

# Postgraduate Certificate Therapeutic Options in Refractive Defects





## Postgraduate Certificate Therapeutic Options in Refractive Defects

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/therapeutic-options-refractive-defects](http://www.techtute.com/us/medicine/postgraduate-certificate/therapeutic-options-refractive-defects)

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# 01

# Introduction

Visual health care is essential to ensure a good quality of life. In this context, the correction of refractive defects, such as myopia, astigmatism and hyperopia, is crucial to prevent future ocular complications. For this reason, TECH provides healthcare professionals with training of great importance for the visual field. This 100% online program offers specialized knowledge in the therapeutic options available to correct refractive defects, from contact lenses to refractive surgery. In addition, the Relearning pedagogical methodology allows students to organize academic resources in a flexible way and adapt to their own learning pace.



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*Want to delve deeper into refractive defect correction options? This Postgraduate Certificate is what you need! Learn all about the optical and medical-surgical treatment of myopia, hyperopia, astigmatism and presbyopia”*

Refractive errors, such as nearsightedness, farsightedness and astigmatism, are very common vision problems that affect millions of people worldwide. Fortunately, there are different therapeutic options that can help correct these defects and improve people's visual quality. Therefore, it is essential for eye care professionals to have a solid background in this subject and to be up to date on the therapeutic options available.

This is why a Postgraduate Certificate on Therapeutic Options in Refractive Defects is necessary. This is awarded by TECH and will allow students to acquire the theoretical and practical knowledge necessary to understand the different aspects of the optics of the human eye, the exploration of refractive defects and the therapeutic options available.

During the program, fundamental aspects of geometric optics, diagnostic measures and the different therapeutic options to correct myopia, hyperopia, astigmatism and presbyopia will be discussed. In addition, the impact of the tear, ocular surface, vitreous and retina on the visual quality of patients will be addressed.

The methodology of the 100% online Postgraduate Certificate will consist of a combination of theoretical and practical classes, in which specialized tools and equipment for the diagnosis and treatment of refractive defects will be used and explained. Students will also have the opportunity to carry out supervised internships and case studies to strengthen their knowledge and skills. The main objective of the degree is for students to acquire comprehensive training in Therapeutic Options in Refractive Defects in order to provide quality care to their patients in the future.

This **Postgraduate Certificate on Therapeutic Options in Refractive Defects** 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 Therapeutic Options in Refractive Defects
- ◆ 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



*Learn the fundamental principles of geometrical optics in this program and acquire the knowledge necessary to characterize optical systems, trace rays and apply the law of reflection and refraction"*



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*Discover the anatomy and physical optics of the human eye in this Postgraduate Certificate on Therapeutic Options in Refractive Defects”*

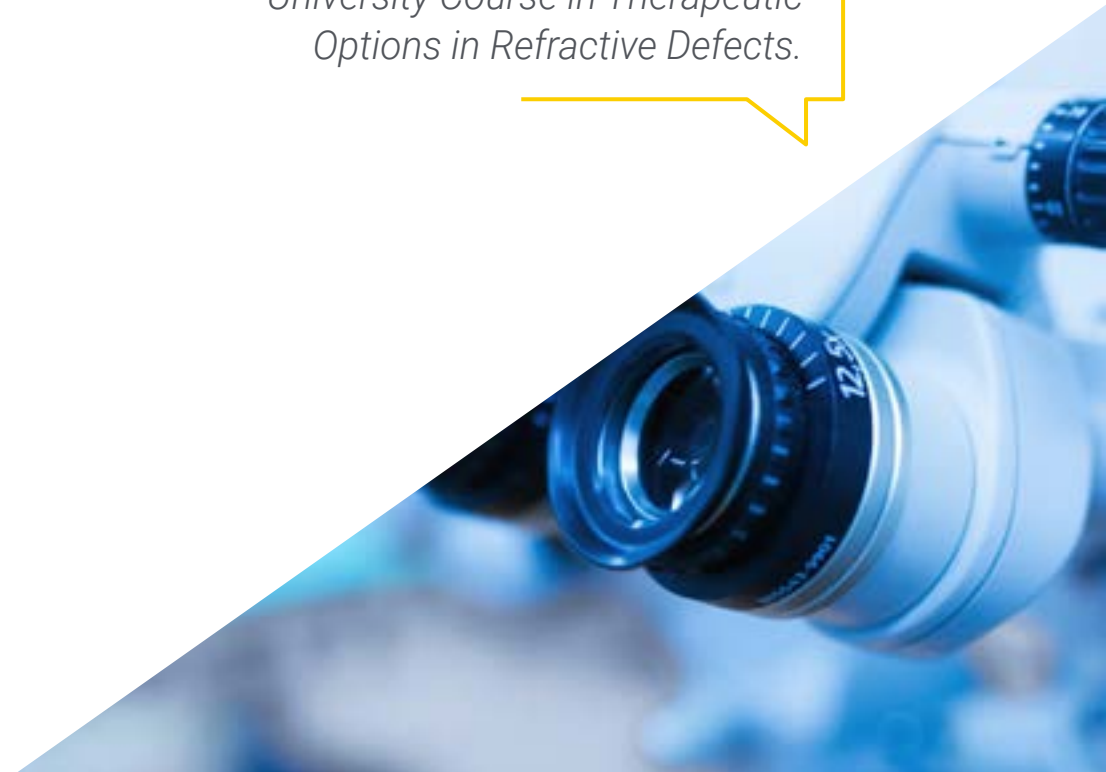
The program's teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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.

*Do you want to know the principles of geometrical optics? Join this academic program proposed by TECH and learn from experts.*

*Expand your knowledge of refractive defect correction and take your career to the next level with this University Course in Therapeutic Options in Refractive Defects.*



# 02 Objectives

The main objective of this Postgraduate Certificate in Therapeutic Options in Refractive Defects is to provide students with an up-to-date understanding of the anatomy and physical optics of the human eye, as well-being, and the fundamental principles of geometrical optics. Through the program, students will have the opportunity to update their knowledge in the methods of measurement and diagnosis of refractive defects, and deepen their knowledge of the therapeutic options available for correction. In summary, the objective of this academic program is to enable students to effectively diagnose and treat refractive errors, providing them with a solid foundation in the theoretical and practical principles necessary to do so.







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*This Postgraduate Certificate will address the importance of the tear, ocular surface, vitreous and retina in visual quality. Don't miss it and update your knowledge on Therapeutic Options in Refractive Defects!"*



## General Objectives

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- ◆ 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 investigate the indications and contraindications of Refractive Surgery, as well as the algorithms used for the surgery
- ◆ Obtain an update on the studies to be performed on patients in order to correctly assess the indication for surgery
- ◆ Describe the processes of preparation for Refractive Surgery
- ◆ 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

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- ◆ 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

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*In its commitment to provide you with a high quality education, TECH has planned the best objectives and topics for this Postgraduate Certificate in Therapeutic Options in Refractive Defects”*

# 03

# Course Management

With TECH's objective of providing specialized training in the area of ocular health, we present a Postgraduate Certificate that delves into the therapeutic options in refractive defects. This program is led by a team of highly qualified professionals with extensive experience in the field of ophthalmology, who will provide students with the necessary tools to understand in depth the anatomy and physical optics of the human eye, the principles of geometrical optics, the methods of diagnosis of refractive defects and the available correction options. In this way, students will be able to develop their skills and knowledge to specialize in a constantly evolving field of eye health.





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*It's prestigious teaching staff and online teaching methodology are combined with innovative content on Therapeutic Options in Refractive Defects that will make you become a great specialist"*



## 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

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- 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)

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*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: 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





# 04

## Structure and Content

This fully online Postgraduate Certificate has been structured with a complete module divided into ten items covering topics related to the optics of the human eye, the exploration and diagnosis of refractive errors, and the different optical and medical-surgical treatments for myopia, hyperopia, astigmatism and presbyopia. The program agenda includes general aspects of the optics of the eye, fundamental laws of geometrical optics, quantification of visual acuity and assessment of visual quality, contrast sensitivity and glare measurements, color vision, and the importance of the tear, ocular surface, vitreous and retina in visual quality. In addition, all of this is provided through an innovative TECH methodology called Relearning.







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*TECH offers you a learning method that has revolutionized professional training: Relearning, with which you will improve your future prospects immediately"*

## 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



*TECH and its program in Therapeutic Options in Refractive Defects provides you with the best professional skills, preparing you to face all current and future challenges in this area"*



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.



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*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. 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 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 Therapeutic Options in Refractive Defects guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Certificate in Therapeutic Options in Refractive Defects** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra (**official bulletin**). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Therapeutic Options in Refractive Defects**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University 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  
development languages  
virtual classroom



## Postgraduate Certificate

Therapeutic Options  
in Refractive Defects

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