



Systemic Cardiovascular Disease and Complex Clinical Situations in the Oncologic Patient

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-systemic-cardiovascular-disease-complex-clinical-situations-oncologic-patient

# Index

 $\begin{array}{c|c} 01 & 02 \\ \hline & & Objectives \\ \hline 03 & 04 & 05 \\ \hline & & Course \, Management & Structure \, and \, Content \\ \hline & & p. \, 18 & \hline \\ & & & & p. \, 22 \\ \hline \end{array}$ 

p. 30

Certificate





# tech 06 | Introduction

Cancer patients, on many occasions, present pathologies associated with the oncological process or not, but which require attention and care. One example is cardiovascular pathologies, such as arterial hypertension or venous thromboembolic disease.

The specialist plays a fundamental role in the approach to the oncological process, and his or her diagnostic and therapeutic orientation must be in harmony with those of the rest of the pathologies suffered by the patient.

Cardiovascular involvement is commonly present in the side effects of most treatments for the oncology patient. The management of the medication, as well as of other therapeutic options, is fundamental in the adjustment of the appropriate dosage for medical praxis. Keeping up to date with advances in arterial hypertension and venous thromboembolic disease in oncology patients is a fundamental skill that physicians must possess in their daily clinical practice.

This program is designed to facilitate the specialist's updating process, so that he/she can include in the clinical practice of their patients all the innovations and the latest knowledge about oncological therapeutics.

The Postgraduate Diploma in Systemic Cardiovascular Affectation and Complex Clinical Situations in the Oncologic Patient contains the most complete and up to date scientific program on the market. The most important features of the program include:

- Development of case studies presented by experts on hypertension and venous thromboembolic diseases in cancer patients. 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.
- \* New developments in arterial hypertension in the oncology patient.
- It contains practical exercises where the self-evaluation process can be carried out to improve learning.
- With special emphasis on innovative methodologies in arterial hypertension and venous thromboembolic disease.
- All of this will be complemented by theoretical lessons, questions to the Postgraduate Diploma, debate forums on controversial topics, and individual reflection assignments.
- Content that is accessible from any fixed or portable device with an Internet connection.



Update your knowledge with the
Postgraduate Diploma in Systemic
Cardiovascular Disease and Complex
Clinical Situations in the Oncologic Patient"



This Postgraduate Diploma may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in Systemic Cardiovascular Disease and Complex Clinical Situations in the Oncologic Patient, you will obtain a Postgraduate Diploma from TECH Technological University"

Its teaching staff includes professionals from the field of hypertension and venous thromboembolic disease in cancer patients, who bring to this training the experience of their work, as well as renowned specialists from prestigious reference societies and 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 program to train in real situations.

The design of this program is based on Problem-Based Learning, by means of which the student must try to solve the different professional practice situations that arise throughout the course. To this end, the student will be assisted by an innovative interactive video system developed by recognized experts in the field of cardiovascular pathology in oncology, with extensive teaching experience.

Increase your decision-making confidence by updating your knowledge through this Postgraduate Diploma.







# tech 10 | Objectives



## **General Objectives**

- Update the knowledge of the specialist Cardiologist, Oncologist and Hematologist in the field of Cardio-Oncology.
- Promote work strategies based on a comprehensive approach to the patient as a standard model for achieving excellent care.
- Encourage the acquisition of technical skills and abilities, through a powerful audio-visual system, and the possibility of development through online simulation workshops and/or specific training.
- Encourage professional stimulus through continuing education and research.





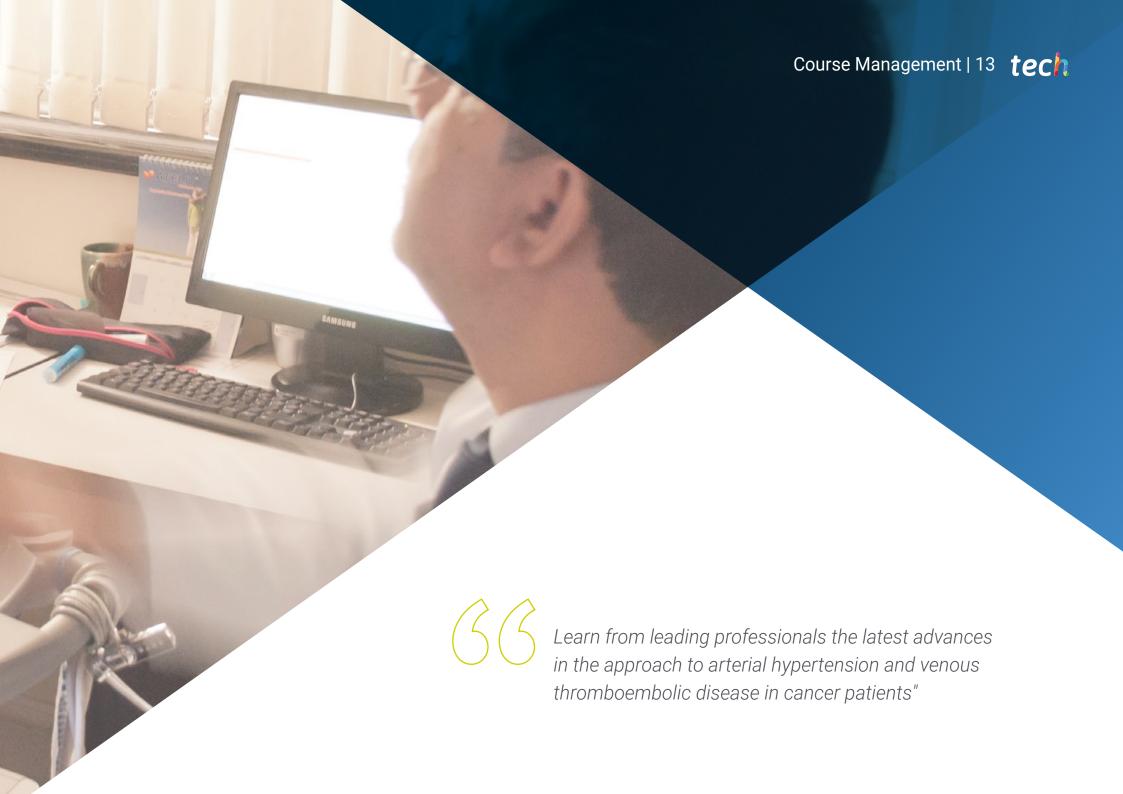


## **Specific Objectives**

- Describe the monitoring required by patients during treatment for cardiotoxicity.
- Identify biomarkers as a method used to detect cardiotoxicity early, especially troponins and natriuretic peptides.
- Deepen the knowledge of echocardiography, with special attention to the "global longitudinal strain" technique as a marker for early detection of cardiac toxicity.
- Know the role of cardiac magnetic resonance imaging in the early detection of cardiotoxicity.
- Recognize the clinical relevance of hypertension in oncology patients.
- Analyze the relationship between antiangiogenic drugs and arterial hypertension and its mechanisms
- Deepen our knowledge of the diagnosis of arterial hypertension associated with the use of antiangiogenic drugs.
- Define the strategy for monitoring arterial hypertension during oncologic treatment.
- Know the treatment of arterial hypertension related to oncologic treatment.
- Recognize the clinical relevance of venous thromboembolic disease in oncology patients.
- Know the different factors and situations that contribute to the development of venous thromboembolic disease in oncology patients.
- Learn the antineoplastic treatments associated with increased risk of venous thromboembolic disease.
- Describe prevention measures for cancer-related venous thromboembolic disease in different clinical scenarios.
- Analyze the relationship and clinical significance of venous thromboembolic disease with the use of central venous catheters.

- Learn the forms of clinical presentation, diagnostic, and monitoring methods, as well as the treatment of venous thromboembolic disease with the use of central venous catheters.
- Know the ways to prevent venous thromboembolic disease with the use of central venous catheters
- Identify the forms of presentation and deepen the knowledge of the diagnosis of deep vein thrombosis and cancer-associated pulmonary thromboembolism.
- Analyze the different treatment options for cancer-associated thromboembolic disease
- Know the capacity of some oncological treatments to produce arterial thrombosis.
- Become familiar with current basic lines of research and future perspectives.
- Become familiar with current clinical lines of research and future perspectives.





#### **International Guest Director**

Dr. Arjun Ghosh is recognized in the healthcare field for his many efforts to improve the quality of care at the University College London Hospital (UCLH) and Barts Heart Center. Both institutions have become international references in Cardiology, an area in which this doctor is considered a true eminence.

From his position as Head of the Clinical Service at UCLH, the expert has devoted great efforts to the care of patients with cancer and to reduce the cardiac side effects that may result from aggressive treatments such as chemotherapy, radiotherapy and surgery. Thanks to his extensive experience in this field, he is a consultant specialist in the Long-Term Follow-Up Unit, created to monitor the evolution of people who have survived tumors.

Dr. Ghosh's research has been at the forefront of clinical innovation throughout his career. His PhD, for example, was defended at the Imperial College of London and subsequently presented to the British Parliament. This merit is only plausible for studies that make unquestionable contributions to society and science. The thesis has also received numerous national and international awards. It has also been endorsed by presentations at various congresses around the world.

The famous cardiologist is also a specialist in advanced Diagnostic Imaging techniques, using state-of-the-art tools: Magnetic Resonance Imaging and Echocardiography. He also has a broad academic vocation that led him to complete a Master's degree in Medical Education, obtaining accreditations from the Royal College of Physicians of the United Kingdom and University College London.

Dr. Ghosh is also the Director of the Foundation Program at St. Bartholomew's Hospital and holds various positions in local and international societies, such as the American College of Cardiology.



# Dr. Arjun Ghosh

- · Specialist in Cardio-Oncology and Advanced Cardiac Imaging
- · Head of Clinical Service University College London Hospital (UCLH)
- · Consultant Cardiologist at the Barts Heart Center
- · Director of the St Bartholomew's Hospital Foundation Program
- · Doctorate in Cardiology at Imperial College London
- · Master's Degree in Medical Education from the Royal College of Physicians of the
- · United Kingdom and University College London
- · Member of:
- · American College of Cardiology
- · British Cardiovascular Society
- · Royal Society of Medicine
- · International Society of Cardio-Oncology



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

# tech 16 | Course Management

## Management



## Dr. García Foncillas, Jesús

- Director of the Chair of Molecular Individualized Medicine of the Autonomous University of Madrid (UAM-Merck).
- Director of the Oncology Institute "OncoHealth".
- Director of the Oncology Department of the University Hospital "Fundación Jiménez Díaz".
- Director of the Translational Oncology Division of the Health Research Institute FJD-UAM.
- Professor of Oncology, Autonomous University of Madrid

### Coordinators



### Dr. Ibáñez Cabeza, Borja

- · Head of the Fundación Jiménez Díaz Cardiology Research Unit
- Director of the Clinical Research Department of the Carlos III National Center for Cardiovascular Research (CNIC).



## Dr. Macía Palafox, Ester

- · Clinical Manager of the Cardio-Oncology Unit of the Fundación Jiménez Díaz University Hospital in Madrid.
- Degree in Medicine from the Complutense University Madrid.
- · Cardiology Specialist at La Paz University Hospital in Madrid...
- TECH Master's Degree in Clinical Arrhythmology (Complutense University of Madrid).
- Fellowship in Investigative Arrhythmology (Columbia University, New York).
- ' Member of the Spanish Society of Cardiology. Cardio-Oncology Work Group

# tech 18 | Course Management

### **Professors**

#### Dr. Alonso Martín, Joaquín Jesús

• Head of the Cardiology Department, University Hospital of Getafe, Madrid.

#### Dr. Arroyo Rivera, Belén

 Cardiology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Cornago Navascues, Javier

 Hematology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Devesa Arbiol, Ana

 Cardiology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Díaz Antón, Belen

\* Cardiology Department, Hospital Madrid Montepríncipe.

#### Dr. Fuertes Suárez, Beatriz

\* Cardiology Department, Hospital Madrid Montepríncipe.

#### Dr. García Torres, Araceli

 Neurology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Gómez Talavera, Sandra

Cardiology Department, Hospital Fundación Jiménez DíazQuironsalud, Madrid.
 Carlos III National Center for Cardiovascular Research (CNIC).



#### Dr. González Caballero, Eva

\* Cardiology Department, University Hospital Virgen Macarena, Seville.

#### García Talavera, Camila Sofía

 Cardiology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Hernández González, Ignacio

 Cardiology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Jiménez Barral, Elena

 Hematology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Llamas Sillero, Pilar

 Head of Hematology Department, University Hospital Fundación Jiménez Díaz Ouironsalud, Madrid.

#### Dr. López Ibor Aliño, Blanca

 Head of Pediatric Hematology and Oncology Department, Hospital Madrid Montepríncipe.

#### Dr. Martínez Díez, Yolanda

 Hematology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

### Dr. Martín Herrero, Sara

 Hematology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Pastor Planas, Ana

\* Cardiology Department, Hospital Madrid Montepríncipe.

#### Dr. Rincón, Luis Miguel

#### Dr Rodriguez Chavarri, Adriana

University Hospital Monteprincipe.

#### Dr. Serrano Antolín, José María

\* Cardiology Department, University Hospital of Fuenlabrada, Madrid.

#### Dr. Velasco Rodriguez, Diego

 Hematology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Vidal Laso, Rosa

 Hematology Department, University Hospital Fundación Jiménez Díaz Quironsalud, Madrid.

#### Dr. Zorita Gil, Blanca

Cardiology Department, Hospital Madrid Montepríncipe.





# tech 20 | Structure and Content

# **Module 1.** Comprehensive Assessment of the Risk of Cardiotoxicity Development

- 1.1. Individual Susceptibility to Cardiotoxicity: Genetic Factors.
- 1.2. Individual Susceptibility to Cardiotoxicity: Non-Genetic Factors.
  - 1.2.1. Cardiovascular Risk Factors.
  - 1.2.2. Comorbidities.
  - 1.2.3. Combination of Oncologic Treatments.
- Cardiological Assessment before Treatment in Patients without Known Heart Disease.
  - 1.3.1. Clinical Assessment.
  - 1.3.2. Complementary Tests.
- 1.4. Cardiological Assessment before Treatment in Patients with Known Heart Disease.
  - 1.4.1. Clinical Assessment.
  - 1.4.2. Complementary Tests.
- 1.5. Monitoring during Treatment of Patients Subjected to Cardiotoxic Treatments.
  - 1.5.1. Clinical Assessment.
  - 1.5.2. Complementary Tests.

#### **Module 2.** Arterial Hypertension as a Result of Oncologic Treatments

- 2.1. Clinical Relevance of Hypertension in Oncology Patients.
- 2.2. Arterial Hypertension Associated with Antiangiogenic Drugs.
  - 2.2.1. Incidence.
  - 2.2.2. Pathophysiology.
  - 2.2.3. Diagnosis.
- 2.3. Other Treatments Associated with the Development of Arterial Hypertension.
- 2.4. Treatment of Arterial Hypertension Related to Oncologic Treatment.
- 2.5. Monitoring Strategy.



# **Module 3.** Venous Thromboembolic Disease and Other Vascular Complications in the Oncology Patient

- 3.1. Venous Thromboembolic Disease in the Oncologic Patient: Clinical Significance.
  - 3.1.1. Incidence.
  - 3.1.2. Pathophysiology.
  - 3.1.3. Risk Factors.
- Antineoplastic Treatments Associated with Increased Risk of Thromboembolic Disease.
  - 3.2.1. Chemotherapy and Antiangiogenic Drugs.
  - 3.2.2. Hormone Therapy.
- 3.3. Prevention of Cancer-Related Venous Thromboembolic Disease.
  - 3.3.1. Prevention Strategy in Outpatients with Active Oncology Treatment.
    Thrombotic Risk Scales.
  - 3.3.2. Prevention Strategy in Hospitalized Patients.
  - 3.3.3. Periosurgery Prevention Strategy.
- 3.4. Venous Thromboembolic Disease Related to the Use of Central Venous Catheters.
  - 3.4.1. Incidence.
  - 3.4.2. Clinical Presentation.
  - 3.4.3. Diagnostic Methods.
  - 3.4.4. Treatment and Monitoring.
  - 3.4.5. Prevention.
- 3.5. Forms of Presentation and Diagnosis of Cancer-Associated Thromboembolic Disease.
  - 3.5.1. Deep Vein Thrombosis.
  - 3.5.2. Pulmonary Embolism.
- 3.6. Treatment of Cancer-Associated Thromboembolic Disease
  - 3.6.1. Initial Treatment.
  - 3.6.2 Extended Treatment
- 3.7. Management of Thromboembolic Disease in Special Situations.
  - 3.7.1. Brain Tumors.
  - 3.7.2. Obesity
  - 3.7.3. Renal Insufficiency.
  - 3.7.4. Thrombopenia.

- 3.8. Primary Prevention of Cardiovascular Disease in Cancer Patients.
  - 3.8.1. Incidence and Risk Factors.
  - 3.8.2. Implicated Drugs.
  - 3.8.3. Clinical Diagnosis and Treatment.
- 3.9. Cerebrovascular Disease.
  - 3.9.1. Incidence and Risk Factors.
  - 3.9.2. Implicated Treatments.
  - 3.9.3. Clinical Diagnosis and Treatment.
- 3.10. Pulmonary Hypertension.
  - 3.10.1. Implicated Drugs. Pathophysiology.
  - 3.10.2. Clinical Diagnosis.
  - 3.10.3. Treatment and Monitoring.

#### Module 4. Complex Clinical Situations in the Context of Cardiotoxicity

- 4.1. Patient with Complex Cardiovascular Disease Requiring Oncologic Treatment.
- 4.2. Patient with Oncologic Disease Presenting with an Acute Ischemic Event.
- 4.3. Pediatric Patients in Need of Potentially Cardiotoxic Oncology Treatment.
- 4.4. Geriatric Patients in need of Oncologic Treatment.
- 4.5. Oncology Patients Requiring Anticoagulation or Anti-Aggregation.
- 4.6. Oncology Patients who Exhibit Arrhythmias and Require Implantable Devices (Pacemakers, Defibrillators).



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



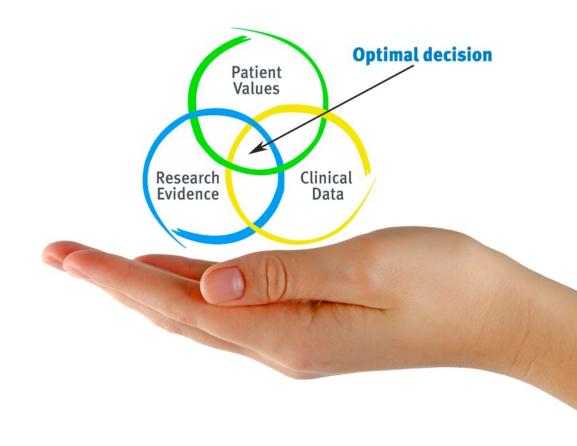


# tech 26 | Methodology

#### At TECH we use the Case Method

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you can experience a way of learning that is shaking the foundations of traditional universities around the world.



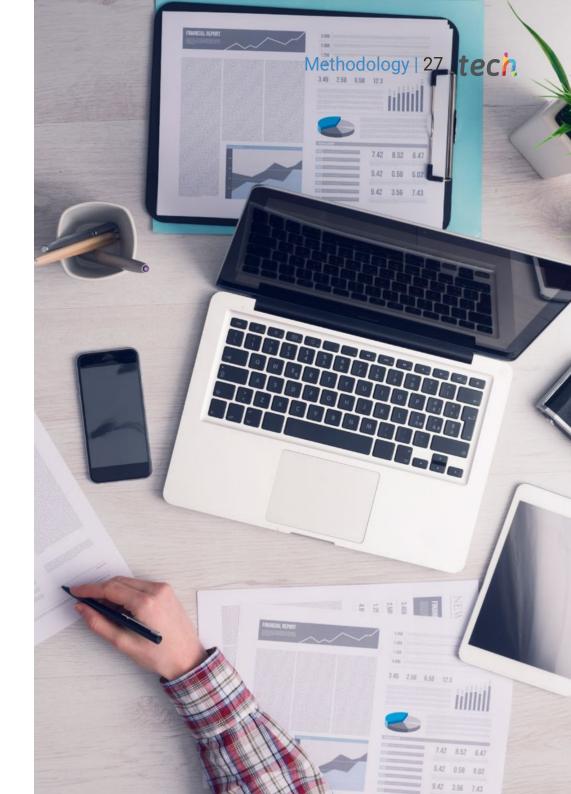
According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching potential or because of its uniqueness or rarity. It is essential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



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:

- Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
- 2. The learning process has a clear focus on practical skills that allow the student to better integrate into the real world.
- 3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
- 4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



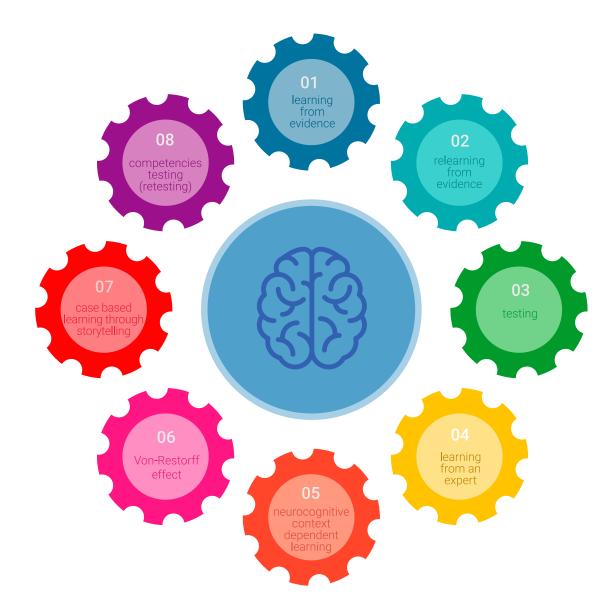
## 28 | Methodology

## **Re-Learning Methodology**

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

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.

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



## Methodology | 29

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

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

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

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

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

In this program you will have access to the best educational material, prepared with you in mind:



#### **Study Material**

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

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



#### **Latest Techniques and Procedures on Video**

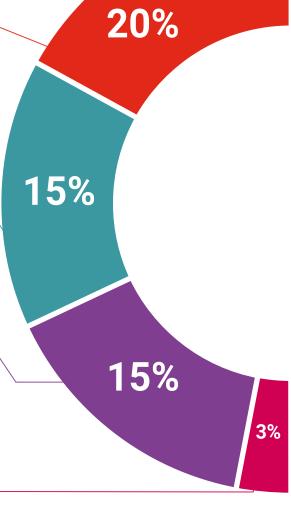
We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### **Interactive Summaries**

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

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





#### **Additional Reading**

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

## **Postgraduate Diploma-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the Postgraduate Diploma will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



#### **Testing & Re-testing**

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



#### Classes

There is scientific evidence suggesting that observing third-party Postgraduate

Diplomas can be useful.





#### **Quick Action Guides**

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







# tech 32 | Certificate

This Postgraduate Diploma in Systemic Cardiovascular Disease and Complex Clinical Situations in the Oncologic Patient contains the most complete and up to date scientific program on the market.

After the student has passed the evaluations, he/she will receive by mail with acknowledgment of receipt their corresponding Postgraduate Diploma issued by TECH Technological University.

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

Title: Postgraduate Diploma in Systemic Cardiovascular Disease and Complex Clinical Situations in the Oncologic Patient.

Official Number of Hours: 400



#### **POSTGRADUATE DIPLOMA**

in

#### Systemic Cardiovascular Disease and Complex Clinical Situations in the Oncologic Patient

This is a qualification awarded by this University, equivalent to 500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy .

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018 .

ıne 17, 2020

Tere Guevara Navarr o

re TECH Code: AFWORD23S techtitute.com/certificate

<sup>\*</sup>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.

health

guarantee

internal of technological university

# Postgraduate Diploma

Systemic Cardiovascular Disease and Complex Clinical Situations in the Oncologic Patient

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

