

Postgraduate Diploma

Arterial Diseases





Postgraduate Diploma Arterial Diseases

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

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-arterial-diseases

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 22

06

Certificate

p. 30

01

Introduction

The prevalence of people suffering from arterial disease remains high due to unhealthy lifestyles. In view of this situation, there has been an important evolution from less invasive treatments to more complex surgical procedures to deal with them. This progress has led specialists to continuously update their diagnostic knowledge and the techniques used for their management. This is the path taken by this program, which brings the graduate to a complete update through an educational option that presents an exhaustive content, elaborated by consolidated professionals in Vascular Surgery and Angiology of reference hospitals in this area. All this, in a 100% online format that allows to reconcile daily activities with an advanced educational option.





“

Postgraduate Diploma that will allow you to get a complete update in Arterial Diseases and open surgery techniques in Vascular Pathologies”

Inadequate health habits continue to be the main cause of arterial disease, however, advances in recent years in diagnostic and interventional techniques have allowed important achievements for patients. Among them is the improvement of techniques such as balloon angioplasty, stent placement or surgical procedures such as atherectomy, endarterectomy or bypass surgery.

An evolution that leads specialists to continuously update their knowledge and competence in this field. For this reason, TECH has designed this 6-month Postgraduate Diploma in Arterial Diseases, prepared by an excellent team of specialists in Vascular Surgery and Angiology of a distinguished hospital in this area.

It is a program of 450 teaching hours that will allow the graduate to delve into the causes and risk factors that can trigger peripheral arterial disease, its diagnosis, medical and surgical treatment. Likewise, it will delve into open surgery techniques in vascular pathologies, endovascular treatment of vascular diseases, detailing the details of the techniques and clinical situations in which they are used.

In addition, in this educational pathway, the graduate will be provided with innovative teaching resources based on video summaries of each topic, videos in detail, complementary readings and clinical case studies. Likewise, thanks to the Relearning method, based on the reiteration of the contents, students will be able to reduce the long hours of study and memorization.

An ideal option for a complete update through a flexible program. The specialist only needs a digital device with an internet connection to visualize, at any time of the day, the content hosted on the virtual platform. Therefore, without the need for attendance or classes with restricted schedules, graduates will be able to reconcile their daily activities with a quality program.

This **Postgraduate Diploma in Arterial Diseases** contains the most complete and up-to-date scientific program on the market. The most important features include:

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



You are in the presence of a qualification that allows you to reconcile your daily professional activities with a process of updating in Arterial Diseases of the highest level"

“

Delve into Endovascular Surgery through multimedia resources and from any digital device with internet connection”

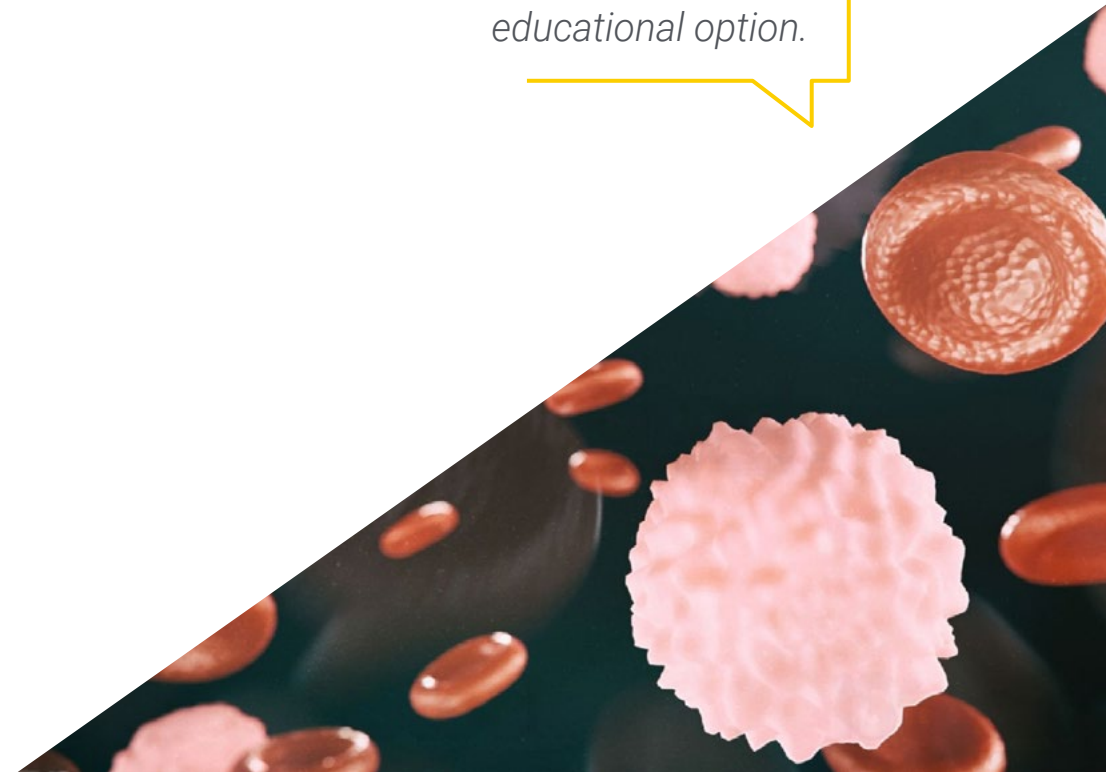
The program's teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 education programmed to learn 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. This will be done with the help of an innovative system of interactive videos made by renowned experts.

With TECH you will be up to date with the most rigorous and effective procedures in Vascular Surgery Reinterventions.

Increase your surgical competences in Vascular Diseases through a flexible educational option.



02

Objectives

The aim of this program is to provide an intensive and complete update on the diagnosis and approach to Arterial Diseases based on the latest scientific evidence over 6 months. To achieve this goal, TECH provides a rigorous syllabus, developed by a teaching team specialized in this area with a consolidated trajectory in reference hospitals. In addition to this, the didactic resources that make up the extensive Virtual Library of this program are also available.



“

Numerous didactic material is available, including simulations of clinical case studies provided by excellent specialists in Vascular Surgery”

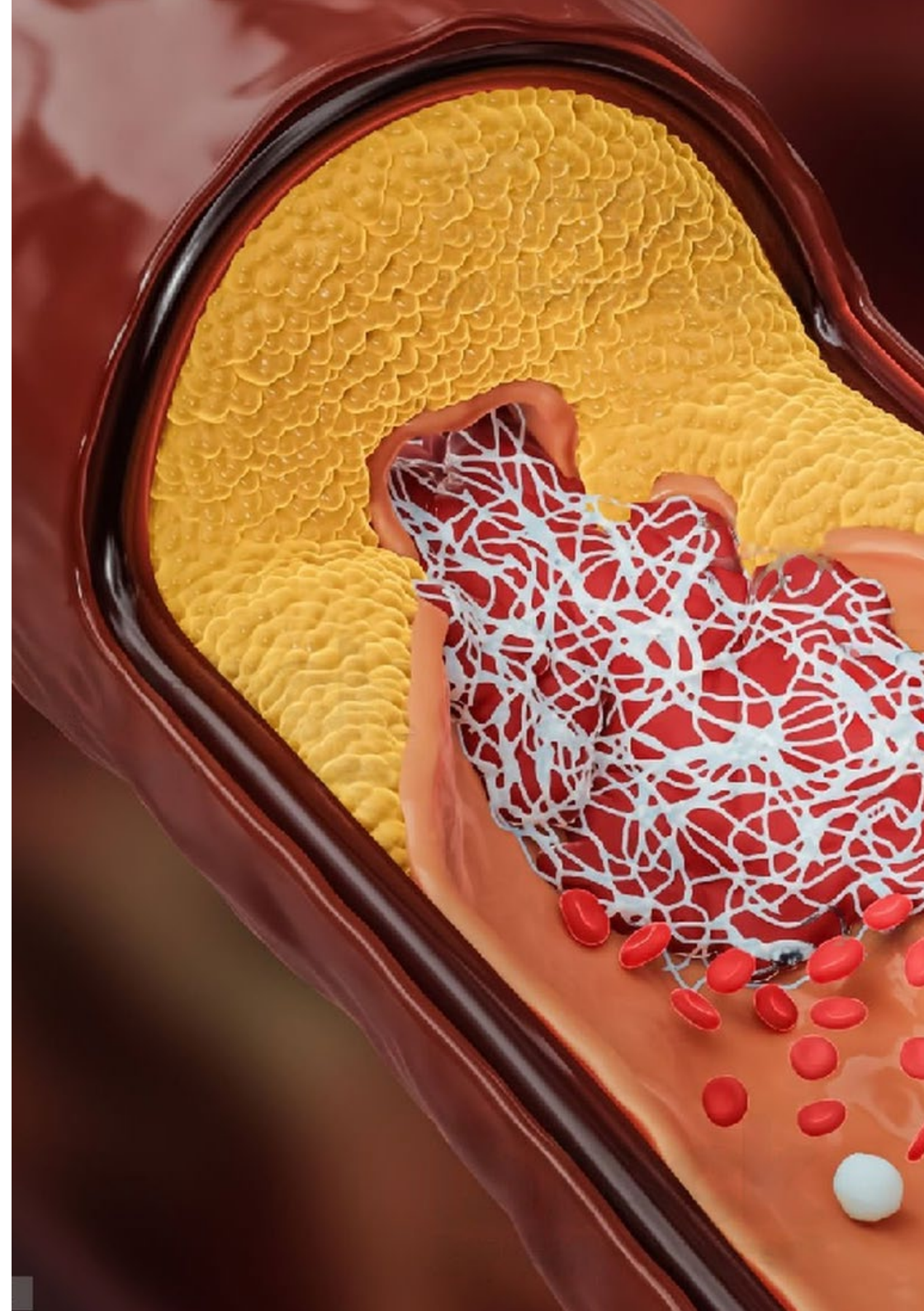


General Objectives

- Learn about the structure and function of blood vessels, both arterial and venous, and the regulation of blood flow in the microcirculation
- Delve into the epidemiology and Risk Factors
- Update knowledge on the main risk factors for the development of vascular diseases and the strategies for primary and secondary prevention
- Gain in-depth understanding of the pathophysiology of vascular diseases
- Inquire into the different diagnostic methods
- Delve into the diagnostic techniques used in vascular pathology, including clinical examination and vascular semiology, imaging methods, laboratory diagnosis and study of vascular function and hemodynamics
- Explain the different Arterial Diseases pathology, especially those focused on vascular pathology, including the development of new drug therapies, genetics and genomics in vascular diseases, and the development of new imaging techniques for the diagnosis and follow-up of vascular diseases



Delve with total comfort from your home in the improvement of imaging techniques such as angiography and tomography in the diagnosis of vascular diseases"





Specific Objectives

Module 1. Vascular Anatomy and Physiology

- ♦ Inquire into the anatomy and histology of arteries and veins
- ♦ Delve into the physiology of arterial and venous circulation
- ♦ Delve into the regulation of blood flow in the microcirculation

Module 2. Arterial Diseases

- ♦ Delve into the etiology of arterial diseases, including risk factors and underlying causes, such as chronic inflammation, oxidative damage, hypertension and diabetes
- ♦ Delve into the pathogenesis and molecular mechanisms involved in the formation of atherosclerotic plaques
- ♦ Delve into the clinical evaluation and interpretation of diagnostic tests, such as Doppler ultrasound, angiography and computed tomography

Module 3. Surgical and Endovascular Treatment of Vascular Diseases

- ♦ Delve into the concepts of vascular surgery, including surgical techniques and procedures used for the treatment of vascular diseases
- ♦ Delve into endovascular treatment, including the use of catheters, guidewires, and devices for the treatment of vascular diseases
- ♦ Select appropriate patients for different surgical and endovascular procedures
- ♦ Delve into the complications associated with surgical and endovascular procedures, as well as techniques for their management
- ♦ Interpret and use different imaging techniques, such as angiography, ultrasound and tomography, for the diagnosis and follow-up of vascular diseases

03

Course Management

Specialists who take this Postgraduate Diploma will have at their disposal a syllabus prepared by experts in Angiology and Vascular Surgery. Their vast clinical experience, together with their vocation, is reflected in this program that will allow the graduate to carry out a complete update in Arterial Diseases from the hand of consolidated professionals in this area. In addition, their proximity will help you to solve any doubts you may have about the content of the syllabus throughout this educational itinerary.





“

A program developed by consolidated specialists in Angiology and Vascular Surgery will lead you to delve into an unparalleled academic proposal"

Management



Dr. Del Río Sola, María Lourdes

- Head of the Angiology and vascular surgery at Valladolids Clinical University Hospital
- Specialist in Angiology and Vascular Surgery
- European Board in Vascular Surger
- Permanent Correspondents of the Royal Academy of Medicine and Surgery
- Professor at Miguel de Cervantes European University
- Associate Teacher in Health Sciences, University of Valladolid



Professors

Dr. Martín Pedrosa, José Miguel

- ♦ Head of the Angiology and vascular surgery at Valladolids Clinical University Hospital
- ♦ Specialist in Angiology and Vascular Surgery
- ♦ PhD Cum Laude in Surgery from the University of Valladolid
- ♦ Member of: Scientific Committee of the Endovascular Surgery Chapter of the Spanish Society of Angiology and Vascular Surgery (SEACV)

Dr. Revilla Calavia, Álvaro

- ♦ Assistant Physician at the the Angiology and vascular surgery at Valladolid Clinical University Hospital
- ♦ Specialist in Angiology and Vascular Surgery
- ♦ Associate Professor at Miguel de Cervantes European University
- ♦ Doctor Cum Laude from the University of Valladolid
- ♦ Certification of the second level training course in Radiation Protection oriented to interventional practice
- ♦ Academic Correspondent of the Royal Academy of Medicine and Surgery of Valladolid

04

Structure and Content

Thanks to the syllabus of this Postgraduate Diploma, the graduate will be aware of the advances and improvement of the diagnostic and intervention techniques carried out in patients with arterial diseases. All this, agglutinated in 450 teaching hours and with the best didactic material. Resources that provide dynamism, a much more modern and current approach in the process of updating knowledge in the clinical field. An unique opportunity that only offer TECH, the largest online university in the world.





“

A syllabus designed to increase your competence in the approach to arterial diseases and complications of vascular surgery”

Module 1. Vascular Anatomy and Physiology

- 1.1. Anatomical structure of blood vessels
 - 1.1.1. Composition of arterial and venous walls
 - 1.1.2. The Structure of the Vascular Endothelium
 - 1.1.3. Types of cells present in the vascular wall
- 1.2. Blood Vessels Functions
 - 1.2.1. Transport of nutrients and oxygen
 - 1.2.2. Blood Pressure Regulation
 - 1.2.3. Control of blood flow and blood distribution in the organism
- 1.3. Human Circulatory System
 - 1.3.1. Anatomy and function of the heart
 - 1.3.2. Cardiac cycle and its relation to blood circulation
 - 1.3.3. Electrical conduction pathways in the heart
- 1.4. Arterial and Venous Circulation
 - 1.4.1. Structural differences between arteries and veins
 - 1.4.2. Backflow and venous return mechanisms
 - 1.4.3. Tissue Perfusion phenomena
- 1.5. Control of blood flow
 - 1.5.1. Mechanisms of local regulation of blood flow
 - 1.5.2. Regulation of blood flow by the autonomic nervous system
 - 1.5.3. Hormonal Control of blood flow
- 1.6. Adaptive mechanisms of the blood vessels
 - 1.6.1. Arterial remodeling in hypertension
 - 1.6.2. Venous adaptation in chronic venous insufficiency
 - 1.6.3. Mechanisms of vascular response to hypoxia
- 1.7. Vascularization of organs and tissues
 - 1.7.1. Characteristics of microcirculation
 - 1.7.2. Mechanisms of angiogenesis
 - 1.7.3. Vascular repercussions of systemic diseases

- 1.8. Influence of age on the vascular system
 - 1.8.1. Anatomical and functional changes of the vascular system with age
 - 1.8.2. Vascular aging and atherosclerosis
 - 1.8.3. Clinical repercussions of vascular fragility in the elderly
- 1.9. Anatomical and physiological Variations of blood vessels
 - 1.9.1. Congenital Abnormalities of blood vessels
 - 1.9.2. Variations in the anatomical arrangement of the blood vessels
 - 1.9.3. Role of anatomical variants in vascular pathology
- 1.10. Hormonal regulation in the vascular system
 - 1.10.1. Action of the catecholamines in the cardiovascular system
 - 1.10.2. Influence of natriuretic peptides on vascular tone
 - 1.10.3. Effects of sex steroids on the vascular system

Module 2. Arterial Diseases

- 2.1. Arterial Diseases
 - 2.1.1. Coronary Arterial Disease
 - 2.1.2. Peripheral Arterial Disease
 - 2.1.3. Cerebral arterial Disease
- 2.2. Etiology of Arterial Diseases
 - 2.2.1. Cardiovascular risk factors: hypertension, diabetes, hyperlipidemia, smoking, sedentary lifestyle
 - 2.2.2. Autoimmune diseases: giant cell arteritis, Takayasu's disease
 - 2.2.3. Genetic diseases: Marfan syndrome, Ehlers-Danlos disease
- 2.3. Symptoms and Signs of Arterial Diseases
 - 2.3.1. Chest pain and other symptoms of coronary artery disease
 - 2.3.2. Intermittent claudication and other symptoms of peripheral arterial disease
 - 2.3.3. Stroke and other symptoms of cerebral arterial disease
- 2.4. Diagnosis of Arterial Diseases: methods and techniques
 - 2.4.1. Imaging tests: angiography, Doppler ultrasonography, computed tomography, magnetic resonance imaging
 - 2.4.2. Vascular function tests: ankle-brachial indices, plethysmography, Doppler study
 - 2.4.3. Clinical evaluation: medical history, physical examination, stress tests

- 2.5. Medical treatment of arterial diseases: antiplatelet and anticoagulant drugs
 - 2.5.1. Antiplatelet agents: aspirin, clopidogrel, ticagrelor
 - 2.5.2. Analgesia: Warfarin, heparin, rivaroxaban
 - 2.5.3. Treatment of hypertension, diabetes and hyperlipidemia to reduce the risk of arterial disease
- 2.6. Endovascular treatment of arterial disease: angioplasty, stenting, atherectomy
 - 2.6.1. Balloon angioplasty: technique to open a narrowed artery
 - 2.6.2. Stent placement: metal tube that keeps an artery open
 - 2.6.3. Atherectomy: technique to remove plaque from an artery
- 2.7. Surgical Treatment of Arterial Diseases: bypass, endarterectomy
 - 2.7.1. Coronary artery bypass: technique for bypassing blood around a blocked coronary artery
 - 2.7.2. Carotid Endarterectomy: technique to remove plaque from the carotid artery
 - 2.7.3. Peripheral bypass surgery: technique to bypass blood around a blocked peripheral artery
- 2.8. Management of Diabetic Foot
 - 2.8.1. Prevention: regular foot care and diabetes control
 - 2.8.2. Wound and ulcer treatment: wound healing and foot care
 - 2.8.3. Revascularization surgery: technique to improve blood flow to the foot
- 2.9. Vascular rehabilitation
 - 2.9.1. Supervised exercise programs
 - 2.9.2. Education on vascular disease management
 - 2.9.3. Occupational therapy and physical therapy
- 2.10. Prognosis and Follow-up of Arterial Diseases
 - 2.10.1. Periodic assessment of disease status
 - 2.10.2. Assessment of response to treatment
 - 2.10.3. Identification and Management of Complications

Module 3. Surgical and Endovascular Treatment of Vascular Diseases

- 3.1. Vascular Surgery
 - 3.1.1. Vascular anatomy: structures and function of the circulatory system
 - 3.1.2. Vascular pathologies: diseases and disorders affecting the blood vessels
 - 3.1.3. Revascularization surgery: surgical procedures to restore blood flow
- 3.2. Principles of Endovascular Surgery
 - 3.2.1. Vascular access: techniques to reach the site of intervention inside the body
 - 3.2.2. Device selection: choice of appropriate materials and tools for each procedure
 - 3.2.3. Imaging techniques: use of technology to guide the procedure and monitor the outcome
- 3.3. Selection of the treatment method: criteria and decisions
 - 3.3.1. Severity of the disease: determination of the severity of the pathology and its impact on the patient's health
 - 3.3.2. Location of the lesion: consideration of the location of the vascular problem and surgical accessibility
 - 3.3.3. Patient's health status: assessment of the patient's general medical condition, including possible contraindications
- 3.4. Surgical techniques: description and application
 - 3.4.1. Bypass surgery
 - 3.4.2. Endarterectomy
 - 3.4.3. Aneurysmectomy
- 3.5. Endovascular techniques: description and application
 - 3.5.1. Angioplasty: dilation of a narrowed artery by means of an inflatable balloon
 - 3.5.2. Vascular stent: placement of a metallic device to keep an artery open
 - 3.5.3. Embolization: deliberate obstruction of a blood vessel to treat a lesion or malformation

- 3.6. Vascular Surgery Complications
 - 3.6.1. Thrombosis: formation of blood clots
 - 3.6.2. Hemorrhage: excessive bleeding during or after the procedure
 - 3.6.3. Infection: development of an infection at the site of the procedure
- 3.7. Management of Perioperative Complications
 - 3.7.1. Monitoring of vital signs: constant monitoring of the patient's health during surgery and recovery
 - 3.7.2. Pharmacological treatment: administration of drugs to prevent or treat complications
 - 3.7.3. Additional surgical intervention: performance of rescue surgery to solve a complication
- 3.8. Reinterventions in Vascular Surgery
 - 3.8.1. Revision of anastomosis: correction of a junction between two blood vessels previously surgically joined
 - 3.8.2. Vascular prosthesis replacement: substitution of a previous vascular implant that has failed or generated complications
 - 3.8.3. Treatment of late complications: resolution of complications that arise after an initial vascular surgery





“

The theoretical-practical approach of this program will allow you to be up to date on the most effective strategies to manage perioperative complications”

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.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

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



06

Certificate

The Postgraduate Diploma in Arterial Diseases guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.





“

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

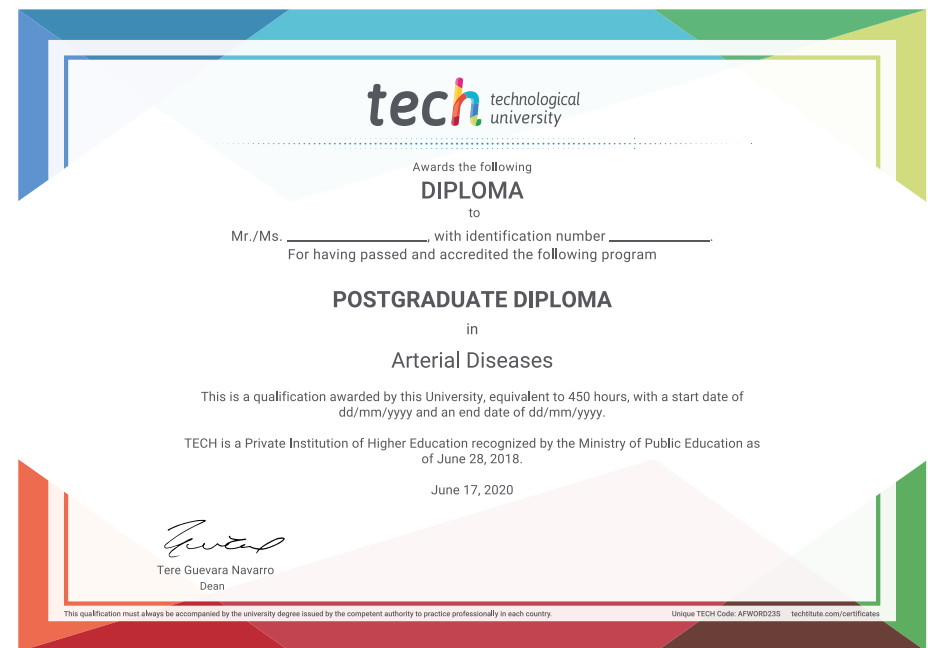
This **Postgraduate Diploma in Arterial Diseases** contains the most complete and up-to-date scientific program on the market.

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

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

Title: **Postgraduate Diploma in Arterial Diseases**

Official N° of Hours: **450 h.**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



Postgraduate Diploma Arterial Diseases

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

Postgraduate Diploma

Arterial Diseases