

# Postgraduate Certificate Cardiorenal Medicine





## Postgraduate Certificate Cardiorenal Medicine

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 8h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/pk/medicine/postgraduate-certificate/cardiorenal-medicine](http://www.techtute.com/pk/medicine/postgraduate-certificate/cardiorenal-medicine)

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Certificate

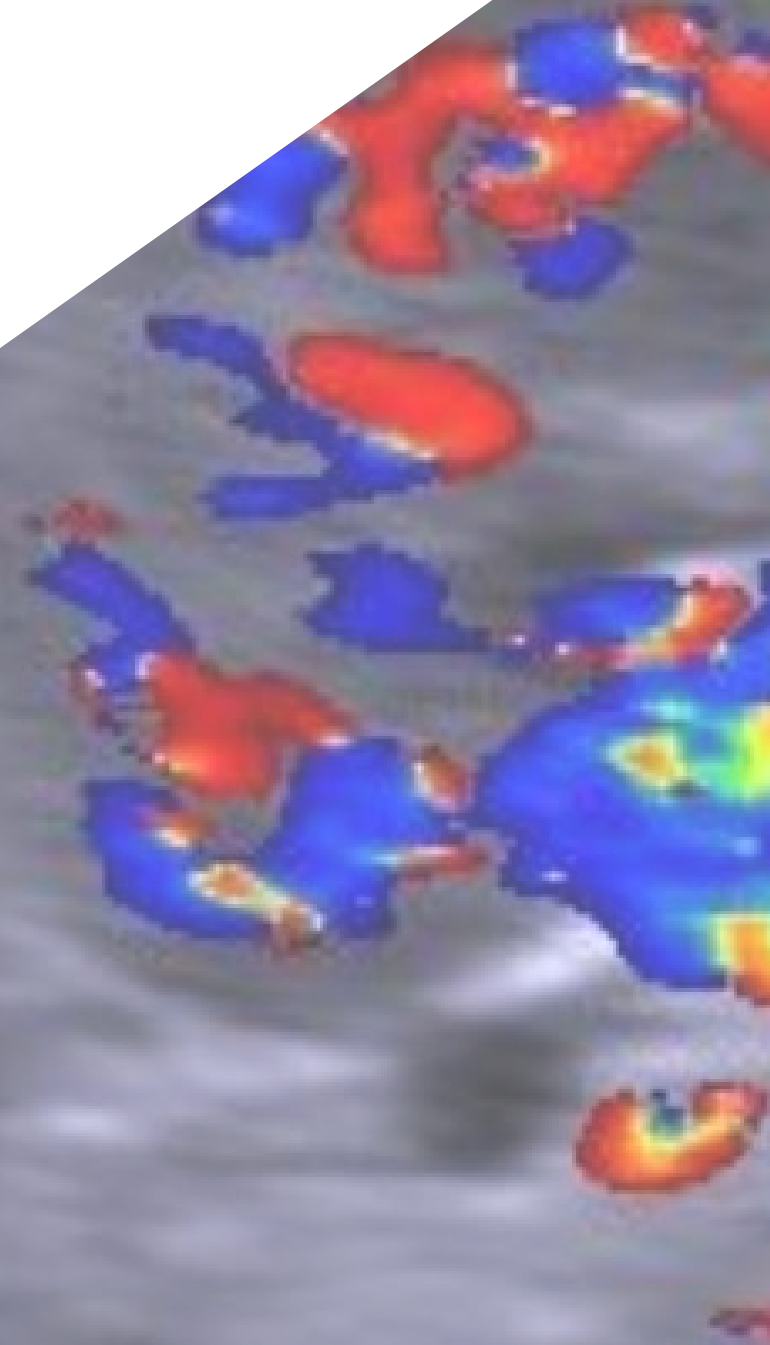
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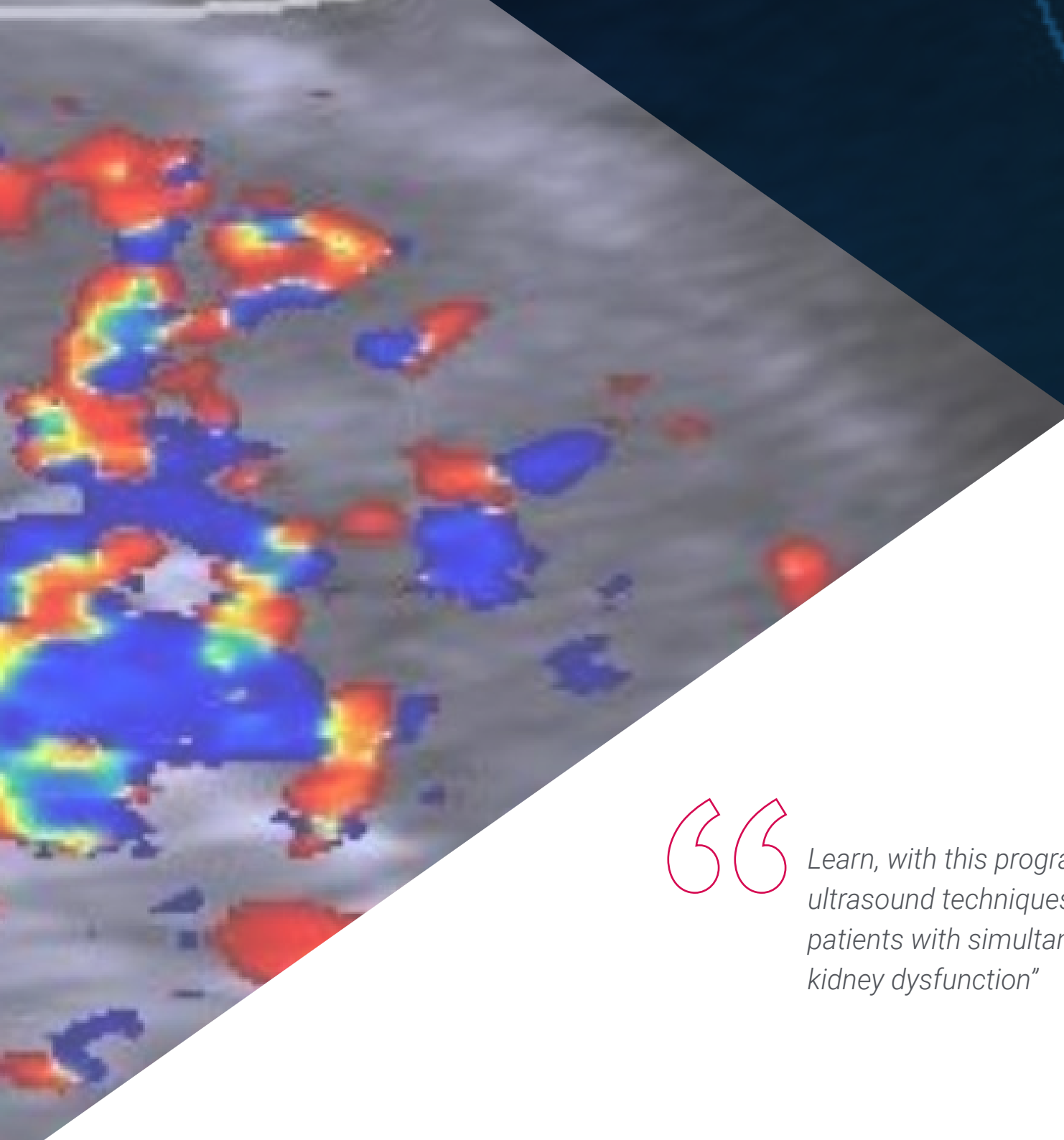
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# 01

# Introduction

As the understanding of cardiovascular and renal pathologies has progressed, there has been a growing recognition of the close relationship between the organs involved and the relevance of a multidisciplinary approach. This has generated changes in the clinical approach, emphasizing the development of comprehensive therapies for patients with these diseases. Therefore, it is crucial for specialists to be aware of the recent advances in Cardiorenal Medicine in order to position themselves at the forefront of healthcare. Consequently, TECH has designed this 100% online program, which allows the student to delve into the latest diagnostic methods and treatments for cardiorenal pathologies. In addition, you will be able to complete your updating process without giving up your daily obligations.





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*Learn, with this program, the advanced ultrasound techniques applicable to patients with simultaneous heart and kidney dysfunction”*

Nowadays, the prevalence of cardiovascular and renal diseases is highly elevated as a result of the popularization of unhealthy lifestyles and the rise of jobs that involve no physical mobility. Since suffering from pathologies of one kind can lead to the development of conditions of the other, society has focused on refining diagnostic approaches and treatments for both in a multidisciplinary way. As a result, it is possible to improve the quality of life of patients and reduce the morbidity and mortality associated with these diseases.

For this reason, the physician must keep up to date in the field of Cardiorenal Medicine in order not to be left behind with respect to the evolution of this health sector. Consequently, TECH has created this program, which will allow the specialist to delve into the latest ultrasound techniques applicable to the patient with simultaneous dysfunction of the heart and kidney or in the use of biomarkers with these individuals. It will also explore the sophisticated procedures for the management of Acute Heart Failure in people with CKD.

This program will be taught in a 100% online format, which gives the student the flexibility to access the didactic content at any time and place, simply by using a device with an internet connection. In addition, they will enjoy a wide variety of multimedia resources, including interactive summaries or simulations of real cases. Likewise, they will study through the Relearning method, which allows the specialists to delve deeper into the key concepts of the syllabus at their own educational pace in order to consolidate the acquisition of knowledge.

**This Postgraduate Certificate in Cardiorenal Medicine** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ Develop of practical cases presented by specialists in Nephrology and Internal medicine
- ◆ 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 the self-assessment process can be carried out 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



*Get your desired update in  
Cardiorenal Medicine in only  
6 weeks of study”*



“

*Delve into the latest procedures for the management of Acute Heart Failure in patients with CKD”*

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.

*Optimize your study through advanced multimedia didactic formats that only TECH offers.*

*Position yourself as a leading physician through this educational experience.*



# 02

# Objectives

The purpose of this program is to provide the physician with the most innovative knowledge in the field of Cardioresnal Medicine, identifying the most advanced methods of detection and treatment of these conditions. To this end, they will benefit from a set of advanced didactic contents available in a variety of study supports, guaranteeing an effective update for the student.





A close-up photograph of a medical device, possibly a dialyzer or a similar component. It features several clear plastic ports at the top, a textured grey surface, and a small red light indicator at the bottom. The image is partially obscured by a blue diagonal graphic element.

“

*Delve into the relevance of biomarkers  
and the updated protocols for their  
management in Cardiorenal Medicine”*



## General Objectives

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- ◆ Care for patients with chronic kidney disease and its most frequent complications
- ◆ Care for patients with acute renal failure and its complications, as well as to understand the objective of initiating renal replacement therapy, its indications and management
- ◆ Have an overview of Nephrology as a specialty with its different branches of knowledge and a global approach to the patient
- ◆ Understand and learn the branches that are emerging within the specialty such as diagnostic and interventional nephrology, onconeurology, or cardioneurology





## Specific Objectives

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- ◆ Expand the knowledge and study of cardiorenal syndrome
- ◆ Learn about the application of ultrasound and biomarkers for the study of patients with cardiorenal syndrome
- ◆ Improve the management of patients with decompensated heart failure, optimization of diuretics
- ◆ Learn the usefulness and criteria for renal replacement therapy in cardiorenal patients



*Efficiently investigate recent advances  
in Cardiorenal Medicine"*



03

# Course Management

In order to preserve the quality that distinguishes TECH's educational programs, this Postgraduate certificate has a faculty composed of renowned specialists in the field of Nephrology. These physicians, throughout their hospital experience, have acquired excellent skills in the management of patients with Cardiorenal Syndrome. Therefore, the knowledge offered to the student will will preserve a complete applicability in daily practice.



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*Get up to date in Cardiorenal Medicine  
from leading nephrologists with  
extensive hospital experience”*



## Management



### Dr. Ribas Closa, Andrés

- Nephrologist at the Sant Jordi Clinic in Sant Andreu
- Nephrology Del Mar Hospital, Barcelona
- Expert in Clinical Ultrasound at the Francisco de Vitoria University.
- Master's Degree in Infectious Diseases and Antimicrobial Treatment from the CEU Cardenal Herrera University
- Degree in Medicine from the Autonomous University of Barcelona.



### Dr. Galcerán, Josep María

- Head of Nephrology Service at Fundació Althaia in Manresa
- Head of Nephrology Service at the Hospital de Palamós
- Professor of Nephrology at the International University of Catalonia
- Former President of the Catalan Societies of Nephrology and Arterial Hypertension
- Specialization in Nephrology by the Hospital de Bellvitge
- Postgraduate degree in Basic Nephrology from the University of Minnesota
- Degree in Medicine and Surgery from the University of Barcelona
- Member of the Spanish Society of Nephrology and Arterial Hypertension



# 04

## Structure and Content

TECH presents this program, which offers a wide range of up to date concepts within this field, delving into the latest findings on the physiological interactions between the heart and the kidney or in the procedures for the management of the Cardiorenal Syndrome. Moreover, it is taught in a 100% online format, allowing students to adjust their study time to their personal and professional needs.





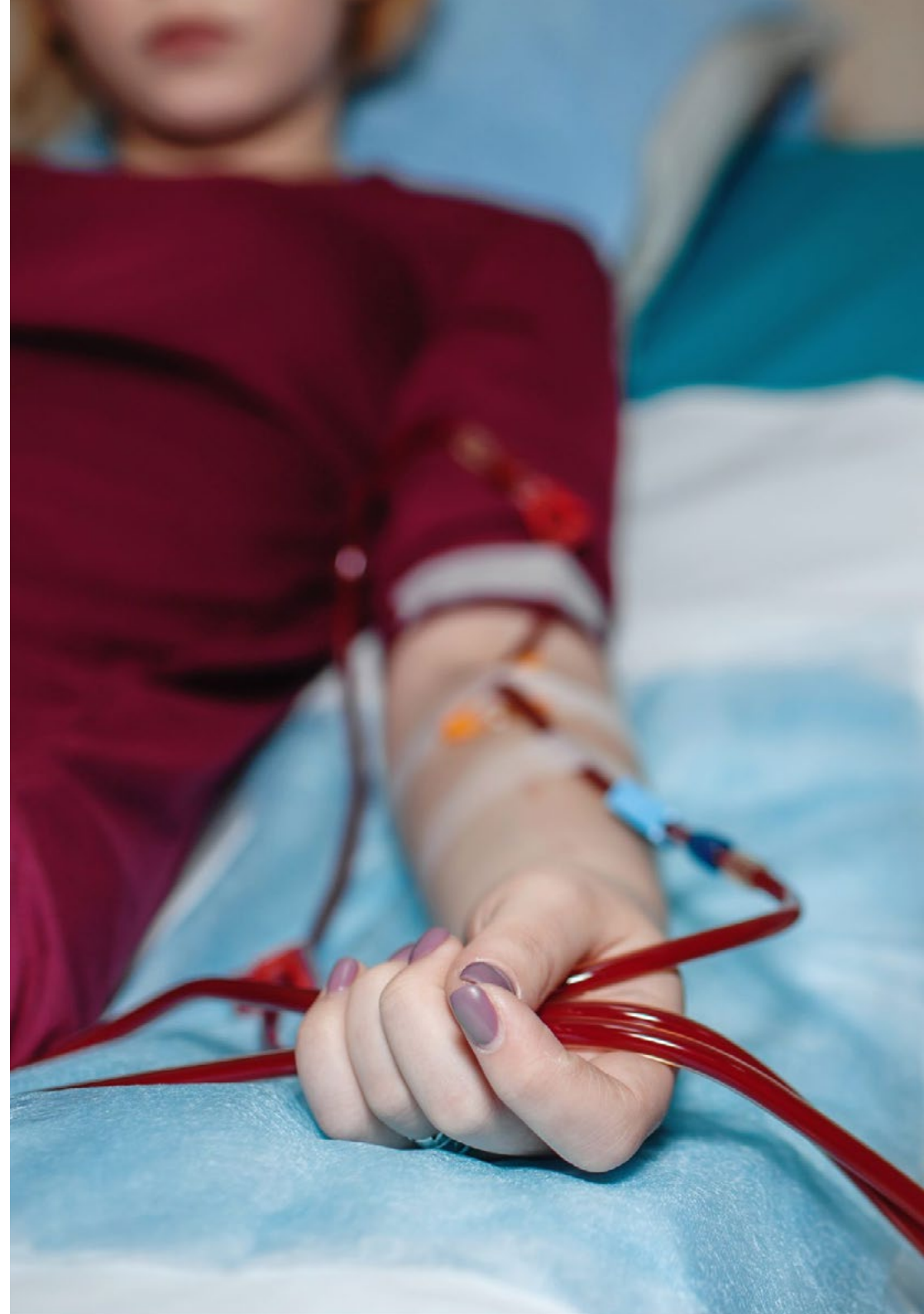


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*Update yourself at your own pace of study thanks to the revolutionary Relearning system that only TECH offers”*

## Module 1. Cardiorenal Medicine

- 1.1. Pathophysiology of Cardiorenal Syndrome
  - 1.1.1. Physiological interactions between the heart and the kidney
  - 1.1.2. Risk factors in heart-kidney interaction
  - 1.1.3. Congestive phenotypes in the cardiorenal patient
- 1.2. Vexus Protocol in the Cardiorenal Patient
  - 1.2.1. Stratification of systemic congestion
  - 1.2.2. Portal venous Doppler
  - 1.2.3. Suprahepatic venous Doppler
  - 1.2.4. Renal venous Doppler
- 1.3. Pleuropulmonary Ultrasound in Cardiorenal Patients
  - 1.3.1. Normal Pulmonary Ultrasound A lines pattern
  - 1.3.2. Pleural sliding and pleural effusion
  - 1.3.3. Blue Protocol for dyspnea study
- 1.4. Basic Echocardiography in the Cardiorenal Patient
  - 1.4.1. Basic echocardiographic planes
  - 1.4.2. Assessment of valvulopathies
  - 1.4.3. Ventricular function. TAPSE, MAPSE
  - 1.4.4. Diastolic alterations in the chronic renal patient
- 1.5. Biomarkers in the Cardiorenal Patient
  - 1.5.1. Usefulness of CA125. Usefulness of Nt-ProBNP
  - 1.5.2. Management of biomarkers in the cardiorenal patient
  - 1.5.3. Resistance to diuretics Mechanisms. Treatment
- 1.6. Bioimpedance in Cardiorenal Medicine
  - 1.6.1. Usefulness of Bioimpedance
  - 1.6.2. Limitations
  - 1.6.3. Useful parameters in the cardiorenal patient
- 1.7. Prognostic drugs in Heart Failure and CKD
  - 1.7.1. ARA-II, ACE INHIBITORS
  - 1.7.2. ARNI
  - 1.7.3. Uses of ISGLT-2 in cardiorenal patient





- 1.8. Diuretics in the Cardiorenal Patient
  - 1.8.1. Utility of loop diuretics
  - 1.8.2. Utility of acetazolamide, ADVOR study
  - 1.8.3. Sequential blockade of the nephron
  - 1.8.4. Resistance to diuretics
- 1.9. Management of Acute Heart Failure in Patients with CKD
  - 1.9.1. Diuretic dosage
  - 1.9.2. Acid-base balance disturbances. Alkalosis due to diuretic
  - 1.9.3. Furosemide Test
  - 1.9.4. Utility of inotropes
- 1.10. Renal Replacement Therapy in the Management of the Cardiorenal Patient
  - 1.10.1. Peritoneal Dialysis Utility in the patient with refractory heart failure
  - 1.10.2. Other renal replacement techniques Continuous renal replacement techniques, SCuF, intermittent hemodialysis

“*Enroll in this program and study through innovative formats such as explanatory video or interactive summary*”

# 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. 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.



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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 Cardiorenal Medicine 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 Cardiorenal Medicine** 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 certificate 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 Cardiorenal Medicine**

Official N° of Hours: **150 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.

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present quality  
development language  
virtual classroom



## Postgraduate Certificate Cardiorenal Medicine

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
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- » Exams: online

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