

# Postgraduate Diploma Nuclear Oncology





## Postgraduate Diploma Nuclear Oncology

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-nuclear-oncology](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-nuclear-oncology)

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# 01

# Introduction

Oncological diseases are very complex pathologies that require innovative treatments to provide the best solutions for patients. Nuclear Medicine offers precise diagnostic procedures for different types of cancer that, by other means, would be undetectable or very difficult to treat. For this reason, specializing in this area can be a great professional advancement, since acquiring this knowledge can help physicians to offer the best techniques to their patients, while achieving a significant professional advancement thanks to their new skills.





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*Enroll now and start offering your patients the best treatments in Nuclear Medicine applied to Oncology”*



Oncology is a complex field at the health and social level. This is an area that includes pathologies that are very harmful to health and for which, on occasions, there are no adequate treatments. In this context, Nuclear Medicine is an innovative scientific field that has been developing in recent decades to become one of the most important and promising for treating pathologies such as Oncology. For this reason, this Postgraduate Diploma in Nuclear Oncology offers its students an in depth study of the subject through which doctors who take the course can become recognized specialists in this field.

To achieve this, this qualification offers specialized content on issues such as radioguided surgery, diagnostic imaging techniques such as PET/CT and PET/MRI or targeted therapy with radioligands. With this new knowledge, medical professionals who complete this program will be in a position to enhance their professional careers, enjoying numerous options to access the nuclear medicine services of the best clinics in the country.

This **Postgraduate Diploma in Nuclear Oncology** is the most complete and up to date educational program on the market. Its most notable features are:

- The development of case studies presented by experts in Oncology and Nuclear Medicine
- 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
- 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



*Make accurate diagnoses of oncological diseases thanks to this Postgraduate Diploma"*

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*When you finish this qualification you will be able to manage the Nuclear Medicine Department of a prestigious hospital in your country"*

*Apply the best techniques of Nuclear Medicine to treat oncology patients with great efficacy.*

*Don't wait any longer: enroll now and become a great specialist in Nuclear Oncology.*

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.







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*Update your knowledge in Nuclear  
Oncology and continue to increase  
your prestige as a physician"*

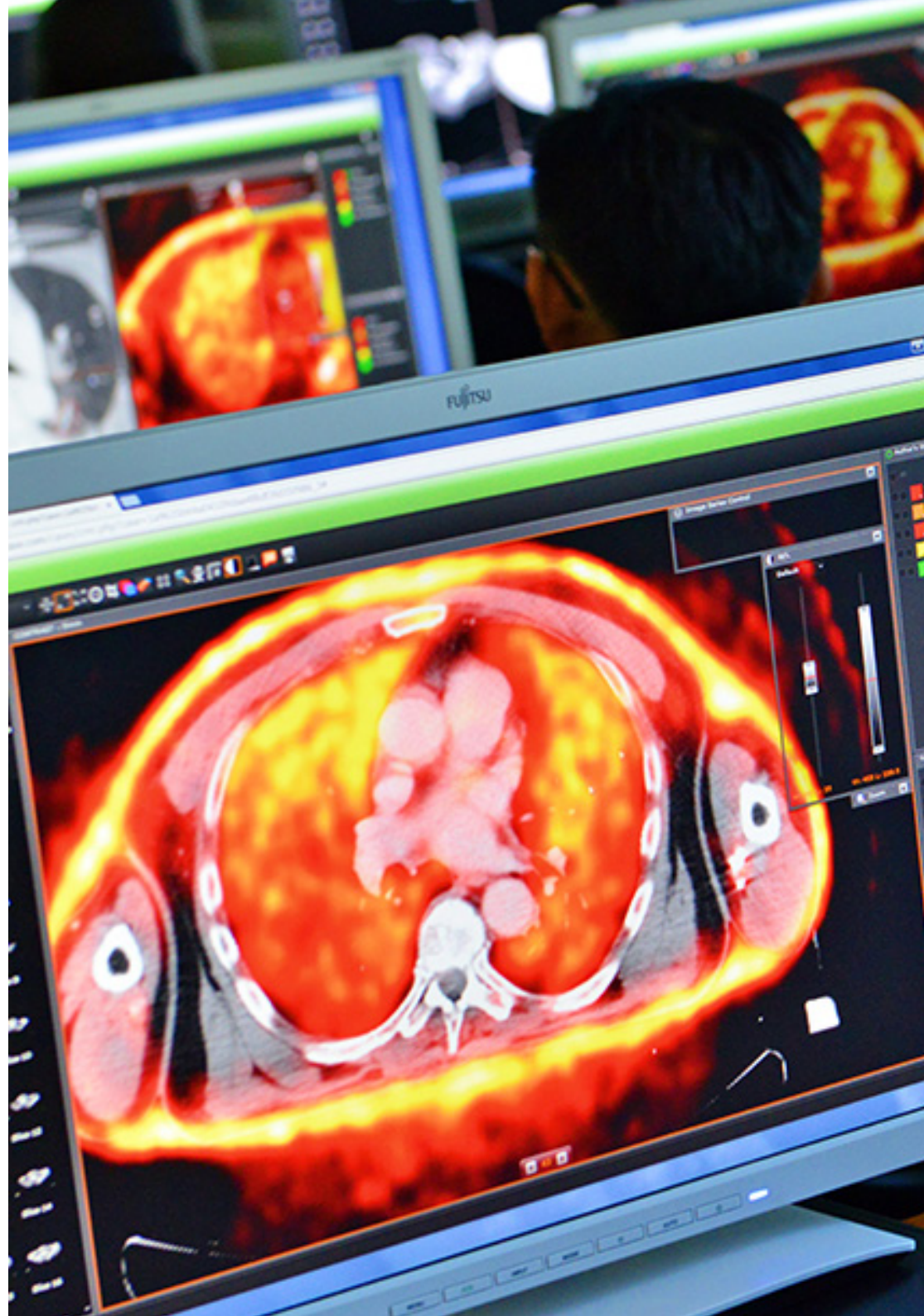


## General Objectives

- ♦ Update the specialist in Nuclear Medicine
- ♦ Perform and interpret functional tests in an integrated and sequential manner
- ♦ Achieve diagnostic guidance for patients
- ♦ Assist in deciding the best therapeutic strategy, including radiometabolic therapy, for each patient
- ♦ Apply clinical and biochemical criteria for the diagnosis of infections and inflammations
- ♦ Understand the particularities of Nuclear Medicine applied to pediatric patients
- ♦ Learn about the new therapies of Nuclear Medicine

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*Your professional goals will be much closer thanks to this Postgraduate Diploma”*







## Specific Objectives

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### Module 1. Radioguided Surgery

- ♦ Establish the protocols for performing the techniques, as well as their indication and modifications in the management of the patient in the different locations

### Module 2. PET/CT- PET/MRI in oncology clinical guidelines

- ♦ Delve into the role of PET/CT studies in tumors with the highest incidence
- ♦ Know its impact on diagnosis and staging and on response assessment and monitoring
- ♦ Analyze the positioning of the different scientific societies in the respective clinical guidelines

### Module 3. Radioligand Targeted Therapy

- ♦ Present the diagnostic protocols, patient selection, therapeutic protocols, care of the patient treated with metabolic therapy, responses obtained, side effects, its positioning compared to other therapies and possible lines of research for each of the different pathologies in which it is used.

03

# Course Management

This Postgraduate Diploma in Nuclear Oncology is taught by a high-level teaching staff that will be able to teach students the latest innovations in this area, so that they can put them into practice in their professional fields. Thus, this faculty has a long experience in the field of Nuclear Medicine applied to Oncology, so students will be able to update their knowledge and become great specialists in the field.







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*Great experts in Nuclear Oncology will provide you with all the keys to the subject so that you can apply them in your professional field"*

## International Guest Director

Dr. Stefano Fanti's prominent career has been entirely devoted to **Nuclear Medicine**. For almost 3 decades he has been professionally linked to the **PET Unit** at the **Polyclinic S. Orsola**. His exhaustive management as **Medical Director** of that hospital service allowed an exponential growth of the same, both its facilities and equipment. As a result, in recent years the institution has performed more than **12,000 radiodiagnostic examinations**, making it one of the **most active** in Europe.

Based on these results, the expert was selected to **reorganize** the **functions** of all the metropolitan centers with Nuclear Medicine tools in the region of Bologna, Italy. After this intensive professional task, he has held the position of **Referent of the Maggiore Hospital Division**. Also, still in charge of the PET Unit, Dr. Fanti has coordinated several grant applications for this center, receiving important funding from national institutions such as the Italian **Ministry of Universities** and the **Regional Health Agency**, Ministry of Universities.

On the other hand, this specialist has participated in many research projects on the clinical application of **PET** and **PET/CT technologies** in **Oncology**. In particular, he has investigated the approach to Lymphoma and **Prostate Cancer**. In turn, he has integrated the teams of many clinical trials with BCP requirements. In addition, he personally leads experimental analyses in the field of new PET tracers, including C-Choline, F-DOPA and Ga-DOTA-NOC, among others.

Also, Dr. Fanti is a collaborator of the **International Atomic Energy Organization (IAEA)**, participating in initiatives such as the consensus for the introduction of **radiopharmaceuticals for clinical use** and other advisory missions. He is also the author of more than 600 articles published in international journals and is a reviewer for The Lancet Oncology, The American Journal of Cancer, BMC Cancer, among others.



## Dr. Fanti, Stefano

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- Director of the Specialized School of Nuclear Medicine of the University of Bologna, Italy
- Director of the Division of Nuclear Medicine and of the PET Unit of Polyclinic S. Orsola
- Referent of the Division of Nuclear Medicine, Maggiore Hospital
- Associate Editor of Clinical and Translational Imaging, the European Journal of Nuclear Medicine and the Spanish Journal of Nuclear Medicine
- Reviewer for The Lancet Oncology, The American Journal of Cancer, BMC Cancer, European Urology, The European Journal of Hematology, Clinical Cancer Research, and other international journals
- Advisor to the International Atomic Energy Organization (IAEA)
- Member of: European Association of Nuclear Medicine

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

## Management



### Dr. Mitjavila, Mercedes

- Head of Nuclear Medicine Service Puerta de Hierro University Hospital Majadahonda, Madrid
- Project Manager of the Nuclear Medicine Unit in the Diagnostic Imaging Department of the Alcorcón Foundation University Hospital
- Head of Service of Nuclear Medicine of the Puerta de Hierro Hospital Majadahonda. Competitive examination BOCM
- Degree in Medicine and General Surgery from the University of Alcalá de Henares
- MIR in Nuclear Medicine Specialist by the MIR System
- PhD in Medicine and General Surgery from the University of Alcalá de Henares
- Interim Physician of the Nuclear Medicine Service of the Ramón y Cajal Hospital
- Interim Physician in the Nuclear Medicine Unit at Getafe University Hospital



## Professors

### Dr. Goñi Gironés, Elena

- ♦ Head of Nuclear Medicine Service Member of the Breast and Melanoma Unit of the Navarra Hospital Complex-CHN
- ♦ Area Specialist of the Nuclear Medicine Service of the Infanta Cristina Hospital in Badajoz
- ♦ Member of the Nuclear Medicine Quality Assurance Committee of the CHN
- ♦ Degree in Medicine and Surgery
- ♦ Doctor from the Public University of Navarra
- ♦ Nuclear Medicine Specialist
- ♦ Radioactive Facilities Supervisor

### Dr. Mucientes, Jorge

- ♦ Nuclear Medicine Area Specialist at the Puerta de Hierro Majadahonda University Hospital
- ♦ Nuclear Medicine Resident Tutor at Puerta de Hierro University Hospital
- ♦ Coordinator of Quality of the Nuclear Medicine Service of the Puerta de Hierro University Hospital
- ♦ Degree in Medicine and Surgery. University of Alcalá
- ♦ PhD in Medicine Cum Laude, at the Complutense University of Madrid

### Dr. Cardona, Jorge

- ♦ Specialist physician in the Nuclear Medicine Service of the University Hospital Responsible for the areas of Endocrinology, metabolic treatments, radioguided surgery, PET-CT in endocrinology (FDG, DOPA) and PET/CT in prostate cancer (Choline and PSMA)
- ♦ Degree in Medicine and Surgery. Complutense University of Madrid
- ♦ Diploma of Advanced Studies at the Complutense University of Madrid, obtained with the work "Use of intraoperative portable gamma camera in breast sentinel"
- ♦ Doctor of Medicine. Doctoral thesis at the Department of Radiology and Physical Medicine of the Complutense University of Madrid
- ♦ Professor of the Nuclear Medicine module at the Professional Training Center Puerta de Hierro
- ♦ Coordinator of the course "Clinical Sessions on Nuclear Medicine" at the Puerta de Hierro Hospital in Majadahonda

# 04

## Structure and Content

The contents of this Postgraduate Diploma in Nuclear Oncology have been created by leading specialists in Nuclear Medicine and Oncology. Thanks to this, students who take the course will be able to enjoy the most innovative and up to date syllabus and will also be able to delve deeper into issues such as radioguided surgery, PET/CT and PET/MRI imaging methods and targeted therapy with radioligands. This knowledge will turn the doctors who obtain it into true experts in Nuclear Oncology.





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*The most up to date contents  
in Nuclear Oncology are here”*

## Module 1. Radioguided Surgery

- 1.1. Selective Biopsy of the Sentinel Ganglion (SBSG)
  - 1.1.1. Detection with Radiopharmaceutical and Combined Techniques
    - 1.1.1.1. Radiocolloids, Dyes
  - 1.1.1.2. BSGC Breast Cancer
  - 1.1.2. Initial Staging
  - 1.1.3. In Neoadjuvant
- 1.2. BSGC Gynecologic Tumors
  - 1.2.1. Vulva
  - 1.2.2. Cervix
  - 1.2.3. Endometrium
  - 1.2.4. Ovaries
- 1.3. BSGC Skin Cancer
  - 1.3.1. Melanoma
  - 1.3.2. Non melanoma
- 1.4. BSGC Head and Neck Tumors
  - 1.4.1. Thyroid Cancer
  - 1.4.2. Oral Cavity
- 1.5. BSGC Gastrointestinal Tumors
  - 1.5.1. Oesophageal Cancer
  - 1.5.2. Stomach Cancer
  - 1.5.3. Colorectal Carcinoma
- 1.6. BSGC Urological Cancers
  - 1.6.1. Penis
  - 1.6.2. Prostate
- 1.7. Combined Technique of BSGC and Radioguided Occult Lesion Localization (ROLL)
  - 1.7.1. Breast
  - 1.7.2. Other Locations
- 1.8. ROLL
  - 1.8.1. Radiopharmaceuticals  $^{99m}\text{Tc}$ , Seeds  $^{125}\text{I}$
  - 1.8.2. Indications: Tumor Pathology and Other Applications

- 1.9. Radioguided Surgery in Primary Hyperparathyroidism
  - 1.9.1. Indications
  - 1.9.2. Protocols According to Radiopharmaceuticals

## Module 2. PET/CT- PET/MRI in Oncology Clinical Guidelines

- 2.1. Nuclear Medicine in Different Tumors
  - 2.1.1. Staging and Prognosis
  - 2.1.2. Response to Treatment
  - 2.1.3. Monitoring and Diagnosis of Recurrence
- 2.2. Lymphomas
  - 2.2.1. Hodgkin's Lymphoma
  - 2.2.2. Diffuse Large B-cell Lymphoma
  - 2.2.3. Other Lymphomas
- 2.3. Breast Cancer
  - 2.3.1. Initial Staging
  - 2.3.2. Response to Neoadjuvant
  - 2.3.3. Monitoring
- 2.4. Gynecologic Tumors
  - 2.4.1. Vagina Cervix: Staging, Response to Treatment and Monitoring
  - 2.4.2. Endometrium: Staging, Response to Treatment and Monitoring
  - 2.4.3. Ovaries: Staging, Response to Treatment and Monitoring
- 2.5. Lung Cancer
  - 2.5.1. Non-small Cell Lung Carcinoma
  - 2.5.2. Small Cell Lung Carcinoma
  - 2.5.3. Response Assessment: Radiotherapy, Immunotherapy
- 2.6. Digestive System Tumors
  - 2.6.1. Esophago-Gastric
  - 2.6.2. Colorectal
  - 2.6.3. Pancreas
  - 2.6.4. Hepatobiliary: Hepatocarcinoma, Cholangiocarcinoma
- 2.7. Sarcomas
  - 2.7.1. Bones
  - 2.7.2. Soft Parts



- 2.8. Urogenitals
    - 2.8.1. Prostate
    - 2.8.2. Renal
    - 2.8.3. Bladder
    - 2.8.4. Testicle
  - 2.9. Endocrine
    - 2.9.1. Thyroid
    - 2.9.2. Adrenal Gland
  - 2.10. Radiotherapy Planning
    - 2.10.1. Acquisition of Exploration
    - 2.10.2. Volume Delimitation
- Module 3. Radioligand Targeted Therapy**
- 3.1. Teragnosis
    - 3.1.1. Clinical and Therapeutic Implications
  - 3.2. Thyroid
    - 3.2.1. Hyperthyroidism
    - 3.2.2. Differentiated Thyroid Carcinoma
    - 3.2.3. Goiter
  - 3.3. Neuroendocrine, Gastroenteropancreatic and Other Tumors: Radiolabeled Peptides
    - 3.3.1. Indications
    - 3.3.2. Administration
  - 3.4. Pheochromocytoma and Paragangliomas: <sup>131</sup>I-MIBG
    - 3.4.1. Indications and Patient Selection
    - 3.4.2. Administration Protocols
    - 3.4.3. Results
  - 3.5. Bone Metastases
    - 3.5.1. Pathophysiology of Bone Metastases
    - 3.5.2. Basis of Radiometabolic Therapy
    - 3.5.3. Radiopharmaceuticals Used: Indications and Results
  - 3.6. Selective Internal Radiation Therapy (SIRT): Labeled Microspheres
    - 3.6.1. Basis of Therapy with Radiolabeled Microspheres
    - 3.6.2. Available Devices: Differential Characteristics
    - 3.6.3. Calculation of the Activity to be Administered and Dosimetric Assessment according to the Device
    - 3.6.4. Hepatocarcinoma: Application and Results
    - 3.6.5. Liver Metastases: Application and Results in Colorectal Carcinoma, Neuroendocrine and Other Tumors
    - 3.6.6. Contributions of SIRT to Liver Surgery
    - 3.6.7. Potentially Resectable Patient
    - 3.6.8. Hepatic Lobe Hypertrophy
  - 3.7. Synoviorthesis
    - 3.7.1. Pathophysiological Basis of Treatment
    - 3.7.2. Radiopharmaceuticals Used
    - 3.7.3. Indications and Clinical Experience in Different Locations and Pathologies: Rheumatoid Arthritis, Other Arthritis, Vellonodular Synovitis
    - 3.7.4. Applications in Pediatrics: Hemophilic Patient
  - 3.8. Metastatic Prostate Cancer: <sup>177</sup>Lu-PSMA
    - 3.8.1. Pathophysiological Bases
    - 3.8.2. Patient Selection
    - 3.8.3. Management Protocols and Results
  - 3.9. Lymphomas: Radioimmunotherapy
    - 3.9.1. Pathophysiological Bases
    - 3.9.2. Indications
    - 3.9.3. Administration Protocols
  - 3.10. Future
    - 3.10.1. Search for New Ligands and Radioisotopes
    - 3.10.2. Translational Research
    - 3.10.3. Research Lines

05

# Methodology

This training program provides you with 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.



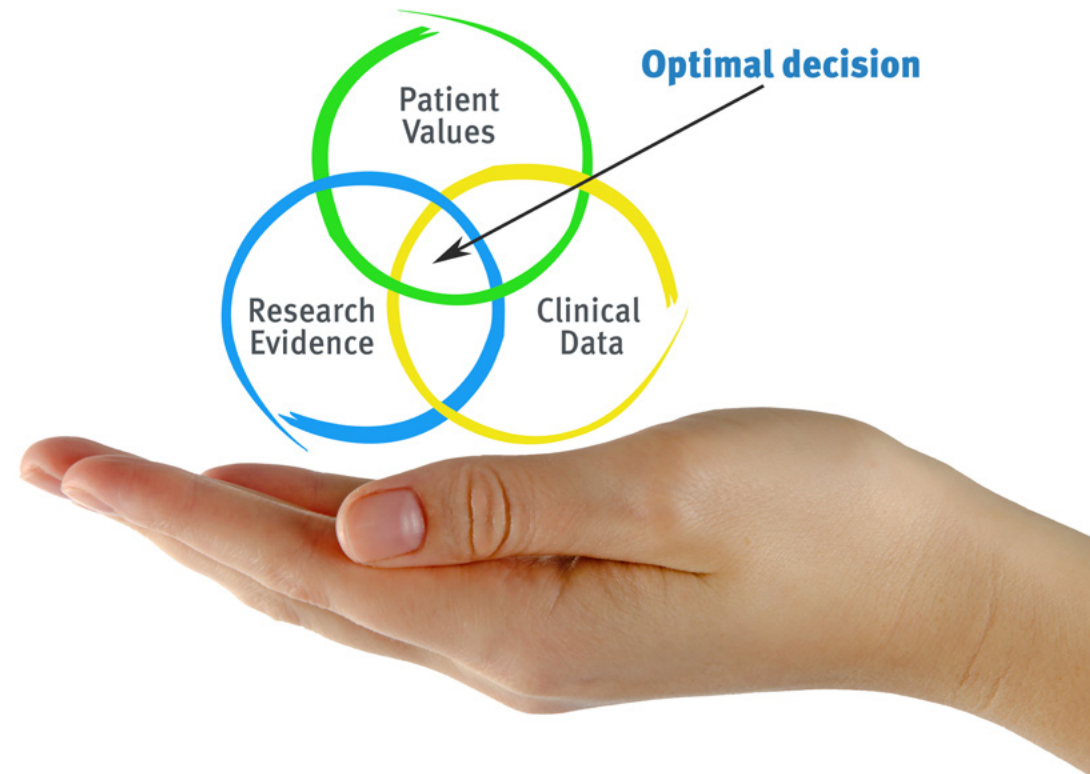
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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 Harvard 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 multimedia content presentation training Exclusive system 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 your goals.



#### Classes

There is scientific evidence on the usefulness of learning by observing experts: The system termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



#### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.





# 06 Certificate

The Postgraduate Diploma Nuclear Oncology guarantees, in addition to the most rigorous and up to date training, access to a certificate issued by TECH Global University.





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*Successfully complete this training program  
and receive your university certificate  
without travel or laborious paperwork”*

This program will allow you to obtain your **Postgraduate Diploma in Nuclear Oncology** 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.

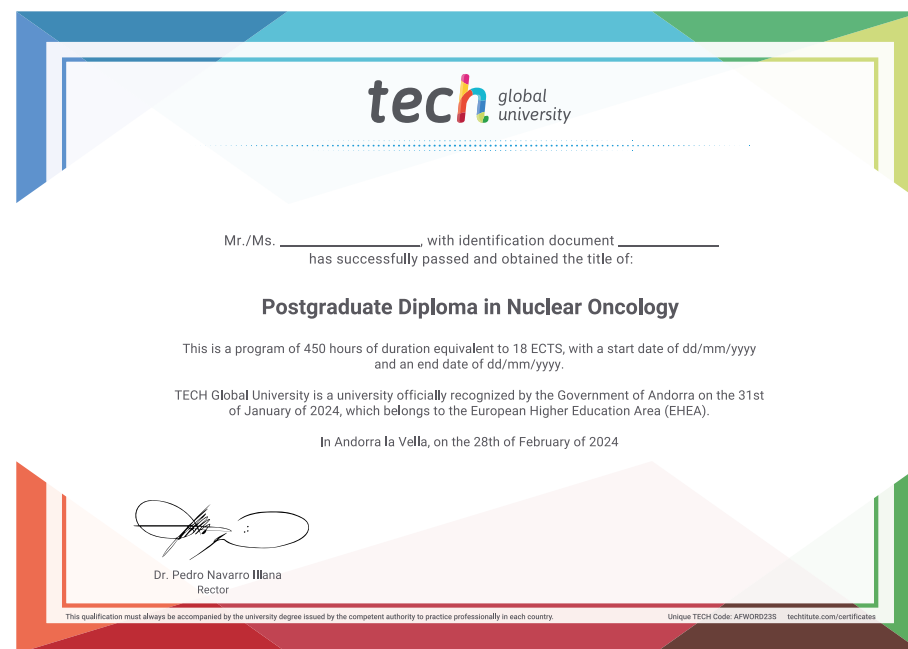
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Nuclear Oncology**

Modality: **online**

Duration: **6 months**

Accreditation: **18 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.



## Postgraduate Diploma Nuclear Oncology

- » Modality: online
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- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

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