

# Postgraduate Certificate

## Nuclear and Infranuclear Ocular Motility Disorders



## Postgraduate Certificate Nuclear and Infranuclear Ocular Motility Disorders

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

Official N° of Hours: 150 h.

Website: [www.techitute.com/medicine/postgraduate-certificate/nuclear-infranuclear-ocular-motility-disorders](http://www.techitute.com/medicine/postgraduate-certificate/nuclear-infranuclear-ocular-motility-disorders)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 18*

05

Methodology

---

*p. 22*

06

Certificate

---

*p. 28*

# 01

# Introduction

Disorders characterized by deficiencies in eye movement as a primary manifestation of the disease require a specific and specialized study in the field of ophthalmology. Its presence in children's patients is a significant impact on their quality of life, as it can significantly interfere with vision, in addition to involving other conditions of varying severity that must be detected early. This program provides the professionals with the up-to-date and complete information in this field that will allow them to intervene as a specialist.



“

*A complete Postgraduate Certificate, of maximum specialization, that will allow the professional to catch up on the most innovative advances in Nuclear and Infranuclear Ocular Motility Disorders”*

Ocular Motility Disorders in the field of ophthalmology can encompass different types of affectations: infranuclear, nuclear and supranuclear disorders. Diseases of interest to eye muscles or oculomotor cranial nerves are considered infranuclear.

These pathologies are caused by diseases of oculomotor, trochlear, or abducens nuclei that are located in the brain stem and that produce various symptoms.

Supranuclear disorders, on the other hand, are produced by dysfunctions of higher-grade sensory and motor systems that control eye movements, including neural networks in the cerebral cortex, basal ganglia, cerebellum and brainstem.

This Postgraduate Certificate aims to achieve a complete and fully up-to-date collection in the field of ophthalmological intervention in pediatric patients. With the quality of high-level teaching, it will allow the student to take a step towards the most complete specialization in this field.

This knowledge can be acquired online, that is, without having to travel to any physical center to receive classes. Thus, you can continue with your academic process without giving up the rest of your daily activities.

This **Postgraduate Certificate in Nuclear and Infranuclear Ocular Motility Disorders** 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 practice
- ♦ 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



*An in-depth study of the different pathologies that compromise ocular motility that will put you at the forefront in this field of intervention"*

“*Increase your skills in this field by studying at TECH and start to see how your job opportunities multiply*”

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 during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*This updating program is designed for the student to learn to perform an up-to-date therapeutic approach in Nuclear and Infranuclear Ocular Motility Disorders”*

*Study comfortably at TECH based on the most reputable teaching methodology of the online academic landscape”*



# 02 Objectives

This Postgraduate Certificate has been designed with the objective of expanding the knowledge of the doctor in the Nuclear and Infranuclear Ocular Motility Disorders. With a goal of intensive learning and high impact, the students will be able to start carrying out their profession in this area safely, relying on the theoretical and practical learnings of this program, offering the most suitable and innovative support to the ophthalmological pathologies of its patients.



“

*This Postgraduate Certificate has been designed to promote the complete learning of ophthalmology professionals in this field through a process of high quality and total flexibility"*



## General Objectives

---

- 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



*An innovative and complete program that will help you achieve all your professional and personal goals"*





### Specific Objectives

---

- ♦ Delve into the etiology, diagnosis and treatment of paralysis of oculomotor cranial pairs
- ♦ Delve into the characteristics of the affectations of pairs V and VII
- ♦ Perform a diagnostic and therapeutic approach to the different hyperkinetic facial disorders that may occur
- ♦ Facilitate in-depth knowledge of myopathies with ophthalmological repercussions

03

# Course Management

For this program a complete group of professionals has been selected with years of experience and high prestige in the profession. In this way, taking this program becomes a unique opportunity for doctors because they will be able to learn from the knowledge of a high-level faculty. A unique occasion that only this University can offer.



“

*In your academic journey you will be accompanied by a group of professionals of high prestige in the profession"*

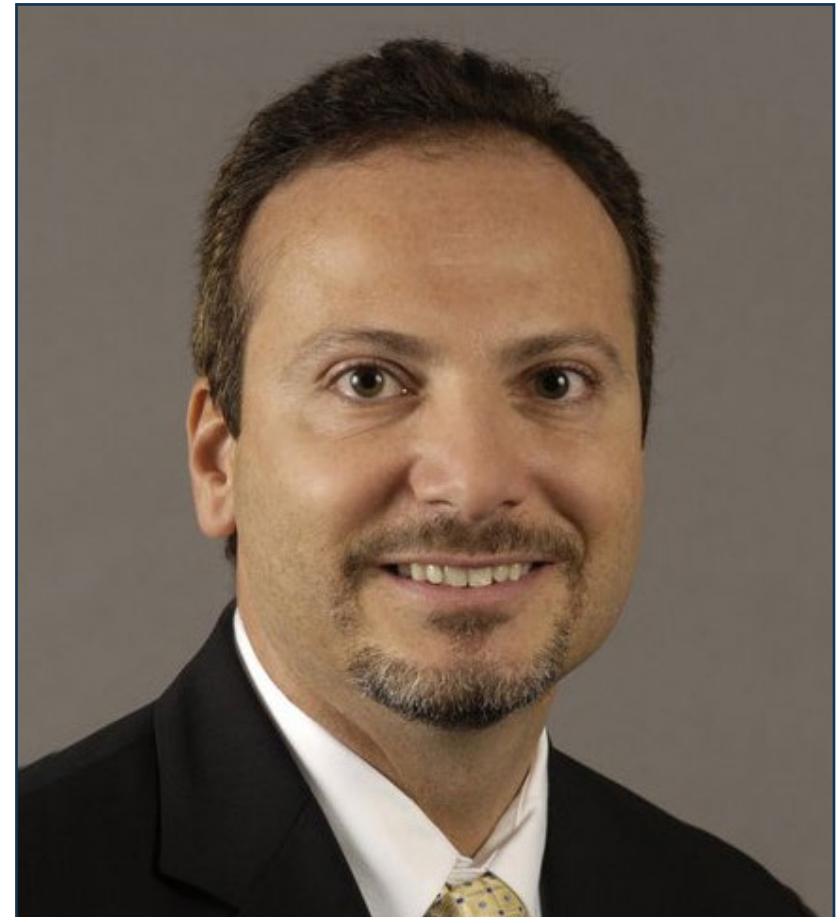
## International Guest Director

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

---

- 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*

“

*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. García Basterra, Ignacio

- ♦ Specialist in the Ophthalmology Department of the Clinical University Hospital Virgen de la Victoria in Málaga
- ♦ Head of the Adult Neuro-Ophthalmology and Strabismus Unit at the Clinical University Hospital Virgen de la Victoria in Málaga
- ♦ Doctor of Medicine and Surgery from the University of Málaga
- ♦ Specialist via MIR in Neurology, Virgen de las Nieves University Hospital, Granada
- ♦ Degree in Medicine and Surgery from the University of Granada
- ♦ Specialist via MIR in Ophthalmology, Virgen de la Victoria University Hospital, Malaga
- ♦ Member of the Neuro-Ophthalmology group of the Andalusian Society of Ophthalmology

# 04

## Structure and Content

The contents of this program will allow you to acquire theoretical and practical training on Neuro-Ophthalmological disorders and pathologies in pediatric patients. All this, in multimedia format, with videos, theoretical lessons and working tools of the highest level to facilitate the learning process of the doctors and help them to reach the highest level in their profession.



“

*High-quality content that you can  
integrate with the best teaching  
methodology in the online market"*

## Module 1 Nuclear and Infranuclear Ocular Motility Disorders

- 1.1. Horner Syndrome
  - 1.1.1. Anatomical Bases and Pathophysiology of the Oculosympathetic Pathway
  - 1.1.2. Causes of Horner's Syndrome
  - 1.1.3. Clinical Findings
  - 1.1.4. Diagnosis
  - 1.1.5. Treatment
- 1.2. Paralysis of the III Pair
  - 1.2.1. Anatomical and Pathophysiology Bases
  - 1.2.2. Etiology
  - 1.2.3. Clinical Findings
  - 1.2.4. Aberrant Regeneration of the III Cranial Nerve
  - 1.2.5. Diagnosis
  - 1.2.6. Treatment
- 1.3. Paralysis of the IV Pair
  - 1.3.1. Anatomical and Pathophysiology Bases
  - 1.3.2. Etiology
  - 1.3.3. Clinical Findings
- 1.4. Paralysis of the VI Pair
  - 1.4.1. Anatomical and Pathophysiology Bases
  - 1.4.2. Etiology
  - 1.4.3. Clinical Findings
- 1.5. Paralysis of the VII Pair
  - 1.5.1. Anatomical and Pathophysiology Bases
  - 1.5.2. Etiology
  - 1.5.3. Clinical Findings
- 1.6. Treatment of Facial Paralysis
  - 1.6.1. Management of Facial Paralysis
  - 1.6.2. Prognosis
  - 1.6.3. New Treatments
- 1.7. Combined Paralysis of the cranial Nerves
  - 1.7.1. Keys in the Diagnosis of Multiple Cranial Nerve Pair Paralysis
  - 1.7.2. Most Common Causes of Multiple Cranial Nerve Pair Involvement
  - 1.7.3. Useful Complementary Tests and Diagnostic Algorithm
- 1.8. Other Neuropathies
  - 1.8.1. Hyperkinetic Facial Disorders
  - 1.8.2. Infectious and Immune-Mediated Neuropathies
  - 1.8.3. Trauma and Tumors
- 1.9. Myopathies I
  - 1.9.1. Myasthenia Gravis
  - 1.9.2. Pseudomyasthenic Syndromes
- 1.10. Myopathies II
  - 1.10.1. Chronic Progressive External Ophthalmoplegia
  - 1.10.2. Myotonic Dystrophy



*A complete, efficient and affordable approach that will allow you to achieve excellence in this field of medical intervention"*



# 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.



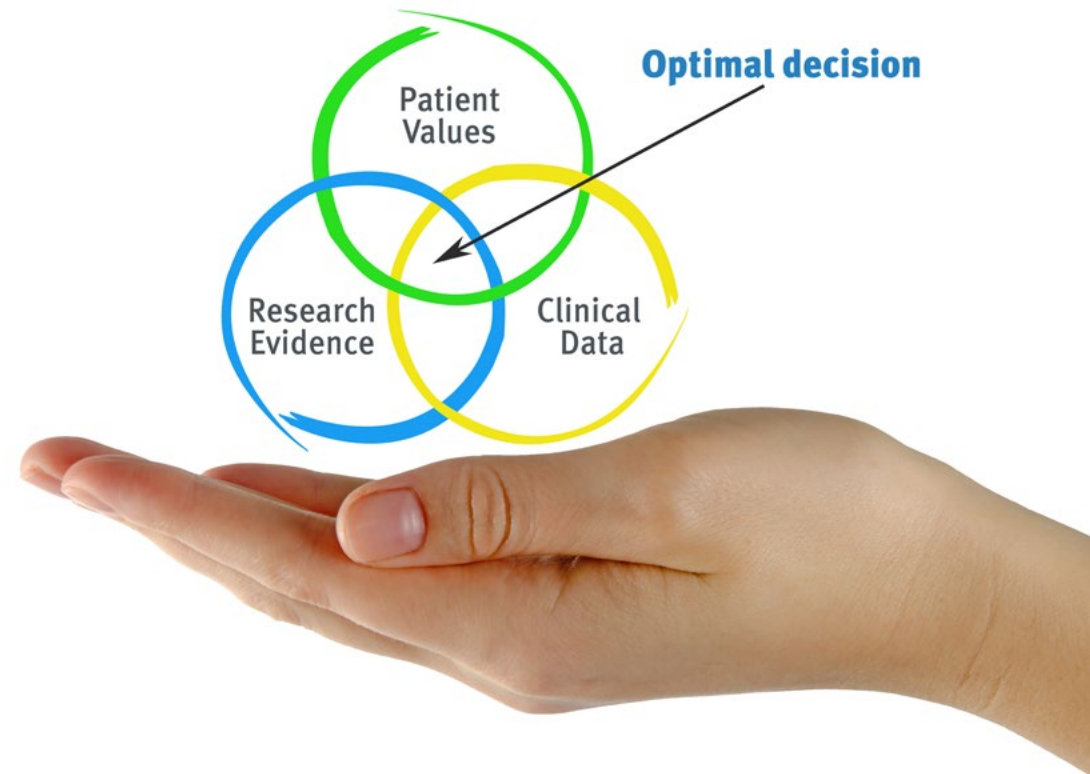
“

*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.

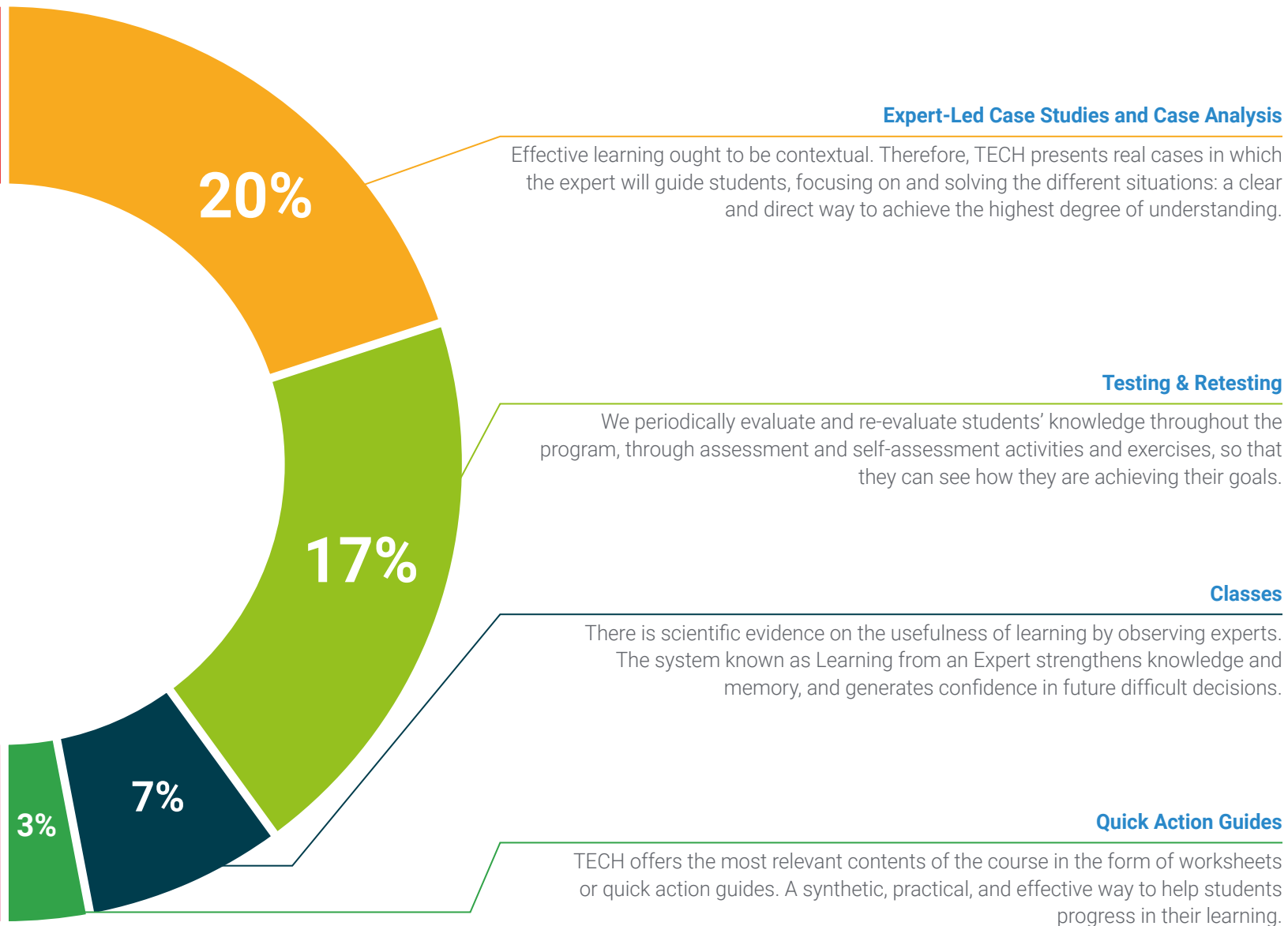
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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.





# 06 Certificate

The Postgraduate Certificate in Nuclear and Infranuclear Ocular Motility Disorders guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



“

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

This **Postgraduate Certificate in Nuclear and Infranuclear Ocular Motility Disorders** contains the most complete and up-to-date educational program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Certificate in Nuclear and Infranuclear Ocular Motility Disorders**

Official N° of Hours: **150 h.**



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



**Postgraduate Certificate**  
Nuclear and Infranuclear  
Ocular Motility  
Disorders

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

Official N° of Hours: 150 h.

# Postgraduate Certificate

## Nuclear and Infranuclear Ocular Motility Disorders