as a Function of Change in Corneal Power
- 1.2. Corneal Refractive Surgery Techniques
 - 1.2.1. Corneal Anatomy and Physiology
 - 1.2.2. Optical Foundation
 - 1.2.3. LASIK
 - 1.2.4. PRK
 - 1.2.5. LASEK
 - 1.2.6. SMILE
 - 1.2.7. PRESBILASIK
 - 1.2.8. Re-treatments
- 1.3. Types of Laser
 - 1.3.1. The Excimer Laser
 - 1.3.2. Ablation Profiles
 - 1.3.3. Optometrists in the Laser Refractive Operating Room
 - 1.3.4. Surgery Scheduling and Safety Protocols
 - 1.3.5. Creation of a Nomogram
- 1.4. Preoperative Testing for Corneal Refractive Surgery
 - 1.4.1. Corneal Topography and Tomography
 - 1.4.1.1. Normal Corneal Topography
 - 1.4.1.2. Corneal vs. Refractive Astigmatism: Applying Javal's Rule
 - 1.4.1.3. Pathological Topographies
 - 1.4.1.4. Suspicious Topographies
 - 1.4.2. Pachymetry
 - 1.4.2.1. Normal Values, Limits and Fine Pachymetries
 - 1.4.2.2. Surgery Limitations due to Pachymetry



- 1.4.3. Refraction
 - 1.4.3.1. Visual Acuity
 - 1.4.3.2. Subjective Refraction vs. Objective Refraction
 - 1.4.3.3. Cycloplegic Refraction
 - 1.4.3.4. Surgical Indication
- 1.4.4. Test Verification
 - 1.4.4.1. Pre-surgical Briefing
- 1.5. Postoperative Period and Complications in Corneal Refractive Surgery
 - 1.5.1. Intra-Operative
 - 1.5.1.1. Correcting Programming Errors by Vectors of Dioptric Powers
 - 1.5.1.2. Incomplete Lenticule
 - 1.5.1.3. Complete Lenticule
 - 1.5.1.4. Loss of Epithelium
 - 1.5.2. Post-Operative
 - 1.5.2.1. Flap Dislocation
 - 1.5.2.2. Keratitis Sicca
 - 1.5.2.3. Infection.
 - 1.5.2.4. Epithelial Growth at the Interphase
 - 1.5.2.5. Interphase Fluid Syndrome
 - 1.5.2.6. Cortico-Dependent Increase in Intraocular Pressure
 - 1.5.2.7. Toxic Anterior Segment Syndrome (TASS)
 - 1.5.2.8. Loss of Visual Quality
- 1.6. Physical Basis of Refractive Change Induced by Intraocular Lenses
 - 1.6.1. Solution of the Theoretical Eye
 - 1.6.1.1. Phakic Lenses
 - 1.6.1.2. Pseudophakic Lenses in Clear Lens and Cataracts
- 1.7. Preoperative Testing for Intraocular Surgery
 - 1.7.1. Phakic Lenses
 - 1.7.2. Lens Surgery
- 1.8. Ocular Biometry and Intraocular Lens Calculation
 - 1.8.1. Calculation Formula for Pseudophakic Intraocular Lenses
 - 1.8.2. Calculation Formula for Phakic Intraocular Lenses
 - 1.8.3. Ultrasonic and Optical Ocular Biometry
 - 1.8.4. Intraocular Lens Power Calculation Formulas
 - 1.8.5. Calculation in Eyes Undergoing Corneal Laser Refractive
 - 1.8.5.1. Haigis Method
 - 1.8.5.2. Shammas' Method
 - 1.8.5.3. Barret True- K
- 1.9. Types of Intraocular Lens
 - 1.9.1. Monofocal Lenses
 - 1.9.2. Multifocal Lenses
 - 1.9.3. Toric Lenses
 - 1.9.4. Accommodating Lenses
- 1.10. Postoperative Period and Complications in Intraocular Refractive Surgery
 - 1.10.1. Intra-Operative
 - 1.10.2. Early Preoperatives
 - 1.10.3. Late Preoperatives



*A unique, key, and decisive
Training experience to boost your
professional development"*

05

Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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.



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Discover Re-learning, 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, 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 can experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gervas, 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 potential 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 professional medical 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 grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on 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.



Re-learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.



The physician will learn through real cases and by solving 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



In this program you will have access to the best educational material, prepared with you 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 really specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Latest Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

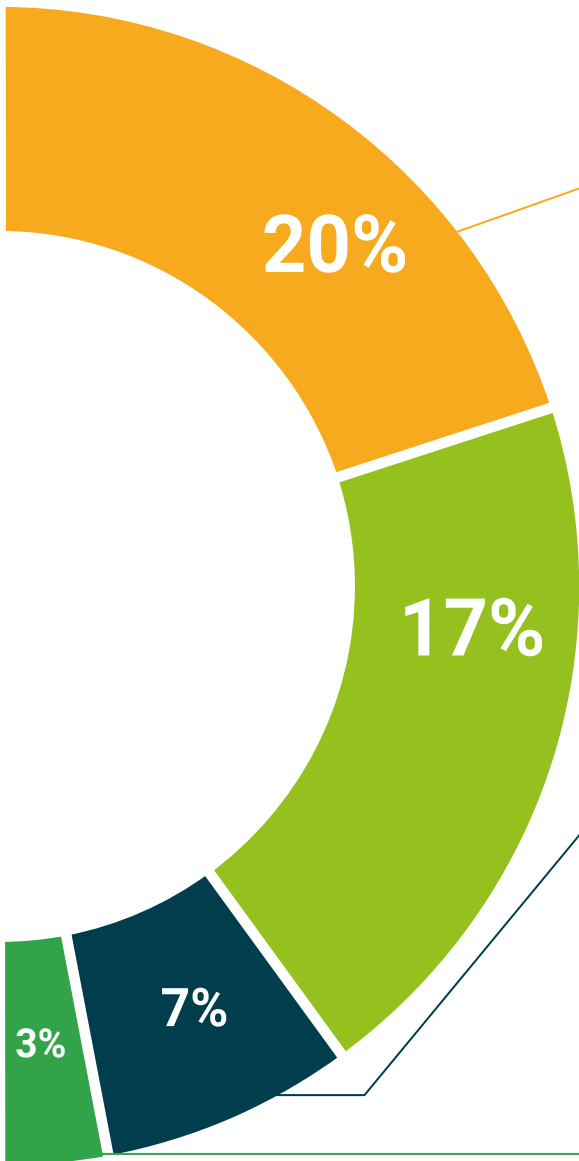
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through 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 your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert strengthens knowledge and memory, and generates confidence in our difficult future decisions.



Quick Action Guides

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



06 Certificate

The **Postgraduate Certificate in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery** guarantees, in addition to the most accurate and updated training, access to a qualification issued by **TECH -Technological University**.





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*Prepare yourself for a professional intervention in
Optometric Procedures in Corneal, Intraocular and
Cataract Refractive Surgery and get a qualification
that will endorse you as a specialist in the field”*

This **Postgraduate Certificate in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery** is the most complete and up-to-date scientific program on the market.

After the student has passed the evaluations, they will receive their corresponding certificate issued by **TECH - Technological University** via tracked delivery.

The certificate issued by **TECH - Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and will meet the requirements commonly demanded by labor exchanges, competitive examinations, and professionals from career evaluation committees.

Title: **Postgraduate Certificate in Optometric Procedures in Corneal, Intraocular and Cataract Refractive Surgery**

ECTS: **6**

Official Number of Hours: **150**



*Apostille Convention. In the event that the student wishes to have their paper diploma Apostilled, TECH EDUCATION will make the necessary arrangements to obtain it at an additional cost of €140 plus shipping costs of the Apostilled diploma.

future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development languages
virtual classroom



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