



# Postgraduate Diploma

**Advanced Cardiology** Life Support

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-advanced-cardiology-life-support

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# 01 Introduction

Technological advances and the regular updating of health recommendations mean that health professionals must be up to date with advanced life support maneuvers. However, these experts are faced with an abundance of scientific articles that offer a generic approach, without delving into practical situations or the use of instruments such as REBOA. For this reason, TECH has developed a pioneering Postgraduate Diploma that will specifically delve into Advanced Cardiology Life Support. In addition, the contents will be taught 100% online for greater convenience and flexibility for graduates.



## tech 06 | Introduction

The Utstein formula is a recognized way to predict patient survival during critical emergencies. This international consensus on cardiac arrest is intended to improve the quality of the data collected, both in studies and in medical reports, allowing more effective comparison of the results. However, there have been new recommendations in this field, so health professionals have been forced to adapt to them with immediacy. In this sense, keeping up with these changes is a real challenge for healthcare professionals.

For this reason, TECH has implemented a pioneering program that will delve into the advances that have arisen in this procedure for doctors to provide the best services. Designed by a first class teaching team, the syllabus will analyze in detail how to properly record hospital cardiopulmonary arrest, as well as international recommendations. In this way, graduates will also master tools for basic monitoring and carry out exhaustive controls to parevent pathologies such as arrhythmias. In addition, the syllabus will delve into resuscitation processes in special situations.

It should be noted that the program is based on the revolutionary *Relearning* methodology, a learning system pioneered by TECH, which consists of reiterating the key aspects of the syllabus so that they remain in the student's mind. Learning can be planned on an individual basis, as there are no preset schedules or evaluation chronograms. Furthermore, the Virtual Campus will be available 24 hours a day and will offer users the possibility of downloading the materials for later consultation.

This **Postgraduate Diploma in Advanced Cardiology Life Support** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- Practice cases presented by experts in Advanced Life Support and Monitoring in the Critically III Patient
- 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



Specialize in the CALS Protocol through the best digital university in the world, according to Forbes"

The program's teaching staff includes professionals from the sector who contribute their work experience to this 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.

You will control conflict prevention systems with this advanced program.

Thanks to TECH's Relearning system, you will reduce long hours of study and memorization.



# 02 Objectives

This study will enable students to develop programs in both basic and advanced life support, depending on the needs of the patients. Likewise, graduates will effectively evaluate the current epidemiological aspects of cardiovascular surgery and its link with the main complications. They will also put into practice techniques aimed at preventing cardiorespiratory arrest, guaranteeing the well-being of patients.



# tech 10 | Objectives



## **General Objectives**

- Develop the design of a program in basic life support and advanced life support
- Apply the system for the design of academic objectives
- Determine the basis for the design of life support programs depending on specific situations or patients
- Examine the most useful methodological and didactic resources for Life Support education
- Establish the impact of new educational technologies applied to the teaching of Life Support
- 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
- 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
- Establish the main causes of CPR in pregnant women
- Determine the BLS and ALS measures in pregnant women
- Assess the principles for the use of exceptional therapeutic systems: REBOA, ECMO, etc





## **Specific Objectives**

#### Module 1. Cardiopulmonary Resuscitation and Respiratory Plan

- Develop and analyze the main innovation and development programs for CPR patient care
- Analyze and develop the key elements of clinical management and management from the clinic and their application to the care of the CPR patient
- Develop a research plan focused on CPR and CPR
- Analyze the development and implementation of a hospital CPR prevention plan
- Specify the key elements that condition the development of a CPR Commission

#### Module 2. Life Support Training in the Critical Care Patient

- Establish the phases and elements that constitute a formative program
- Implement the specific modifications of a generic educational program in order to adapt it to life support education
- Examine the main teaching methods used for teaching life support: expository method and demonstrative method
- Apply the main didactic resources used for life support teaching

### Module 3. Advanced Life Support in the Critically III Patient

- Study airway control, ventilation control and circulation control
- Analyze the impact of pharmacology applied to CPR
- Study periparade arrhythmias
- Analyze potentially reversible causes
- Specify the impact of technification within the life support techniques



The program includes clinical cases to bring the graduates as close as possible to the reality of medical care"





# tech 14 | Course Management

## Management



#### Dr. Antonio Cardenas Cruz

- Head of the Intensive Care Medicine Department, Motril Hospital
- ullet 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)
- Chief of Critical Care and Emergency Department, Poniente University Hospital Professor of Medicine
- Degree in Medicine and Surgery from the UGR.
- PhD in Medicine and Surgery, UGR
- Specialist in Intensive Care Medicine

#### **Professors**

#### Dr. Curiel Balsera, Emilio

- Specialist in Intensive Care Medicine
- Section Chief of the Coronary Unit of the ICU at the Regional University Hospital of Malaga
- Ph.D. in Medicine, University of Malaga
- Graduate in Medicine and Surgery from the University of Malaga

#### Dr. Vasserot Vargas, Francisco Javier

- Medical Specialist in Intensive Care Medicine at Poniente University Hospital
- Medical emergency health care
- Professional Master's Degree in Methodology of the investigation in Health Sciences
- Degree in Medicine from the University of Granada

#### Dr. De la Hoz García, Celia

- Specialist in Intensive Care Medicine at the Virgen de las Nieves University Hospital
- Degree in Medicine and Surgery from the University of Granada
- Author of several scientific articles, published in specialized Spanish journals
- Speaker at National Congresses, where she has presented her scientific work

#### 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

#### 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
- Pediaediatric 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

## Ms. Muñoz Caballero, María Ángeles

- Nurse of Intensive Care Unit at the Poniente University Hospital
- Official Master's Degree in Gender and Health from the Rey Juan Carlos University
- Graduate in Nursing from the University of Almeria
- Member of the CPR hospital commission

# tech 16 | Course Management

### Dr. Molina Díaz, Hugo

- Medical Specialist in Intensive Care Medicine
- Medical Specialist in Intensive Care Medicine at the Regional University Hospital of Malaga
- Intensive Care Physician at the Hospital Quirón Marbella
- Specialist in Intensive Care Medicine at the Hospital Dr. Gálvez
- Intensive Care Physician at the Hospital CHIP
- Intensive Care Medicine Specialist at Hospital Quirón Málaga
- Degree in Medicine from the University of Seville
- Advanced Expert in Intensive Care by the Health Quality Agency of Andalusia

#### Dr. Fernández Zamora, María Dolores

- Specialist in Intensive Care Medicine at the Regional University Hospital of Malaga
- Specialist in Acute Cardiac Unit and Postoperative Cardiac Surgery
- Specialist in Intensive Care Medicine
- Advanced Respiratory Arrest Instructor
- Researcher in the Ariam Registry
- Degree in Medicine and Surgery from the University of Granada





## Course Management | 17 tech

#### Dr. Gómez Gallego, Guillermo

- Specialist in Intensive Care Medicine
- Expert Physician in the Area of Intensive Care Medicine at the Regional University Hospital of Malaga
- Chief of Service of Intensive Care Medicine at the Private Comprehensive Hospital Complex
- Intensive Care Physician at QuironSalud Malaga Hospital
- Specialist in Intensive Care Medicine at Hospital QuironSalud Marbella
- Intensive Care Physician at Gálvez Hospital
- External Rotation at Jackson Memorial Hospital in Miami
- Professional Master's Degree in Bioethics from the Andalusian School of Public Health
- Degree in Medicine and Surgery from the University of Granada
- Postgraduate Diploma in Non Invasive Mechanical Ventilation by the International University



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



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This university program will allow you to fulfill your professional aspirations in just 6 months. Enroll now!"



## tech 20 | Structure and Content

## Module 1. Cardiopulmonary Resuscitation and Respiratory Plan

- 1.1. Research Methodology
  - 1.1.1. Analysis of the Typology of Studies
  - 1.1.2. Design of a Research Plan
  - 1.1.3. Development of a Research Plan
- 1.2. Research Ethics
  - 1.2.1. Bioethics Applied to Research
  - 1.2.2. The Research Ethics Committee (REC): Local vs. University
  - 1.2.3. Designing a Research Protocol for Submission to the Research Ethics Committee
- 1.3. The Hospital Cardiopulmonary Resuscitation Committee
  - 1.3.1. Design of the Objectives
  - 1.3.2. Design of Contents
  - 1.3.3. Implementation of an RCPH Plan
- 1.4. The Hospital Cardiopulmonary Resuscitation Plan
  - 1.4.1. Design of the Objectives
  - 1.4.2. Design of Contents
  - 1.4.3. Operationalization of a CPRH Plan
- 1.5. Development of a Knowledge Transfer Plan in CPR Research
  - 1.5.1. Development of a Knowledge Transfer Plan within CPR Research
  - 1.5.2. Basis for the Publication of a Scientific Article
  - 1.5.3. Bibliometrics
- 1.6. Prevention of Cardiorespiratory Arrest (CPR)
  - 1.6.1. Diabetic Ketoacidosis (DKA) PreventionPrevention of PCR
  - 1.6.2. Development of a PCR Prevention Plan
  - 1.6.3. Operationalization of a PCR Prevention Plan: Results
- 1.7. Rapid Intervention Teams (RITs)
  - 1.7.1. Scientific Basis
  - 1.7.2. Design and Development of an EIR
  - 1.7.3. Implementation and Operationalization of an EIR



## Structure and Content | 21 tech

- 1.8. Hospital Risk Map
  - 1.8.1. Hospital Risk Map
  - 1.8.2. Design
  - 1.8.3. Analysis of Results and Decision Making
- 1.9. Equipment of Specific Areas
  - 1.9.1. Life Support Equipment
  - 1.9.2. Distribution of Equipment According to the Area
  - 1.9.3. Ratio of Equipment / Care Area
- 1.10. Registration of Hospital Cardiorespiratory Arrest
  - 1.10.1. Registration of Hospital Cardiorespiratory Arrest
  - 1.10.2. Models
  - 1.10.3. The Utstein Style

#### Module 2. Life Support Training in the Critical Care Patient

- 2.1. Life Support Training Programs
  - 2.1.1. Life Support Training Programs
  - 2.1.2. Programming, Definition of Objectives and Establishment of Didactic Resources
  - 2.1.3. Diagnostic and Didactic Evaluation Program
- 2.2. Advanced Life Support Training Programs
  - 2.2.1. Advanced Life Support Training Programs
  - 2.2.2. Programming, Definition of Objectives and Establishment of Didactic Resources
  - 2.2.3. Diagnostic and Didactic Evaluation Program
- 2.3. Training Programs in Special Situations and Patients
  - 2.3.1. Training Programs in Special Situations and Patients
  - 2.3.2. Programming, Definition of Objectives and Establishment of Didactic Resources
  - 2.3.3. Diagnostic and Didactic Evaluation Program
- 2.4. Logistical Resources Applied to Life Support Education
  - 2.4.1. Logistical Resources Applied to Life Support Education
  - 2.4.2. Analysis of the Different Support: Scientific, Audiovisual, Simulation and Physical
  - 2.4.3. Methodological and Objective-based Adaptation for the Selection of the Teaching Material

- 2.5. Methodology of Life Support Teaching Training
  - 2.5.1. Training Methodology
  - 2.5.2. Method and Didactic Style
  - 2.5.3. Expository Method and Demonstrative Method
- 2.6. Didactic Communication of the Life Support Plan
  - 2.6.1. Didactic Communication
  - 2.6.2. Diagram of the Didactic Communication
  - 2.6.3. Didactics of Expression and Didactics of Interpretation
- 2.7. Methodology for the Evaluation of the Life Support Plan
  - 2.7.1. Methodology for the Evaluation
  - 2.7.2. Classification of the Evaluation
  - 2.7.3. Integrated Life Support Workshops as a Tool for Didactic Evaluation
- 2.8. Conflict Management in Teaching
  - 2.8.1. Conflict Management in Teaching
  - 2.8.2. Conflict Prevention Systems
  - 2.8.3. Methodology for Conflict Management Established
- 2.9. Clinical Simulation
  - 2.9.1. Clinical Simulation
  - 2.9.2. Methodological Bases for the Use of Clinical Simulation in Life Support Training
  - 2.9.3. Didactic Evaluation within the Clinical Simulation Model
- 2.10. Academic Debriefing and Behavioral Aspects within Life Support (LS) Education
  - 2.10.1. Academic Debriefing and Behavioral Aspects
  - 2.10.2. Classification and Methodological Basis: Basis for Emotional Self-Management
  - 2.10.3. Application within Life Support Teaching

## tech 22 | Structure and Content

## Module 3. Advanced Life Support in the Critically III Patient

- 3.1. International Recommendations
  - 3.1.1. CPR
  - 3.1.2. Basic and Advanced CPR
  - 3.1.3. Basic and Advanced Life Support
- 3.2. Advanced Life Support (ALS)
  - 3.2.1. Airway
  - 3.2.2. Ventilation
  - 3.2.3. Circulation: Basic and Advanced Monitoring. Pharmacology
- 3.3. Advanced Arrhythmia Control
  - 3.3.1. Pre-stop
  - 3.3.2. CPR-inducing Rhythms
  - 3.3.3. Post-arrest Rhythmias
- 3.4. Analysis of Potentially Reversible Causes
  - 3.4.1. Analysis of Potentially Reversible Causes
  - 3.4.2. 4 H
  - 3.4.3. 4 T
- 3.5. Cardiopulmonary Resuscitation in Special Situations
  - 3.5.1. Special Patients
  - 3.5.2. Extreme Situations
  - 3.5.3. Special Environments: Welfare and Non-Welfare Environments
- 3.6. Elements Associated with Life Support
  - 3.6.1. Legal Aspects
  - 3.6.2. Humanization in Life Support
  - 3.6.3. Donation and Life Support
- 3.7. Image Support
  - 3.7.1. Scientific Evidence
  - 3.7.2. Echocardiography
  - 3.7.3. Pulmonary Ultrasound Scan





## Structure and Content | 23 tech

- Non-cognitive Aspects of Life Support
  - 3.8.1. Humanization in Life Support
  - Support to Life Support Teams
  - Support to Family Members
- 3.9. Post CPR Syndrome
  - 3.9.1. Post CPR Syndrome
  - Global Management of Post CPR Syndrome
  - Levels of Scientific Evidence Associated with Post CPR Syndrome Management
- 3.10. ERC 2021 Recommendations
  - 3.10.1. Basic Life Support (BLS) Recommendations
  - 3.10.2. Advanced Life Support (ALS) Recommendations
  - 3.10.3. Algorithms of action for patients with CRP



TECH has an extensive library at your disposal, full of multimedia resources in different audiovisual formats"





# tech 26 | Methodology

#### At TECH we use the Case Method

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

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



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.



Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

#### The effectiveness of the method is justified by four fundamental achievements:

- 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.



## Methodology | 29 tech

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.

# tech 30 | Methodology

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.









## tech 34 | Certificate

This Postgraduate Diploma in Advanced Cardiology Life Support 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 Diploma 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 Advanced Cardiology Life Support Official No of Hours: 450 h.



#### Advanced Cardiology Life Support

This is a qualification awarded by this University, equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

<sup>\*</sup>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.

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# Postgraduate Diploma Advanced Cardiology

Life Support

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

