

Postgraduate Certificate

Vascular Anatomy and Physiology





Postgraduate Certificate Vascular Anatomy and Physiology

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

Website: www.techtute.com/us/medicine/postgraduate-certificate/vascular-anatomy-physiology

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01

Introduction

Recent research in vascular anatomy and physiology has made excellent advances in the regulation of blood flow and endothelial function. In this way, innovative cell signaling mechanisms and molecules have been detected that contribute positively to the prevention and treatment of vascular diseases. Specialists are therefore obliged to detect these advances in order to optimize their professional update in the field of Vascular Surgery. Consequently, TECH has created this program, through which the student will deepen in the most updated aspects of the mechanisms of adaptation of blood vessels or vascularization of organs and tissues. In addition, its 100% online teaching will enable you to study without having to travel to a physical center.





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Through this Postgraduate Certificate, you will delve into the latest scientific evidence on the mechanisms of adaptation of blood vessels”

Vascular Anatomy and Physiology is a health branch that, in tune with scientific advances, is constantly evolving. In recent years, it has been detected that changes in vascular geometry and biomechanical properties can influence the progression of vascular diseases. As a result, it is possible to establish a rigorous monitoring and treatment of these diseases, ensuring the well-being of the patients who suffer from them. Therefore, keeping up to date in this field is crucial for any specialist who wishes to be at the medical forefront.

That is why TECH has created the Postgraduate Certificate in Vascular Anatomy and Physiology, which will provide students with the most advanced aspects in this field in just 6 weeks of educational experience. In 150 hours of study, you will learn about recent advances in anatomical and physiological variations of blood vessels or hormonal regulation in the vascular system. Likewise, it will delve into the mechanisms of venous recoil and venous return or the influence of age on the vascular system according to the latest scientific evidence.

All this, following a revolutionary methodology 100% online, which will allow students to develop their own study schedules to achieve a fully optimized learning. In addition, this Postgraduate Certificate has been designed and developed by excellent specialists in the area of Vascular Surgery, who have a long professional career behind them. Therefore, the knowledge you will receive throughout the program will be fully applicable in your daily practice.

This **Postgraduate Certificate in Vascular Anatomy and Physiology** 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



Delve into recent advances in the anatomical and physiological variations of blood vessels through this program"

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With a 100% online methodology, you will get an excellent update in Vascular Anatomy and Physiology without having to leave your home"

Enjoy a syllabus designed by specialists in Vascular Surgery who hold responsible positions in prestigious hospitals.

Don't miss this opportunity to update your knowledge with the best study facilities in the educational panorama!

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.



02 Objectives

The Postgraduate Certificate in Vascular Anatomy and Physiology has been designed with the aim of providing professionals with the most up-to-date knowledge in this field. In this way, they will be able to delve into the recent anatomical advances of the arteries and veins or the physiology of arterial and venous circulation in just 6 weeks. In addition, the objectives set by TECH for this program will guarantee the quality of learning.





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Through this program, explore the recent advances in the anatomy of veins and arteries”



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

- 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

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Follow the objectives that TECH has outlined for this program and place yourself at the forefront of Vascular Surgery”

03

Course Management

In order to preserve intact the excellent educational level typical of TECH programs, this Postgraduate Certificate has a teaching staff made up of specialists who are actively practicing in the field of Vascular Surgery in prestigious hospitals. Since these professionals are the ones in charge of the elaboration of the didactic contents of this degree, all the knowledge provided to the students will be fully up to date.



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*Along with the best specialists in
Vascular Surgery, you will be up to date
in Vascular Anatomy and Physiology”*

Address



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
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- ♦ 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
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- ♦ 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

The syllabus of this Postgraduate Certificate has been developed with the purpose of offering the student the most up to date and relevant knowledge in the field of Vascular Anatomy and Physiology. All the didactic contents present throughout the degree are available in various textual and multimedia formats, with the intention of allowing the professional to choose those that best suit their educational preferences. In addition, the online methodology of this program will enable you to study without leaving your home.





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The Relearning method presented in the Postgraduate Certificate in Vascular Anatomy and Physiology will allow you to learn at your own pace and at your own pace of study"

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



Get the most up-to-date knowledge in Vascular Anatomy and Physiology with this Postgraduate Certificate"

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

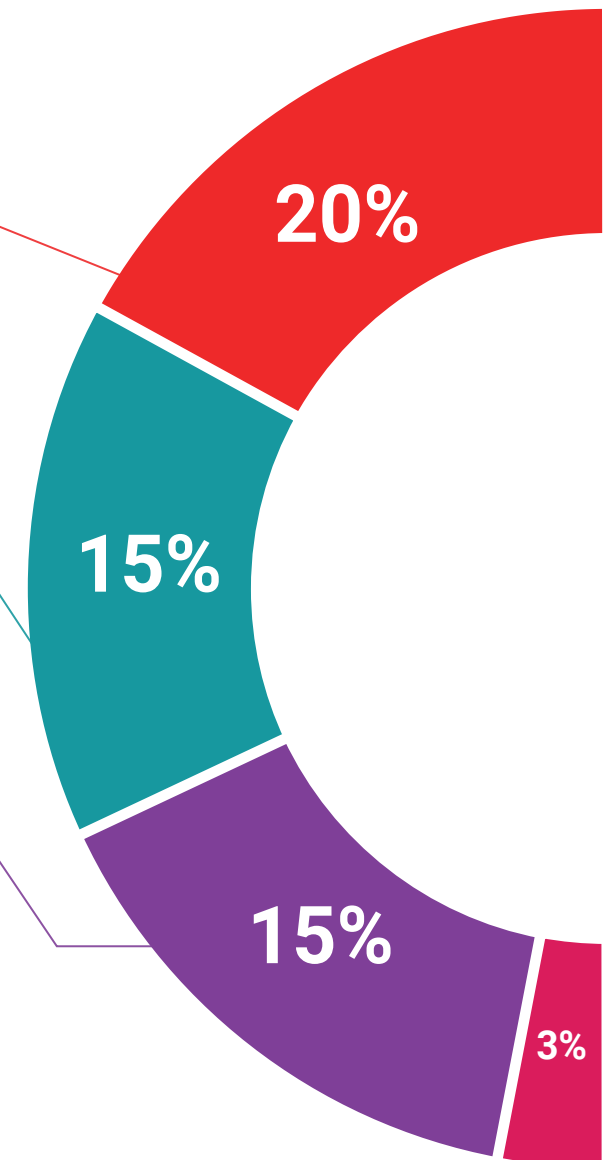
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Certificate in Vascular Anatomy and Physiology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Vascular Anatomy and Physiology** contains the most complete and up-to-date scientific 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 Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Vascular Anatomy and Physiology**

Official N° of Hours: **150 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.



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