

# Postgraduate Certificate

## Advanced Life Support in the Postoperative Period after Cardiovascular Surgery



## Postgraduate Certificate

### Advanced Life Support in the Postoperative Period after Cardiovascular Surgery

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-certificate/advanced-life-support-postoperative-period-cardiovascular-surgery](http://www.techtute.com/us/medicine/postgraduate-certificate/advanced-life-support-postoperative-period-cardiovascular-surgery)

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# 01

# Introduction

Cardiac surgery is a complex process that, despite technical advances, involves a high morbimortality. In addition, after the postoperative period, complications frequently arise, ranging from rhythm disturbances to excessive bleeding and arrhythmias. In order to reduce their impact, it is necessary to have specialists characterized by their experience in critical cardiac surgical management. For example, intensivists are required who are capable of early detection and management. However, there is little specific research dedicated to this subject. In this context, TECH has developed a program that will delve into the CALS Protocol. In addition, it will be taught 100% online, to ensure greater convenience for students.





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*You will acquire a comprehensive knowledge of the complications derived from rhythm disturbances”*

Technological advances in Advanced Life Support have made it possible for healthcare professionals to obtain quick and valuable information on the condition of patients during emergency situations. Among the most commonly used tools is ultrasound, which is designed to evaluate the function of the heart and therefore identify problems such as pericardial effusion. In this regard, the most prestigious hospitals are seeking to integrate into their organization charts professionals who know how to apply these imaging tests, for the approach of treatments during Cardiopulmonary Resuscitation.

In order to delve into this subject, TECH has implemented the most advanced education in the academic market, to provide the most sophisticated machinery in this field. Under the supervision of a renowned teaching staff, the syllabus will analyze the indications and technical resources essential to perform ultrasound tests.

Likewise, it will delve into the regulations in the initial care of the patient in the immediate postoperative period of Cardiovascular Surgery. In this sense, the most effective therapeutic actions in cardiothoracic emergencies will be addressed. Emphasis will also be placed on the specific complications that may arise after surgery, among which hemorrhagic, mechanical or rhythm disturbances stand out. In this way, graduates will be highly qualified to execute specific protocols, according to the severity of the users.

Moreover, the program is based on the *Relearning* method, of which TECH is a pioneer. This system uses the reiteration of key contents in a natural way, guaranteeing that they remain in the memory of the graduates without the need to memorize. It should be noted that the only thing required to access the Virtual Campus is an electronic device with Internet access (cell phones, *tablets* or computers). In addition, students will be able to access a digital library full of additional didactic materials to enrich their educational experience.

This **Postgraduate Certificate in Advanced Life Support in the Postoperative Period after Cardiovascular Surgery** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Practice cases presented by experts in Advanced Life Support in the Postoperative Period after Cardiovascular 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 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



*You will learn in depth the reesternotomy protocol in order to successfully reach the heart during your surgical procedures”*

“

*Do you want to handle the most advanced specific monitoring systems? Achieve it through 180 hours of the best digital teaching”*

*You will attend cardiothoracic emergencies and safeguard the lives of your patients.*

*This university program will allow you to meet your professional aspirations in just 6 weeks. Enroll now!*

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

Thanks to this program, students will evaluate the current epidemiological aspects of Cardiovascular Surgery and its link with the main complications. Likewise, they will establish the elements that constitute the CALS Protocol, aimed at the prevention of obstacles after performing this type of surgical procedures. In turn, students will perform complementary tests to assess how patients respond to treatments.







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*You will acquire knowledge  
without geographical limitations  
or pre-established timing”*



## General Objectives

- ♦ Analyze the differential aspects of the patient who suffers an episode of CRA in the immediate postoperative period after cardiovascular surgery
- ♦ Evaluate the current epidemiological aspects of cardiovascular surgery (CCV) and its link with the main complications
- ♦ Define the aspects that condition CRA in the immediate postoperative period of CVS
- ♦ Examine the elements that form part of the VAS in the patient with CPR in the postoperative period after VCC
- ♦ Establish the constituent elements of the CALS protocol
- ♦ Study the available diagnostic resources





## Specific Objectives

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- Describe and detail the prognostic and risk scales used in the postoperative period of CVS
- Examine the risk of developing CRP in the setting of CVS
- Analyze the detailed elements of the CALS protocol
- Establish the principles defining VAS in the immediate postoperative period of VCC
- Study, define and analyze the complementary tests necessary for the analysis of complications in the postoperative CCV period
- Specify the specific protocol for re-sternotomy during RCP

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*Thanks to the Relearning methodology you will have a flexible and effective learning"*

03

# Course Management

In line with its philosophy of providing the highest educational excellence, TECH has a teaching staff of international prestige. These specialists have an extensive work background, being part of renowned health centers. Thanks to this, they are defined by having a deep knowledge of Advanced Life Support in the Postoperative Period after Cardiovascular Surgery, as well as being aware of the advances that have occurred in this field in recent decades. In this way, students will have the guarantees they need to update their knowledge in a profession that is constantly advancing.

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*You will have access to a first-class educational experience that will raise your professional horizons.”*

## International Guest Director

Awarded for his multiple clinical contributions in the management of Headaches and Sleep Disorders, Dr. Joshua Marc Kosowsky has become a prestigious Physician characterized by his multidisciplinary approach. In this regard, he has developed his professional work in health institutions of international reference, where the Women's Hospital Emergency Room in the United States stands out.

Among his main contributions, he has contributed to the optimal recovery of multiple patients suffering from critical conditions such as Obstructive Sleep Apnea, Migraines or Circadian Rhythm Disorders. Likewise, he has been in charge of promoting the development of clinical treatment guidelines for the effective approach to Headache, Restless Legs Syndrome and Narcolepsy.

On the other hand, he balances this work with his facet as a Clinical Researcher. In fact, he has published several books for the medical community on areas such as Cardiovascular Emergencies. In this sense, he also has a wide production of specialized articles on subjects such as the analysis of Ischemic Cardiac Symptoms, cutting-edge therapies to alleviate Neuropathic Pain and therapeutic innovations for people with Insomnia. His work has helped to significantly advance the understanding and treatment of these complex pathologies, greatly benefiting both users and specialists.

Firmly committed to clinical excellence, he has participated as a speaker in renowned Conferences, Symposia and Workshops on a global scale. In this way, he has shared his solid knowledge of the most sophisticated treatments for the management of Cranial Discomfort. In tune with this, he has also served as a keynote speaker at various Medical Seminars, where he has offered a detailed insight into the latest advances in booming fields such as Neurology. As such, he has increased public awareness regarding Neurological Diseases and reduced stigmas that lead to misperceptions.



## Dr. Joshua, Marc Kosowsky

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- Clinical Director at Brigham and Women's Hospital Emergency Room in Boston, United States
- Director of Patient Experience and Provider Engagement at Brigham and Women's Hospital Emergency Room
- Director of the Headache Center at Massachusetts General Hospital
- Director of Clinical Training at Harvard Medical School in Boston
- Clinical Consultant at Guidepoint Global in New York, United States
- Clinical Consultant at Gerson Lehrman Group in New York
- Medical Trainer at Huron Consulting Group in Illinois, United States
- Medical Trainer at Studer Group in Gulf Breeze, Florida, United States
- Residency in Emergency Medicine at the University of Cincinnati College of Medicine
- M.D. from Harvard Medical School Bachelor of Science in Medical Sciences from Harvard Medical School
- Member of:
  - American Headache Society
  - American Society of Sleep Medicine

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

## Management



### Dr. Antonio Cardenas Cruz

- ♦ Head of the Intensive Care Medicine Department, Motril Hospital
- ♦ Director of the Clinical Unit of Critical Care and Emergency Management of the Poniente University Hospital
- ♦ Institute Director of Continuing Education of the Andalusian Society of Intensive Care Medicine and Coronary Universities
- ♦ Training Program Director for Life Support Trainers of the IAVANTE Line of the Progreso y Salud Foundation of the Consejería de Salud y Consumo de la Junta de Andalucía (Andalusian Regional Government)
- ♦ Training Program Director for Sedation the IAVANTE Line of the Progreso y Salud Foundation of the Consejería de Salud y Consumo de la Junta de Andalucía (Andalusian Regional Government)
- ♦ Head of Critical Care and Emergency Department, Hospital Universitario de Poniente
- ♦ Professor of Medicine
- ♦ Degree in Medicine and Surgery from the UGR
- ♦ PhD in Medicine and Surgery, UGR
- ♦ Specialist in Intensive Care Medicine



## Professors

### Dr. Alcalde Mayayo, Inmaculada

- ◆ Specialist in Intensive Care Medicine at the Reina Sofia University Hospital
- ◆ Assistant Physician in Intensive Care Medicine at Hospital Quirónsalud Palmaplanas
- ◆ Pediaiatric Cardiac ICU & Mechanical Support Fellow in Freeman Hospital
- ◆ Cardiac ICU Clinical Fellow at Freeman Hospital
- ◆ Professional Master's Degree in Echocardiography in Emergency Medicine, Anesthesia, Resuscitation and Critical Care by Francisco de Vitoria University
- ◆ Degree in Medicine and Surgery from the University of Zaragoza

### Dr. Aranda Martínez, Consuelo

- ◆ Specialist in Intensive Care Medicine at Queen Sofia Hospital
- ◆ Adjunct in the area of Heart and Transplants in the Intensive Care Unit
- ◆ Resident Intern in Intensive Care Medicine
- ◆ Professional Master's Degree in Updating in Intensive Care Medicine, CEU Cardenal Herrera University
- ◆ Professional Master's Degree in Major Burns, CEU Cardenal Herrera University
- ◆ Degree in Medicine from the University of Cordoba

### Mr. González Velasco, Rafael

- ◆ Nurse specialized in Adult Critical Care at Reina Sofia University Hospital
- ◆ Specialist in Intensive Care Unit at the Hospital Cruz Roja Cordoba
- ◆ Specialist in Post-Anesthesia Recovery Unit
- ◆ Specialist in Cardiovascular and Coronary Surgery
- ◆ Official Master's Degree in Bioethics from the International University of Valencia
- ◆ Professional Master's Degree in Specialized Emergency Nursing Care from the University of Valencia
- ◆ Graduate in Nursing from the University of Huelva
- ◆ Postgraduate Diploma in Nursing Services Direction and Management
- ◆ Instructor in Advanced Cardiopulmonary Resuscitation



*Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"*

# 04

## Structure and Content

This academic itinerary, which has 180 hours of teaching, will allow students to distinguish the differential aspects of the patient in a situation of Cardiorespiratory Arrest in the Postoperative Period of Cardiac Surgery. The syllabus will address the epidemiological aspects that are essential when dealing with the different characteristics of these patients. Likewise, the main cardiothoracic emergencies that may cause cardiac arrest will be discussed in depth.





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*You will learn about the particularities of the CALS Protocol to prevent complications after Cardiac Surgeries”*

## Module 1. Advanced Life Support in the Postoperative Period after Cardiovascular Surgery (CCV)

- 1.1. Standardization of Initial Patient Care in the Immediate Postoperative Period of VCC
  - 1.1.1. PCR in the Context of Cardiovascular Surgery (CCV)
  - 1.1.2. Differential Factors
  - 1.1.3. Development of the Advanced Life Support (ALS) Team for the Care of CRA in the Postoperative Period of CVS
- 1.2. Standardization of Severity
  - 1.2.1. Standardization of Severity
  - 1.2.2. Prediction and Prognosis Scales
  - 1.2.3. Implementation of a Prevention Program
- 1.3. Advanced Life Support (ALS) in the patient in Cardiorespiratory Arrest in the Postoperative Period after Cardiovascular Surgery (CCV)
  - 1.3.1. Advanced Life Support in Patients with CRP in Cardiovascular Surgery (CCV) Post-Operative Care
  - 1.3.2. Factors Associated with Advanced Life Support (ALS)
  - 1.3.3. Action Protocols
- 1.4. CALS Protocol
  - 1.4.1. CALS Protocol
  - 1.4.2. Distinguishing Features
  - 1.4.3. Specific Actions
- 1.5. Cardiothoracic Emergencies
  - 1.5.1. Cardiothoracic Emergencies
  - 1.5.2. Analysis of the Main Emergencies: Prevention and Diagnosis
  - 1.5.3. Therapeutic Actions
- 1.6. Monitoring
  - 1.6.1. Basic Monitoring
  - 1.6.2. Advanced Monitoring
  - 1.6.3. Specific Monitoring Systems



- 1.7. Specific Complications
  - 1.7.1. Hemorrhagic Complications
  - 1.7.2. Mechanical Complications
  - 1.7.3. Complications Derived from Rhythm Disturbances
- 1.8. Technification
  - 1.8.1. Technification
  - 1.8.2. Organ Support Systems
  - 1.8.3. Actions to be Taken in the Event of CRP according to Organ Support Systems
- 1.9. Re-sternotomy Protocol
  - 1.9.1. Re-sternotomy Protocol
  - 1.9.2. Technical Resources
  - 1.9.3. Human Resources: Re-sternotomy Equipment
- 1.10. Ultrasound and Other Imaging Tests
  - 1.10.1. Indications
  - 1.10.2. Technical Resources
  - 1.10.3. Specific Protocols

“ You will be able to access the Virtual Campus at any time and download the contents to consult them whenever you wish”



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

This Postgraduate Certificate in Advanced Life Support in the Postoperative Period after Cardiovascular Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Certificate in Advanced Life Support in the Postoperative Period after Cardiovascular Surgery** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

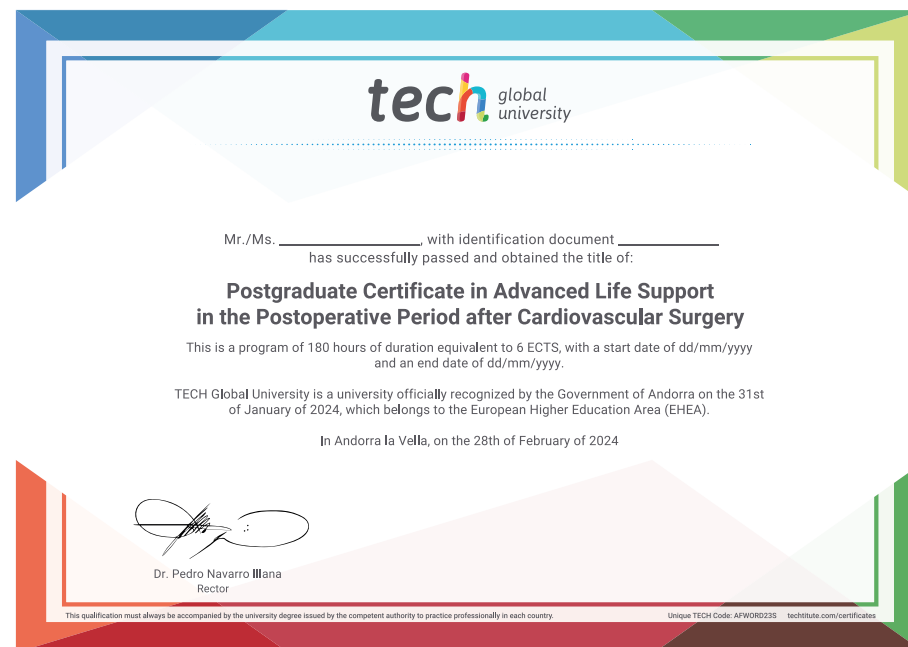
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Advanced Life Support in the Postoperative Period after Cardiovascular Surgery**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**







**Postgraduate Certificate**  
Advanced Life Support in  
the Postoperative Period  
after Cardiovascular Surgery

- » Modality: **online**
- » Duration: **6 weeks**
- » Certificate: **TECH Global University**
- » Credits: **6 ECTS**
- » Schedule: **at your own pace**
- » Exams: **online**

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## Advanced Life Support in the Postoperative Period after Cardiovascular Surgery