

# Postgraduate Certificate

## Pupil and Optic Nerve





## Postgraduate Certificate Pupil and Optic Nerve

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

Website: [www.techtitute.com/us/medicine/postgraduate-certificate/pupil-optic-nerve](http://www.techtitute.com/us/medicine/postgraduate-certificate/pupil-optic-nerve)

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# 01

# Introduction

Attention to pathologies affecting the eye, specifically the pupil and/or the optic nerve, require specific attention due to the presence, on numerous occasions, of disorders of neurological origin that imply an added complication in the diagnosis and treatment. Dysfunction of some extraocular muscles and their nerves can produce Neuro-Ophthalmological disorders in which the causes and symptoms are combined with those of the cranial nerves. Therefore, the approach to this area of intervention sets in motion a multifactorial analysis that will be the object of study in this very complete specialization program. A study that will be developed on the basis of the greatest flexibility, so that the students can achieve their study goals with total comfort.



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*A comprehensive update on the conditions and consequences affecting the optic nerve and pupil”*

Malfunctioning cranial nerves may result in pathologies of the eye, pupil, optic nerve or extraocular muscles and their nerves. Neuro-Ophthalmological disorders can also result in dysfunction of the central pathways that control and integrate eye movement and vision.

The origin of these disorders may lie in the presence of tumors, inflammation, trauma, systemic disorders or degenerative processes that cause symptoms such as loss of vision, diplopia, ptosis, pupillary alterations, periocular pain, facial pain or headache.

Learning to diagnose correctly in this type of pathologies requires an up-to-date and precise anatomical and medical knowledge, which allows the professional to give the ideal answers to each situation. In this program, a learning process has been established that allows to combine the study and progress of the program with other occupations, offering an optimal system of specialization.

This Postgraduate Certificate in Pupil and Optic Nerve contains the most complete and up-to-date educational program on the market. The most important features of the program include:

- ♦ Practical cases presented by experts in medicine.
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development.
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning.
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*The most up-to-date diagnostics in the area of Neuro-Ophthalmology presented in a theoretical and practical way in a Postgraduate Certificate of exceptional quality"*

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*Give your competitiveness a boost of total innovation with the knowledge that this program makes available to you in an intensive and extremely high-quality manner"*

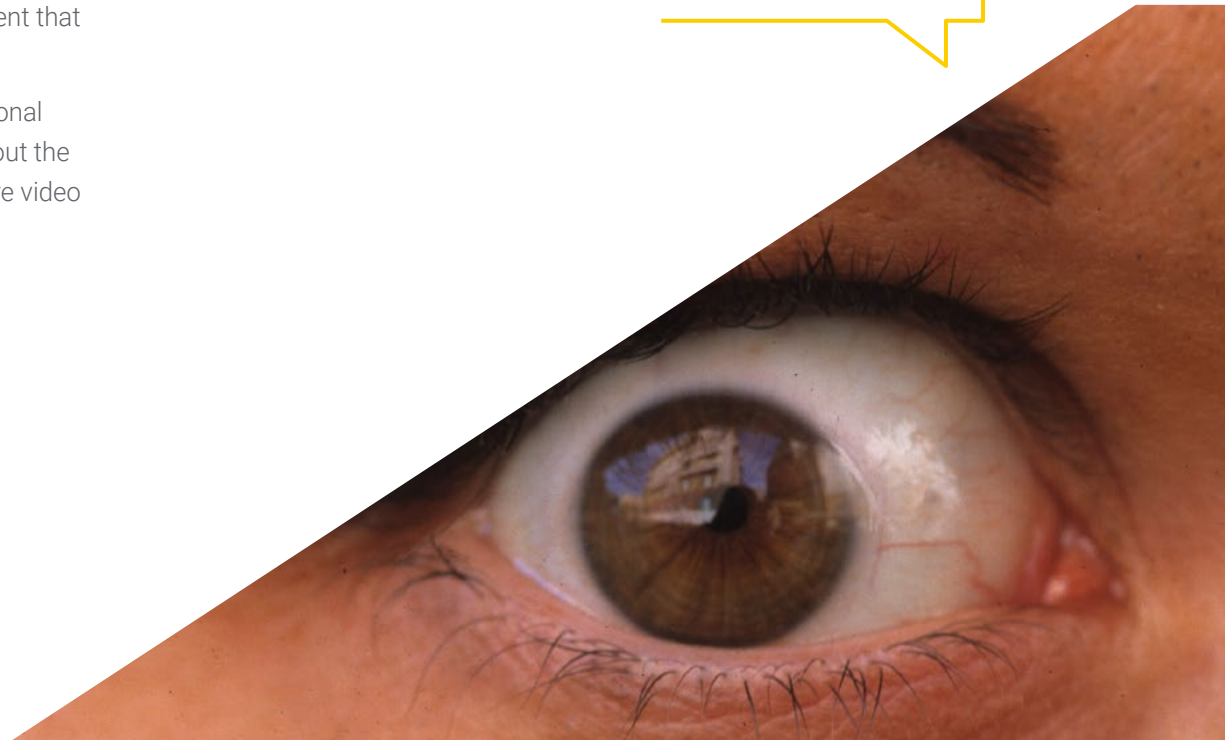
The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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 immersive training programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*With an innovative approach to work, this program is configured as a fast and effective way of professional growth.*

*Study comfortably at TECH Technological University using the most reputable teaching methodology in the online academic panorama.*





# 02 Objectives

With an intensive and high-impact learning objective, this Postgraduate Certificate has been developed with the highest level of demand in its theoretical and practical contents, in order to achieve the complete development of knowledge by the professional. The students will be able to start practicing their profession in this field with confidence, based on the acquired knowledge, offering the most adequate and innovative support to the ophthalmological pathologies of their patients in this field.





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*A complete compendium of knowledge that includes the most interesting innovation for the professional in this field of Neuro-Ophthalmology"*



## General Objectives

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- Delve into the anatomical and physiological knowledge necessary to understand the pathologies that will be developed in the following modules
- Provide the necessary knowledge for the Neuro-Ophthalmologist on the primary alterations of ocular motility and its therapeutic options
- Make known the Neuro-Ophthalmological pathologies that may occur in pediatric patients, their diagnostic approach and treatment





### Specific Objectives

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- ♦ Define concepts of pupillary anisocoria, reactivity and associated neurological pathologies
- ♦ Develop pathologies of vascular, inflammatory, infiltrative and metabolic origin of the optic nerve
- ♦ Approach the visual impact of traumatic optic nerve damage

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*Incorporate into your training a high-quality program that will allow you to give a more current and efficient perspective to your work in pupil and optic nerve disorders"*



03

# Course Management

In this Postgraduate Certificate we have the extensive experience of a group of teaching and ophthalmology professionals with high prestige in their sector. Through their competence and their direct vision of the profession, they will offer students a quality support that will boost their understanding of the contents and their conversion into real competencies.





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*A teaching staff of experts will be in charge of leading you towards excellence in the mastery of this field of work"*

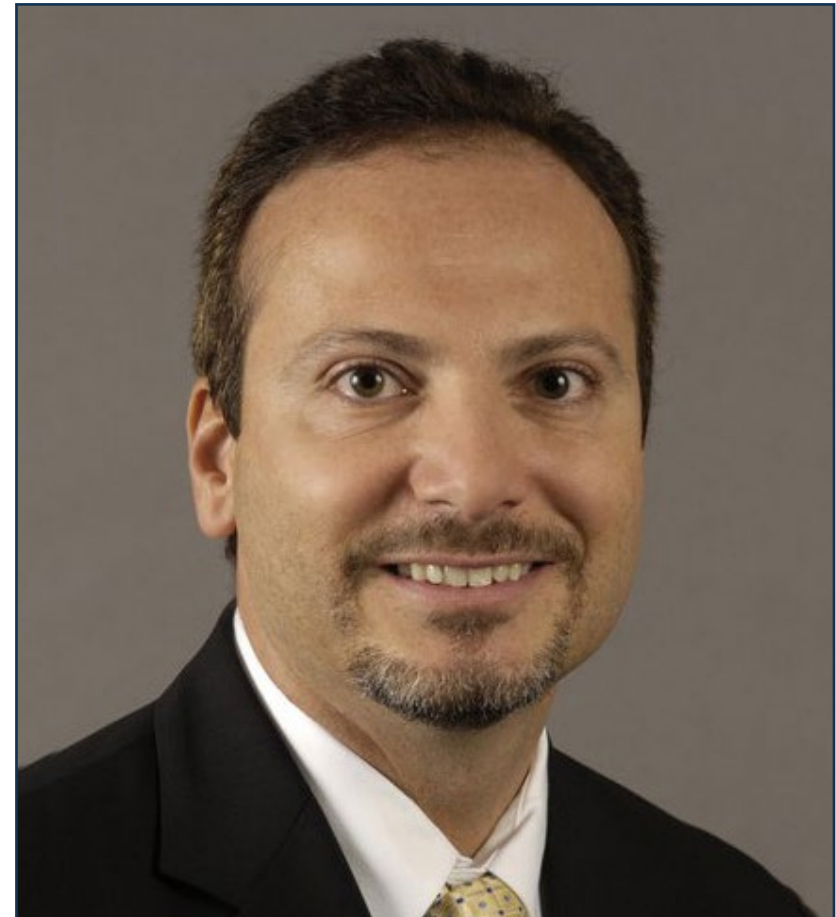
## International Guest Director

Doctor Dean Cestari is widely recognized for his dedication to the treatment of **Neuro-Ophthalmological Disorders, Strabismus and Diplopia**, which has made a significant difference in the lives of numerous patients. Therefore, I am one of only a few ophthalmologists around the world certified by the council in **Neurology and Ophthalmology**, which underlines his deep knowledge in both disciplines.

With extensive experience as a **Neuro-Ophthalmologist and Strabismus Surgeon**, Cestaria has excelled in leading healthcare settings such as **Mass Eye & Ear**. Within this same institution, he also serves as Codirector of the **Center for Thyroid Eye Disease and Orbital Surgery** where he leads a team of experts committed to medical excellence.

In addition to his outstanding clinical department, he is a pioneer in the investigation of Optical Nerve Diseases and has dedicated a large part of his work to Ischemic Optical Neuropathy. In this sense, his tireless search for solutions has led to the evaluation of innovative neuroprotective agents to preserve and restore vision affected by Vascular Occlusion. Today, Doctor Cestari has developed as an outstanding Principal Investigator (PI) and Co-PI in multiple research projects and clinical trials. To this must be added the authorship of the first Case Book of Cases Teaching Strabismus Surgery Using the Adjustable Suture Technique.

Moreover, Dean Cestari has played crucial roles in committees of renowned ophthalmological organizations. In addition, he combines his work as a clinician and researcher supervising and guiding future medical professionals, as Chairman of the Clinical Fellowship Committee and Director of the Neuro-Ophthalmology Fellowship Program at Mass Eye & Ear. In 2012, he was honored with an **Achievement Award**, given by the **American Academy of Ophthalmology**, a recognition of his outstanding contribution to Ophthalmology and scientific education.





## Dr. Cestari, Dean

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- Adult Neuro-Ophthalmologist and Strabismus Surgeon at Mass Eye & Ear
- Co-Director of *the Center for Thyroid Eye Disease and Orbital Surgery* at Mass Eye & Ear
- Associate Professor of Ophthalmology at Mass Eye & Ear.
- **Co-Founder of Total Direct Care (Atención Directa Total)**
- President of the Mass Eye & Ear Clinical Care Committee
- Director of the Mass Eye & Ear in Neuro-Ophthalmology Care Programming
- **Harvard Medical School Catalyst Grant**
- *Achievement Award (2012) from the American Academy of Ophthalmology*
- *Miembro de la Digital Media Committee of the American Academy of Ophthalmology y el Curriculum Development Committee of the North American*

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

## Management



### Dr. Luque Valentin-Fernández, María Luisa

- ♦ Head of the Ophthalmology Department of the El Escorial University Hospital, Madrid (HUEE)
- ♦ Professor of Ophthalmology, Francisco de Vitoria University, Madrid
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Specialist via MIR in Ophthalmology at the Gregorio Marañón University Hospital, Madrid
- ♦ PhD in Medicine and Surgery from the Complutense University of Madrid
- ♦ Master's Degree in Health Care Quality from the Rey Juan Carlos University of Madrid
- ♦ Postgraduate Diploma in Design and Statistics in Health Sciences, Autonomous University of Barcelona
- ♦ President of the Continuing Education Commission of the HUEE hospital
- ♦ Head of Hospital Continuing Education HUEE
- ♦ HUEE Quality Coordinator

## Professors

### Dr. Fernández Jiménez-Ortiz, Héctor

- ♦ Ophthalmologist, strabismus and Neuro-Ophthalmology section at the University Hospital of Fuenlabrada and IMO - Madrid
- ♦ Reviewer of the journal Archives of the Spanish Society of Ophthalmology
- ♦ PhD in Medicine Cum Laude Mention from the Complutense University of Madrid
- ♦ Degree in Medicine from the Autonomous University Madrid
- ♦ Master's Degree in Clinical Management and Medical and Healthcare Management from Cardenal Herrera University
- ♦ University Specialist in Health Informatics and Telemedicine by the UNED



**Dr. De las Rivas Ramírez, Nieves**

- ♦ Graduate in Medicine and Surgery. University of Zaragoza
- ♦ Ophthalmology specialist at the Serranía de Ronda Hospital, Málaga
- ♦ Currently Studying a PhD at the University of Málaga
- ♦ Specialist in Ophthalmology. Regional University Hospital of Málaga

04

# Structure and Content

The contents of this program are a complete tour through the most up-to-date, innovative and comprehensive knowledge in the treatment of Pupil and Optic Nerve disorders. A complete intensive and eminently practical training on Neuro-Ophthalmological disorders and pathologies. All contents are accessible in multimedia format, with videos, theoretical lessons and working tools developed to facilitate the physicians learning process and help them achieve maximum competence in this area.



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*A high-quality, complete and interesting syllabus that will break down all the aspects that this intervention requires"*

## Module 1. Pupils. Optic Nerve

- 1.1. Pupillary Assessment
  - 1.1.1. Importance of Proper Pupillary Assessment
  - 1.1.2. Pupillary Reflexes
  - 1.1.3. Accommodation and Convergence
- 1.2. Anisocoria
  - 1.2.1. Physiological Anisocoria
  - 1.2.2. Major Anisocoria in Darkness: Mechanical Anisocoria, Pharmacological Anisocoria, Horner's Syndrome
- 1.3. Greater Anisocoria in Light
  - 1.3.1. Introduction
  - 1.3.2. Iris Lesion
  - 1.3.3. Pharmacological Mydriasis
  - 1.3.4. Tonic Pupil
  - 1.3.5. III Cranial Nerve Paralysis
- 1.4. Alterations of Pupillary Reactivity
  - 1.4.1. Light-Near Dissociation
  - 1.4.1. Relative Afferent Pupillary Defect
  - 1.4.2. Argyll-Robertson Pupil
  - 1.4.3. Aberrant Regeneration
  - 1.4.4. Other Pupillary Alterations: Benign Episodic Mydriasis
- 1.5. Anatomy and Physiology of the Optic Nerve
  - 1.5.1. Anatomy and Physiology
  - 1.5.2. Intraocular and Intraorbital Optic Nerve
  - 1.5.3. Intracanalicular and Intracranial Optic Nerve
  - 1.5.4. Physiology
- 1.6. Vascular Pathology of the Optic Nerve
  - 1.6.1. Non-Arteritic Ischemic Optic Neuropathy
  - 1.6.2. Arteritic Ischemic Optic Neuropathy
  - 1.6.3. Other Ischemic Optic Neuropathies: Hypovolemia and Diabetic Papillopathy







- 1.7. Inflammatory Pathology of the Optic Nerve
  - 1.7.1 Inflammatory Pathology of the Optic Nerve
  - 1.7.2 Demyelinating Optic Nerve Pathology
  - 1.7.3 Infectious Pathology of the Optic Nerve
  - 1.7.4 Other Inflammatory Neuropathies: Perineuritis, Sarcoidosis and Autoimmune
- 1.8. Infiltrative and Compressive Pathology
  - 1.8.1. Tumor Pathology of the Optic Nerve
  - 1.8.2. Optic Nerve Metastases, Lymphoma and Leukemia
  - 1.8.3. Aneurysms and Compressive Bone Pathology of the Optic Canal
- 1.9. Metabolic and Nutritional Pathology
  - 1.9.1. Metabolic Neuropathies
  - 1.9.2. Nutritional Neuropathies
  - 1.9.3. Toxic Neuropathies
- 1.10. Traumatic Pathology
  - 1.10.1. Direct Trauma
  - 1.10.2. Indirect Trauma
  - 1.10.3. Clinical Management



*Study at TECH and become part of  
the long list of success stories of  
this Institution"*

# 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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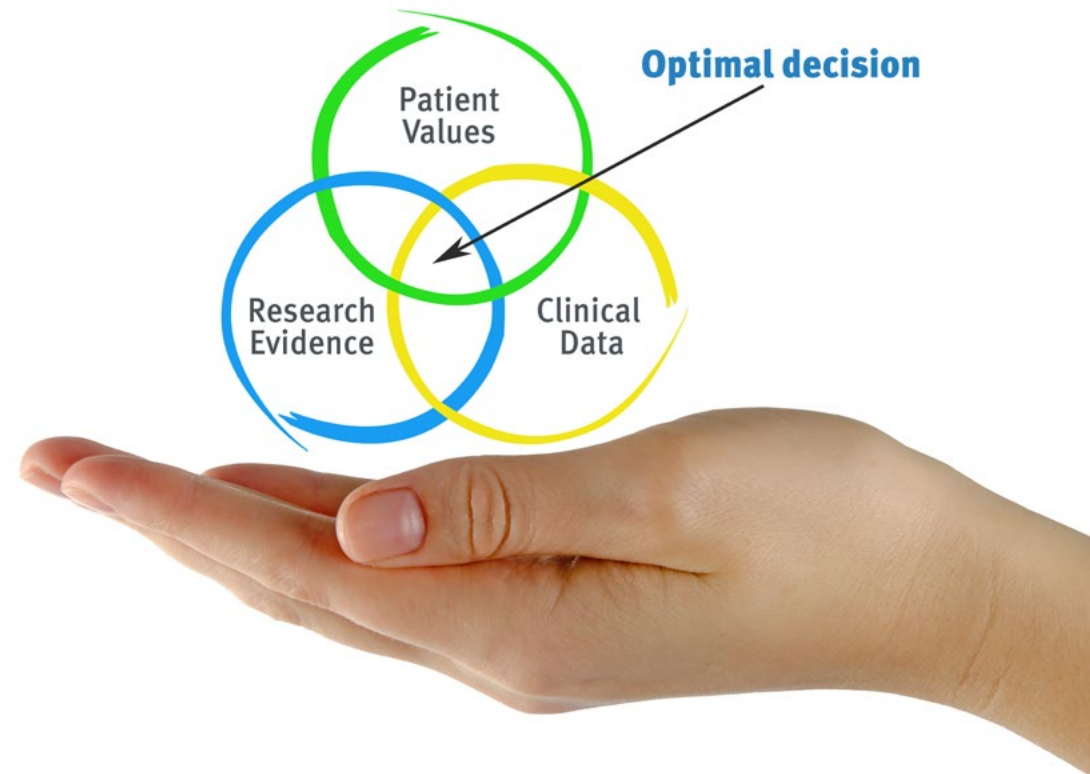
*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*



## 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. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

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*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*





At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



This program offers the best educational material, prepared with professionals in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



#### Interactive Summaries

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

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.







# 06 Certificate

The Postgraduate Certificate in Pupil and Optic Nerve 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 private qualification will allow you to obtain a **Postgraduate Certificate in Pupil and Optic Nerve** 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.

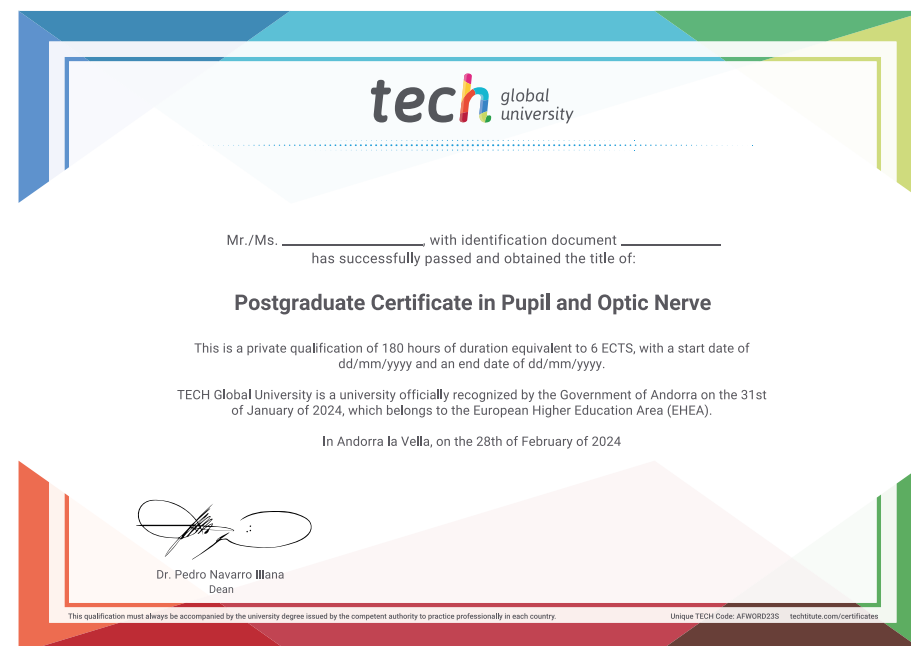
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Pupil and Optic Nerve**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





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



## Postgraduate Certificate Pupil and Optic Nerve

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## Pupil and Optic Nerve

