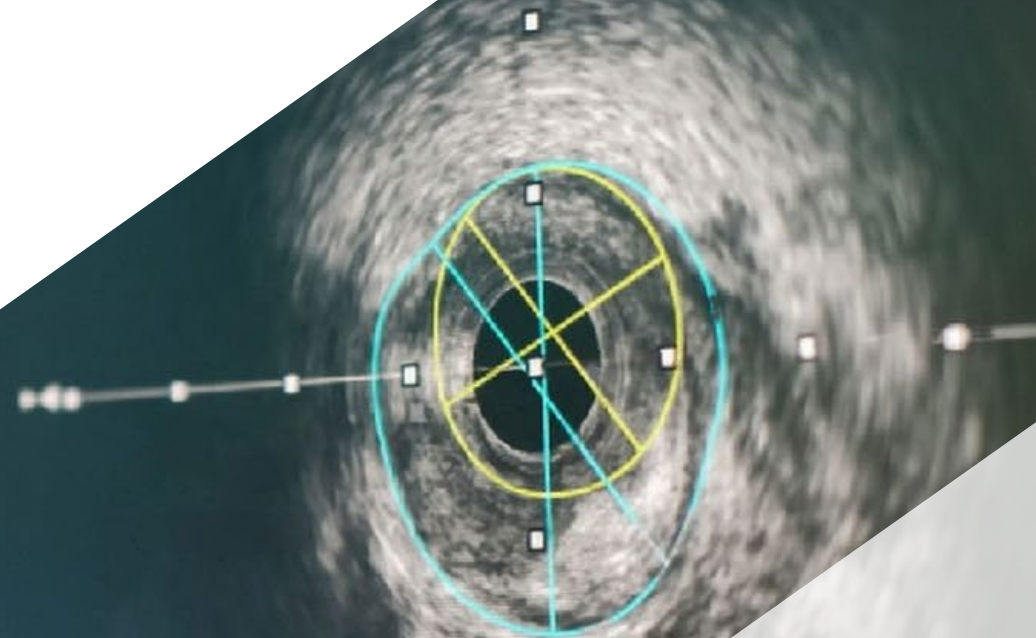


Postgraduate Diploma

Diagnostic Methods in Vascular Pathology





Postgraduate Diploma Diagnostic Methods in Vascular Pathology

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

Website: www.techtute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-diagnostic-methods-vascular-pathology

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01

Introduction

The improvement in the image quality of diagnostic equipment and the refinement of techniques for the detection of vascular diseases has made it possible to improve patient evaluation and treatment. These advances allow specialists to face the clinical and healthcare challenge with greater guarantees in an increasingly aging population or with unhealthy habits. Given this scenario, TECH has created this 100% online qualification that provides the graduate with an excellent update through an advanced syllabus on the most common methods used for the identification of Vascular Pathologies. All this, in addition, with an innovative content, prepared by real experts in Angiology and Vascular Surgery.



“

Get in only 6 months a complete update in methods of exploration and diagnosis of the main Vascular Pathologies"

In the field of Vascular Surgery there has been a constant evolution in the detection of diseases sponsored by advances in diagnostic equipment, as well as the techniques used for it. Advances that result in the appropriate choice of treatment and in the improvement of the results for the patient's health.

A scenario that leads specialists in Vascular Surgery to be constantly updating their knowledge in this field, according to the latest scientific evidence. For this reason, TECH has decided to design this 6-month program, where the graduate will be aware of the most relevant advances in diagnostic methods in Vascular Pathology.

This is an intensive program of 450 teaching hours, which will allow the graduate to delve into peripheral arterial disease, coronary artery disease, venous insufficiency and thrombosis or the pathogenesis and consequences of diabetic vasculopathy, among other vascular diseases. In addition, this educational option will place special emphasis on the evaluation procedures currently available and their relevance in the interpretation of the results provided.

All this will be possible thanks to the multitude of teaching resources provided by TECH, including video summaries of each topic, videos in detail, complementary readings and simulations of clinical case studies. Furthermore, thanks to the Relearning method, based on the continuous repetition of the content throughout the course, the graduate will reduce the long hours of study and memorization.

This is an excellent opportunity to improve skills in this field through a flexible university proposal. The medical professional only needs a digital device with an internet connection to visualize, at any time of the day, the syllabus hosted on the virtual platform. Undoubtedly, an advanced educational option, which adapts to the real needs of the health sector.

This **Postgraduate Postgraduate Diploma in Diagnostic Methods in Vascular Pathology** 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



A qualification based on the latest scientific evidence in medicine and its direct application in the praxis of every specialist in Vascular Surgery"

“

This qualification will show you in a dynamic way the most common errors in the interpretation of the results of diagnostic tests in Vascular Pathology”

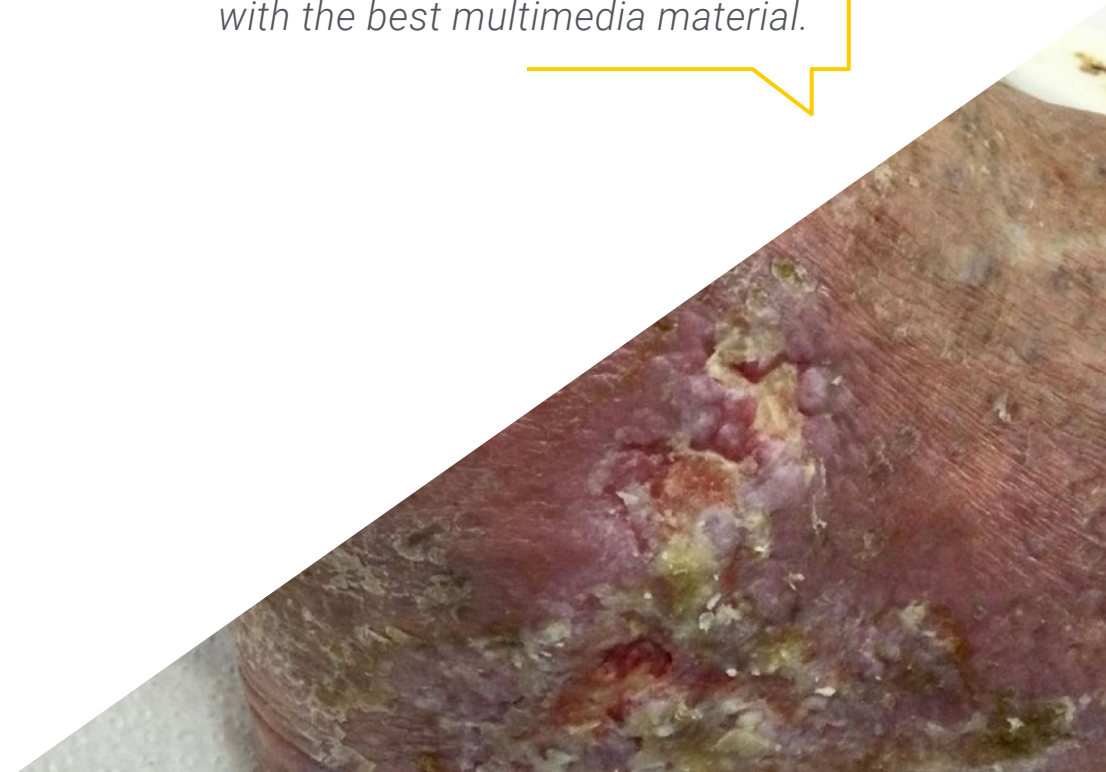
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

Extend the content of this syllabus even further with the medical literature provided by this 450-hour course.

Delve into vascular lesions, aneurysms, arteriovenous malformations and vasculitis with the best multimedia material.



02

Objectives

This Postgraduate Diploma has been designed to provide over 6 months, the latest information on vascular diseases and the different methods of diagnosis in an area in continuous evolution. To achieve this goal, TECH provides pedagogical tools in which they have used the latest technology applied to the educational environment. Among them are clinical case studies and audiovisual material that provide a theoretical-practical perspective, essential for daily practice.





“

With a theoretical-practical approach you will be able to integrate the most notorious advances in the performance of laboratory tests to perform more rigorous differential diagnoses"



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 research methods and advances in vascular 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





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. Pathophysiology of Vascular Diseases

- ♦ Delve into atherosclerosis as the pathological process underlying most systemic vascular diseases, including coronary artery disease, cerebrovascular disease and peripheral vascular disease
- ♦ Delve into inflammatory vascular diseases, such as giant cell arteritis, polyarthritis nodosa, Wegener's granulomatosis, among others, and delve into the pathophysiological mechanisms underlying their development
- ♦ Delve into diabetic vasculopathy and its relationship with Diabetes Mellitus, as well as to learn about renal vascular diseases, such as renal artery stenosis or diabetic nephropathy
- ♦ Update knowledge on the identification of the different vascular diseases, the understanding of their pathophysiology and their impact on patients' health
- ♦ Delve into the clinical assessment and diagnosis of vascular diseases, including the performance of diagnostic tests and interpretation of results
- ♦ Delve into the treatments available for vascular diseases, including pharmacologic therapies, surgical interventions and other complementary therapies

Module 3. Diagnostic Methods in Vascular Pathology

- ♦ Delve into the semiology and clinical vascular examination for the identification of signs and symptoms of vascular diseases
- ♦ Investigate the different imaging methods used in vascular pathology, such as angiography, Doppler ultrasound, computed tomography and magnetic resonance imaging, among others
- ♦ Interpret the results of the different diagnostic imaging methods, depending on the vascular pathology in question
- ♦ Delve into laboratory diagnostic techniques for the study of vascular diseases, such as coagulation tests, hemogram and blood biochemistry



With TECH you will be up to date with advances in radiology, ultrasonography, tomography, magnetic resonance imaging for the detection of vascular diseases"

03

Course Management

In order to provide a complete update in Diagnostic Methods in Vascular Pathology with all the guarantees of quality, TECH has carried out a thorough selection process of each and every one of the teachers that integrate this program. In this way, graduates will have at their disposal a syllabus prepared by consolidated experts in Angiology, Vascular Surgery and in the field of teaching at the highest level. In addition, thanks to the proximity of the teaching staff, The Student Body will be able to resolve any doubts they may have about the content of this program.





“

You will achieve an effective update thanks to the work of the teaching staff, specialists in Angiology and Vascular Surgery that are part of this program"

Management



Dr. Del Río Sola, María Lourdes

- ♦ Head of the Angiology and vascular surgery at Valladolid 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. 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

Dr. Cenizo Revuelta, Noelia

- ♦ Assistant Physician at the the Angiology and vascular surgery at Valladolid Clinical University Hospital
- ♦ Specialist in Angiology and Vascular Surgery(ACV)
- ♦ Tutor accredited by the University of Valladolid
- ♦ Tutor Coordinator of the LCA Teaching Unit of the Valladolid Clinical University Hospital
- ♦ Professor in charge of the subject "Medical Pathology" in the Degree of Dentistry of the European University Miguel de Cervantes (UEMC) of Valladolid
- ♦ Associate Professor at the University of Valladolid
- ♦ PhD Cum Laude and Extraordinary Award the Doctorate in Medicine and Surgery from from the University of Valladolid



04

Structure and Content

Graduates who access this Postgraduate Diploma will have at their disposal a syllabus based on the latest scientific evidence on the different methods of diagnosis in Vascular Pathology. This is done by delving into the Anatomy and Vascular Physiology, the Pathophysiology of Vascular Diseases to delve into the main techniques and procedures to detect them. All this, in addition, complemented by innovative didactic material, accessible at any time of the day, from an electronic device with internet connection.



“

An educational option that gives you the flexibility you are looking for. Combine your clinical responsibilities with a quality educational program"

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. Pathophysiology of Vascular Diseases

- 2.1. Vascular Physiopathology
 - 2.1.1. Alterations in the structure and function of blood vessels that can lead to various diseases
 - 2.1.2. Changes in the regulation of blood flow and blood pressure that may affect tissue perfusion
 - 2.1.3. Abnormal responses of vascular endothelium and vascular wall cells to different stimuli, such as inflammation, hypoxia, and stress
- 2.2. Cellular and molecular mechanisms of vascular diseases
 - 2.2.1. Endothelial dysfunction and alterations in the production and activity of vasodilator and vasoconstrictor factors
 - 2.2.2. Cell proliferation and migration of smooth muscle cells that can lead to the formation of atheromatous plaques and stenosis
 - 2.2.3. Activation of inflammatory cells and release of inflammatory mediators that may contribute to vascular injury and disease progression
- 2.3. Modifiable and Non-modifiable risk factors
 - 2.3.1. Non-modifiable risk factors: Age, Family history, Genetics
 - 2.3.2. Modifiable risk factors: Tobacco, Diet, Physical activity
 - 2.3.3. Risk factor prevention approaches: primary, secondary and tertiary



- 2.4. Primary and Secondary Vascular Injuries
 - 2.4.1. Primary Vascular Injuries: Aneurysms, arteriovenous malformations, vasculitis
 - 2.4.2. Secondary vascular Injuries: deep vein thrombosis, pulmonary embolism, atherosclerosis
 - 2.4.3. Comparison between Primary and Secondary Vascular Injuries
- 2.5. Inflammatory and repair responses in vascular diseases
 - 2.5.1. Role of inflammatory cells in vascular diseases
 - 2.5.2. Cell-cell and cell-matrix interactions in vascular inflammation
 - 2.5.3. Biomarkers of inflammation and vascular repair
- 2.6. Development of atherosclerosis
 - 2.6.1. Molecular mechanisms of atherosclerotic plaque formation
 - 2.6.2. Non-invasive assessment of atherosclerosis
 - 2.6.3. Pharmacological and non-pharmacological therapies for atherosclerosis
- 2.7. Deep venous thrombosis and pulmonary embolism
 - 2.7.1. Risk factors for deep vein thrombosis and pulmonary embolism
 - 2.7.2. Diagnostic methods for deep vein thrombosis and pulmonary embolism
 - 2.7.3. Treatment of deep vein thrombosis and pulmonary embolism
- 2.8. Pathophysiology of chronic venous insufficiency
 - 2.8.1. Mechanisms of development of chronic venous insufficiency
 - 2.8.2. Clinical Assessment of chronic venous insufficiency
 - 2.8.3. Treatment of Chronic Venous insufficiency
- 2.9. Effects of aging on the vascular system
 - 2.9.1. Physiological changes in the vascular system during aging
 - 2.9.2. Relationship between aging and vascular diseases
 - 2.9.3. Strategies to prevent or delay the aging of the vascular system
- 2.10. Role of genetics in Cellular diseases and molecular mechanisms of vascular diseases
 - 2.10.1. Genes related to vascular diseases
 - 2.10.2. Methods for diagnosis and early detection of inherited vascular diseases
 - 2.10.3. Personalized treatments based on the genetics of each patient

Module 3. Diagnostic Methods in Vascular Pathology

- 3.1. Importance of Diagnostic in Vascular Pathology
 - 3.1.1. Consequences of an incorrect or late diagnosis in vascular diseases
 - 3.1.2. Role of prevention and early detection in the diagnosis of vascular diseases
 - 3.1.3. Importance of follow-up and evaluation of treatment in the diagnosis of vascular diseases
- 3.2. Physical Examinations Methods
 - 3.2.1. Inspection, palpation and auscultation in vascular examination
 - 3.2.2. Signs and symptoms indicating vascular diseases in physical examination
 - 3.2.3. Importance of physical examination in the differential diagnosis of vascular diseases
- 3.3. Diagnostic Imaging methods: radiology, ultrasonography, tomography, magnetic resonance imaging
 - 3.3.1. Basic principles of each Diagnostic imaging method
 - 3.3.2. Indications and Contraindications of each Diagnostic imaging method
 - 3.3.3. Advantages and limitations of each Diagnostic imaging method in Vascular Pathology
- 3.4. Vascular functional tests: ankle-brachial indices, plethysmography, Doppler study
 - 3.4.1. Basic principles of each vascular functional test
 - 3.4.2. Indications and Contraindications of each vascular functional test
 - 3.4.3. Interpretation of the results of each vascular functional test in Vascular Pathology
- 3.5. Angiography and Arteriography
 - 3.5.1. Indications and Contraindications of Angiography and arteriography
 - 3.5.2. Basic Principles of Angiography and arteriography
 - 3.5.3. Interpretation of the results of Angiography and arteriography in Vascular Pathology
- 3.6. Vascular endoscopy
 - 3.6.1. Indications and Contraindications of vascular endoscopy
 - 3.6.2. Basic principals of vascular endoscopy
 - 3.6.3. Interpretation of the results of each vascular endoscopy in Vascular Pathology
- 3.7. Vascular Biopsies
 - 3.7.1. Indications and Contraindications of vascular Biopsies
 - 3.7.2. Basic principals of vascular Biopsies
 - 3.7.3. Interpretation of the results of each vascular Biopsies in Vascular Pathology





- 3.8. Interpretation of diagnostic test results
 - 3.8.1. Criteria for the Interpretation of diagnostic test results
 - 3.8.2. Importance of clinical correlation in the interpretation of diagnostic test results
 - 3.8.3. Common errors in the interpretation of diagnostic test results in Vascular Pathology
- 3.9. Role of Clinical Assessment in the Diagnoses
 - 3.9.1. Importance of Medical History in the diagnosis of vascular diseases
 - 3.9.2. Role of prevention and early detection in the diagnosis of vascular diseases
 - 3.9.3. Interpretation of diagnostic test results in the Clinical Context
- 3.10. Differential Diagnosis of Vascular Diseases
 - 3.10.1. Clinical and radiologic differences between common vascular diseases
 - 3.10.2. Criteria for differential diagnosis between vascular diseases
 - 3.10.3. Importance of comprehensive patient evaluation in the differential diagnosis of diseases

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Do you want to be up to date with the scientific evidence on diagnostic methods in Vascular Pathology? Get it through this 100% online program"

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.



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

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

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



According to Dr. 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 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 Diagnostic Methods in Vascular Pathology 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 Diagnostic Methods in Vascular Pathology** 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 certificate 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 Diagnostic Methods in Vascular Pathology**

Official N° of Hours: **450 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.



Postgraduate Diploma
Diagnostic Methods
in Vascular Pathology

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

Postgraduate Diploma

Diagnostic Methods in Vascular Pathology

