

# Professional Master's Degree

Advanced Life Support  
and Monitoring in the  
Critically Ill Patient



## Professional Master's Degree Advanced Life Support and Monitoring in the Critically Ill Patient

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/professional-master-degree/master-advanced-life-support-monitoring-critically-patient](http://www.techtute.com/us/medicine/professional-master-degree/master-advanced-life-support-monitoring-critically-patient)

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# 01

# Introduction

The treatment of critically ill patients requires healthcare professionals who not only understand the complexities of cardiorespiratory arrest, but are also equipped with advanced competencies to deal effectively with these situations. In this sense, there has been a growing demand for highly qualified healthcare workers in critical health situations, in an environment where effectiveness in dealing with medical emergencies has become imperative. To meet this need, this university program has been designed to train graduates in the effective care of these types of patients. Likewise, the application of a 100% online format will adapt to the work dynamics of professionals, for a comprehensive update.





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*Thanks to this complete program you will master all the necessary competencies for the care of critical patients with a 100% online methodology”*

Cardiorespiratory arrest (CPR) and other urgent medical scenarios require not only an immediate response, but also the application of advanced Life Support skills. The magnitude of these situations demands that healthcare professionals be familiar with standard protocols to address these challenges with confidence and improve the overall quality of patient care. The ability to provide effective responses in these critical moments is not only essential for the health and well-being of the patient, but also plays a determining role in the evolution and advancement of the medical field.

Throughout this Professional Master's Degree in Advanced Life Support and Monitoring in the Critically Ill Patient, the graduates will delve into crucial aspects, such as decision making from an ethical perspective in Cardiopulmonary Resuscitation (CPR) or the development of fundamental concepts.

Likewise, they will analyze the principles that govern research, both basic and clinical, which is an essential pillar for specialists to understand and actively participate in the development of new strategies and advances in the field of critical patient care. Likewise, students will address the pathophysiological principles that support monitoring in the critical patient, providing a solid and applicable perspective in clinical practice.

The program will be delivered 100% online, providing flexibility to working professionals seeking to improve their skills without interrupting their work responsibilities. In addition, it is based on the *Relearning* methodology, consisting of the repetition of key concepts to fix knowledge, facilitating solid and lasting learning. This combination of online modality and innovative methodology will ensure that students acquire competencies effectively and can apply them with confidence in critical situations in the medical field.

This **Professional Master's Degree in Advanced Life Support and Monitoring in the Critically Ill Patient** 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 and Monitoring in the Critically Ill 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



*This program will prepare you for current and future challenges in Critical Care. Enroll now and experience immediate career advancement!"*

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*Interactive summaries of each topic will allow you to consolidate, in a more dynamic way, the concepts on the impact of echocardiography in this field of Critical Care”*

*Study from the comfort of your home and update your knowledge online with TECH Global University, the biggest online university in the world.*

*In just 12 months, you'll give your career the boost it needs through this exclusive TECH university program.*

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 main objective of the Professional Master's Degree in Advanced Life Support and Monitoring in the Critically Ill Patient is to develop and analyze the main innovation and development programs aimed at the care of patients in Cardiorespiratory Arrest (CRA). Throughout the program, graduates will be immersed in a comprehensive approach, ranging from theoretical fundamentals to the most advanced practical applications. They will also delve into the critical analysis of innovation programs in the healthcare field, enabling them to lead and contribute significantly to the progress of medical care in critical situations.





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*You will achieve your objectives thanks to TECH's didactic tools, among which the explanatory videos and interactive summaries stand out"*



## General Objectives

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- ◆ Develop the concept of Cardiorespiratory Arrest (CRA) and the concept of Cardiopulmonary Resuscitation (CPR)
- ◆ Analyze the impact of ultrasound studies in the global management of patients in CPR
- ◆ Determine the different existing protocols and their real value for the use of ultrasound in the CRA patient
- ◆ Analyze the pathophysiological bases that establish the foundations of monitoring in the critically ill patient
- ◆ Analyze the principles governing pediatric BLS, the principles governing pediatric ALS and the principles of neonatal CPR
- ◆ Establish the main causes of CPR in pregnant women
- ◆ 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
- ◆ Develop the design of a program in basic life support and advanced life support
- ◆ Determine the basis for the design of programs in Life Support
- ◆ Establish the impact of new educational technologies applied to the teaching of Life Support





## Specific Objectives

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### Module 1. 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 2. Advanced Life Support in the Postoperative Period after Cardiovascular Surgery (CCV)

- ♦ 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
- ♦ Specify the specific protocol for re-sternotomy during RCP

### Module 3. Advanced Life Support in the Pregnant Woman

- ♦ Analyze the elements that are part of BLS and ALS
- ♦ Examine the elements that form part of the specific measures of action
- ♦ Analyze and develop the necessary elements for the implementation of a specific care team for pregnant patients with CRP
- ♦ Analyze the technical and human resources required for the overall care of the pregnant patient in CRP

### Module 4. Advanced Pediatric and Neonatal Life Support

- ♦ Develop the concept of pediatric and neonatal CRP
- ♦ Establish the differences in the origin of CRA
- ♦ Analyze the main triggers of pediatric and neonatal CRA
- ♦ Determine the basis of life support measures

### Module 5. Advanced Life Support in the Severe Trauma Patient

- ♦ Assess the impact of biomechanical analysis on the global management of the severe trauma patient
- ♦ Analyze and define the concept of trauma code
- ♦ Assess the ABCDE D methodology
- ♦ Examine the different special traumas
- ♦ Analyze severe thermal trauma
- ♦ Establish the principles of analgosedation and its application within severe trauma care
- ♦ Determine diagnostic and monitoring systems

### **Module 6. Advanced Monitoring in the Critically Ill Patient**

- ♦ Analyze the indications, implementation and interpretation of results in relation to neuromonitoring, hemodynamic monitoring and monitoring of gas exchange and ventilatory mechanics
- ♦ Examine the indications, set-up and interpretation of results in relation to renal function and homeostasis and control of the internal milieu
- ♦ Study and analyze the indications, set-up and interpretation of results in relation to sedation monitoring and multimodal monitoring
- ♦ Analyze the use of AI in monitoring the critically ill patient and in the anticipation of adverse effects

### **Module 7. Imaging Technology in Cardiorespiratory Arrest (CRA)**

- ♦ Study the exact moment to perform ultrasound tests
- ♦ Evaluate and analyze the echocardiography protocol in CRA and the lung ultrasound protocol in CRA

### **Module 8. Hospital Cardiopulmonary Resuscitation 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 9. Advanced Life Support in the Critically Ill 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

### Module 10. Health Care Ethics in the Critical Care Patient

- ◆ Analyze facts and values
- ◆ Determine the limitation of life-sustaining treatment
- ◆ Perform analysis of CPR indications and non-CPR order
- ◆ Analyze the refusal of treatment
- ◆ Study the basis of informed consent
- ◆ Analyze the system of advance directives
- ◆ Assess the role of relatives during CPR

“Forget about memorizing! With the Relearning system you will integrate the concepts in a natural and progressive way”

# 03 Skills

Throughout this program, health professionals will master essential competencies in the care of critical situations. In this sense, graduates will be qualified in basic actions that are integrated into the management models in the care of patients in Cardiorespiratory Arrest (CRA) and Critical Patients in general. Likewise, they will comprehensively address the protocols and strategies necessary to face medical emergencies, guaranteeing the acquisition of advanced skills in Life Support and Monitoring. With a practical and theoretical approach, students will be prepared to effectively address critical situations in the field of health.





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*A unique, key and decisive experience to boost your professional development in the field of Critical Care”*



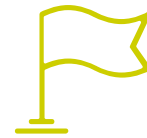
## General Skills

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- Analyze and put into practice the principles governing the prevention of CPA
- Examine the impact of monitoring in the critically ill patient on mortality and morbidity
- 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
- Analyze and define the equipment for the practice of perimortem cesarean section
- Develop the aspects that are immersed in the most important development and innovation programs in the world of CPR patient care
- Determine the basic actions that fall within the management models in the care of the CRA patient in particular and the critical patient in particular
- Determine the BLS and ALS measures in pregnant women
- Assess the principles for the use of exceptional therapeutic systems: REBOA, ECMO, etc
- Develop the principles and indications of monitoring
- Develop the concept of severe traumatic illness
- Analyze epidemiological factors and outcomes of both pre-hospital and in-hospital care







## Specific Skills

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- ◆ Assess the interruption of CPR maneuvers
- ◆ Establish the decision to limit post-CPR care management
- ◆ Analyze and develop aspects of basic CPR and advanced CPR
- ◆ Examine the main causes of CPR
- ◆ Establish and put into practice the principles of basic, clinical and translational research
- ◆ Determine the key elements that condition the development of a Hospital CPR Plan (HCCP)
- ◆ Develop the principles for the care of the pregnant patient with severe trauma
- ◆ Examine the potentially reversible causes of CPR and neonatal CPR
- ◆ Develop the epidemiological principles that are useful in severe traumatic disease
- ◆ Develop the elements necessary for the performance of a perimortem cesarean section
- ◆ Study, define and analyze the complementary tests necessary for the analysis of complications in the postoperative CCV period
- ◆ Apply the SPICES model to life support teaching

# 04

# Course Management

The faculty of this Professional Master's Degree is composed of a select group of experts, carefully selected by TECH. Each member of this distinguished faculty has an extensive and recognized professional background in the field of Life Support, providing valuable practical and theoretical knowledge. These specialists have been chosen for their academic excellence, commitment to quality teaching and relevant experience in critical situations. The amalgamation of faculty talent and experience will ensure that graduates receive state-of-the-art education.



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*You will have access to a syllabus designed by a reputable teaching staff, which will guarantee you a successful learning"*

## 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. Estella García, Ángel

- ◆ Specialist in Intensive Care Medicine
- ◆ Head of the Intensive Care Medicine Section at the University Hospital of Jerez
- ◆ President of the Health Care Ethics Committee of Jerez
- ◆ Professional Master's Degree in Bioethics, Complutense University of Madrid
- ◆ Professional Master's Degree in Infectious Diseases of the Critically Ill from the University of Valencia
- ◆ Coordinator of the Working Group on Infectious Diseases, Andalusian Society of Intensive Care Medicine and Coronary Units

### Dr. Ocete Hita, Esther

- ◆ Head of the Pediatric Hospitalization Section of the Virgen de las Nieves University Hospital of Granada
- ◆ FEA Pediatrics in the Pediatric Intensive Care Unit of the Virgen de las Nieves University Hospital of Granada
- ◆ Associate Professor in the Faculty of Medicine at the University of Granada
- ◆ Specialist Pediatrician
- ◆ Ph.D. in Medicine
- ◆ Degree in Medicine

### Dr. Robles Arista, Juan Carlos

- ◆ Head of Intensive Care Unit Section at the Reina Sofia University Hospital
- ◆ Transplant Coordinator, Reina Sofia University Hospital of Spain
- ◆ Doctorate from the Faculty of Medicine at the University of Granada
- ◆ Degree in Medicine and Surgery from the Faculty of Medicine of Granada
- ◆ Degree from the Faculty of Medicine of the University of Granada

### Dr. Noguero Iriarte, Paloma

- ◆ Specialist in Intensive Care Medicine
- ◆ Head of the Intensive Care Unit Service at the Riotinto Hospital
- ◆ Intensive Care Physician at the Valme Hospital
- ◆ Local Transplant Coordinator
- ◆ Coordinator of the Integrated Care Process Ictus
- ◆ Postgraduate Diploma in Ventilatory Techniques and Parameters in NIMV

### 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. Del Campo Molina, Emilio

- ◆ Doctor
- ◆ Head of ICU and Emergency Department at Montilla Hospital
- ◆ Assistant ICU Physician at the Cabra Hospital
- ◆ 8 National Awards in Humanization of Health Care Projects
- ◆ Winner of the Best In Class Award, in the category of "Best National Emergency"
- ◆ Graduate in Medicine from the University of Córdoba
- ◆ Member of: Hospital Commission of Cardiopulmonary Resuscitation at the Hospital of Montilla, Commission of the Southern Area in Humanization and Working Group of ACVA and Provincial SCA

**Dr. Jiménez Conde, Carlos**

- ♦ Specialist in Intensive Care Medicine
- ♦ Intensive Care Physician at the Juan Ramón Jiménez Hospital in Huelva
- ♦ Huelva Provincial Head of the CPR and CPR Working Group
- ♦ Tutor of Internal Resident Specialists at the Juan Ramón Jiménez Hospital in Huelva
- ♦ Secretary of the Cardiopulmonary Resuscitation Commission
- ♦ Professional Master's Degree in Research Methodology, University of Seville
- ♦ Professional Master's Degree in Principles And Practice Of Clinical Research by Harvard Medical School
- ♦ Professional Master's Degree in Infectious Diseases in Intensive Care by the Valencia University-Business
- ♦ Degree in Medicine from the University of Seville

**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

**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

**Dr. Parias Ángel, María Nieves**

- ♦ Specialist Physician of the Provincial Service 061 of Cordoba
- ♦ Head of the Intensive Care Unit of the Santa Barbara Hospital
- ♦ Professional Master's Degree in Research Methodology in Health Sciences, University of Cordoba
- ♦ Professional Master's Degree in Infectious Diseases in Intensive Care, University of Navarra
- ♦ Professional Master's Degree in Epidemiology and Public Health
- ♦ Degree in Medicine and Surgery from the University of Cordoba
- ♦ Responsible for the Project for the Creation of a Cardioprotected Municipality in Puertollano

**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



**Dr. Martínez de Pinillos Sánchez, María Victoria**

- ♦ Area Specialist Physician at the Virgen de las Nieves Hospital
- ♦ Resident Physician in the Specialty of Intensive Care Medicine
- ♦ Official Master's Degree in Research Methodology in Health Sciences from the University of Cordoba
- ♦ Postgraduate Diploma in Comprehensive Airway Management
- ♦ Postgraduate Diploma in Current Management of Digestive Pathology in the Critically Ill Patient

**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. 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

**Dr. López Marín, Cristina**

- ♦ Specialist in Intensive Care Medicine at the Reina Sofia University Hospital
- ♦ Specialist in Intensive Care Medicine at Hospital Virgen del Rocío
- ♦ Professional Master's Degree in Biostatistics Applied to Health Sciences, University of Seville
- ♦ Professional Master's Degree in Intensive Care by Editorial Panamericana
- ♦ Intensive Care Medicine Resident Tutor
- ♦ Clinical Tutor of students in Medicine

**Dr. Fernández Florido, Pedro**

- ♦ Specialist in Intensive Care Medicine at the Virgen de las Nieves University Hospital
- ♦ Specialist in Neurology and Severe Trauma in Intensive Care Medicine
- ♦ Specialist in Current Management of Infectious Pathology and Transplantation in Intensive Care Medicine
- ♦ Professional Master's Degree in Intensive Care Medicine by CEU Cardenal Herrera University
- ♦ Graduate in Medicine from the University of Granada

**Dr. Navarro Guillamón, Laura Carmen**

- ♦ Specialist in Intensive Care Medicine at the Poniente Hospital
- ♦ Doctor of Intensive Care Medicine at the Virgen de las Nieves University Hospital in Granada
- ♦ Official Doctoral Program in Advances in Medicine and Dermatology by the International Postgraduate School of the University of Granada
- ♦ Professional Master's Degree in Intensive Care by the Catholic University of Valencia "San Vicente Mártir"
- ♦ Degree in Medicine from the University of Malaga

**Dr. Matallana Zapata, Diego Fernando**

- ♦ Specialist in Intensive Care Medicine at the University Hospital Ciudad de Jaén
- ♦ Primary Care Physician in Outpatient, Emergency and Hospitalization
- ♦ Primary Care Physician in Emergencies and assistant in the operating room
- ♦ Professional Master's Degree in Clinical Ultrasound by the International University of Andalusia
- ♦ Professional Master's Degree in Research, Innovation and Quality of Life, University of Jaén
- ♦ Author of *Critical Ultrasound in shock, what every physician should know*

**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

**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

**Dr. Pérez Manrique, Rosa María**

- ♦ Medical Specialist in Intensive Care Medicine
- ♦ Advanced Life Support Instructor
- ♦ Resident Intern in Intensive Care Medicine at the Reina Sofia University Hospital in Cordoba
- ♦ Ph.D. in Clinical Medicine and Public Health from the University of Granada
- ♦ Degree in Medicine from the University of Córdoba
- ♦ Postgraduate Certificate in Nursing from the University of Cordoba
- ♦ Member of: European Society of Intensive Care, Spanish Society of Intensive Care Medicine and Coronary Units, Andalusian Society of Intensive Care Medicine and Coronary Units

**Dr. Rodríguez Fernández de Simón, Teresa**

- ♦ Intensive Care Medicine Physician at the Virgen de las Nieves University Hospital
- ♦ Specialist in Internal Medicine at the Virgen de las Nieves University Hospital
- ♦ Speaker at the Clinical Course on Basic and Advanced CPR
- ♦ Degree in Medicine from the Autonomous University of Barcelona
- ♦ Course on Severe Trauma Care organized by ICU - HUVN
- ♦ Course on Optimization of Antimicrobials in Critically Ill Patients
- ♦ Course CiMir2 of the Spanish Society of Intensive Care Medicine, Critical Care and Coronary Units
- ♦ Ventilung Course
- ♦ Course on Fundamentals in Limitation of Life Support Treatment and the Donation Process in Encephalic Death and Asystole

**Mr. Bracero Jiménez, Antonio**

- ♦ Nurse in the Intensive Care Unit at Reina Sofía University Hospital, Córdoba
- ♦ Specialist in Critical Patient Transport
- ♦ Coordinator and Teacher of modules in the Professional Master's Degree in Emergency Nursing and Emergencies
- ♦ Professional Master's Degree in Emergency Nursing, Catastrophes and Humanitarian Aid from the University of Seville
- ♦ University Diploma in Nursing at 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

**Dr. Rivera Rubiales, Gloria**

- ♦ Specialist in Intensive Care Medicine at the University Hospital of Jerez
- ♦ Intensive Care Physician in the Intensive Care Unit at the Virgen del Rocío University Hospital
- ♦ Professional Master's Degree in Clinical Ultrasound for Emergency and Critical Care by CEU Cardenal Herrera University
- ♦ Official Master's Degree in Biomedical Research from the University of Seville
- ♦ Official Master's Degree in Biomedical Research from the Institute of Biomedicine of Seville
- ♦ International Expert in Methodology Applied to noninvasive mechanical ventilation

**Dr. Brea Salvago, Juan Francisco**

- ♦ Area Specialist in Intensive Care Medicine at the Ciudad de Jaén Hospital
- ♦ Intra-hospital Transplant Medical Coordinator at the University Hospital of Jaen
- ♦ Professional Master's Degree in Infectious Diseases in Intensive Care at the University of Valencia
- ♦ Professional Master's Degree in Clinical Management, Medical and Care Management by CEU Cardenal Herrera University
- ♦ Professional Master's Degree in Echocardiography in Emergency Medicine, Anesthesia, Resuscitation and Critical Care by Universidad Francisco de Vitoria UFV Madrid
- ♦ Postgraduate Diploma in Health Care Communication for Health Care Professionals
- ♦ Postgraduate Diploma in Quality and Patient Safety in Health Institutions
- ♦ Postgraduate Diploma in Clinical and Cardiothoracic Ultrasound for Emergencies and Critical Care

**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. Abril Molina, Ana**

- Medical Specialist in Pediatrics and its Specific Areas
- Assistant Physician in the Pediatric Intensive Care Unit at the Virgen de las Nieves University Hospital
- Collaborator in clinical trials and research projects with the Progreso y Salud Foundation
- Ph.D. in Medicine, University of Granada
- Degree in Medicine from the University of Córdoba

**Dr. Gómez Luque, José María**

- Specialist in Pediatric Intensive Care
- Assistant Physician of the Pediatric Intensive Care Unit of the Virgen de las Nieves Hospital
- Advanced CPR and Pediatric CPR Instructor
- Ph.D. in Medicine and Surgery from the University of Granada





**Dr. Del Alba Aparicio, María**

- ◆ Specialist in Intensive Care Medicine
- ◆ Intensive Care Physician at the Hospital de Montilla
- ◆ Specialist in Intensive Care Medicine at the Reina Sofia University Hospital
- ◆ International Expert in Noninvasive Mechanical Ventilation Methodology
- ◆ Expert in Management of Severe Respiratory Infection in Intensive Care Medicine at the International University of Andalusia
- ◆ Degree in Medicine from the University of Cordoba

**Dr. Díaz Rueda, Laura**

- ◆ Physician in Emergency and Pediatric Intensive Care at the Virgen de las Nieves Maternal and Child Hospital
- ◆ Doctor in Pediatric Intensive Care Unit, Reina Sofia University Hospital
- ◆ Professional Master's Degree in diagnosis and treatment in Pediatric Cardiology and Congenital Cardiopathies - CEU Cardenal Herrera University
- ◆ Degree in Medicine from the University of Granada

“

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

# 05

# Structure and Content

This academic itinerary is a specialized and rigorous program for health professionals seeking to improve their skills in the field of Life Support. Throughout the program, graduates will acquire in-depth knowledge on the development of the concept of Cardiorespiratory Arrest (CRA) and the comprehensive approach to Cardiopulmonary Resuscitation (CPR). This syllabus, designed to enhance essential competencies in Critical Care, will offer a unique combination of theory and practice, providing graduates with the necessary tools to face emergency situations with skill and efficiency.





“

*You will delve into different factors associated with Advanced Life Support (ALS) at the best digital university in the world, according to Forbes”*

## Module 1. Life Support Training in the Critical Care Patient

- 1.1. Life Support Training Programs
  - 1.1.1. Life Support Training Programs
  - 1.1.2. Programming, Definition of Objectives and Establishment of Didactic Resources
  - 1.1.3. Diagnostic and Didactic Evaluation Program
- 1.2. Advanced Life Support Training Programs
  - 1.2.1. Advanced Life Support Training Programs
  - 1.2.2. Programming, Definition of Objectives and Establishment of Didactic Resources
  - 1.2.3. Diagnostic and Didactic Evaluation Program
- 1.3. Training Programs in Special Situations and Patients
  - 1.3.1. Training Programs in Special Situations and Patients
  - 1.3.2. Programming, Definition of Objectives and Establishment of Didactic Resources
  - 1.3.3. Diagnostic and Didactic Evaluation Program
- 1.4. Logistical Resources Applied to Life Support Education
  - 1.4.1. Logistical Resources Applied to Life Support Education
  - 1.4.2. Analysis of the Different Support: Scientific, Audiovisual, Simulation and Physical
  - 1.4.3. Methodological and Objective-based Adaptation for the Selection of the Teaching Material
- 1.5. Methodology of Life Support Teaching Training
  - 1.5.1. Training Methodology
  - 1.5.2. Method and Didactic Style
  - 1.5.3. Expository Method and Demonstrative Method
- 1.6. Didactic Communication of the Life Support Plan
  - 1.6.1. Didactic Communication
  - 1.6.2. Diagram of the Didactic Communication
  - 1.6.3. Didactics of Expression and Didactics of Interpretation
- 1.7. Methodology for the Evaluation of the Life Support Plan
  - 1.7.1. Methodology for the Evaluation
  - 1.7.2. Classification of the Evaluation
  - 1.7.3. Integrated Life Support Workshops as a Tool for Didactic Evaluation





- 1.8. Conflict Management in Teaching
  - 1.8.1. Conflict Management in Teaching
  - 1.8.2. Conflict Prevention Systems
  - 1.8.3. Methodology for Conflict Management Established
- 1.9. Clinical Simulation
  - 1.9.1. Clinical Simulation
  - 1.9.2. Methodological Bases for the Use of Clinical Simulation in Life Support Training
  - 1.9.3. Didactic Evaluation within the Clinical Simulation Model
- 1.10. Academic Debriefing and Behavioral Aspects within Life Support (LS) Education
  - 1.10.1. Academic Debriefing and Behavioral Aspects
  - 1.10.2. Classification and Methodological Basis: Basis for Emotional Self-Management
  - 1.10.3. Application within Life Support Teaching

## **Module 2. Advanced Life Support in the Postoperative Period after Cardiovascular Surgery (CCV)**

- 2.1. Standardization of Initial Patient Care in the Immediate Postoperative Period of VCC
  - 2.1.1. PCR in the Context of Cardiovascular Surgery (CCV)
  - 2.1.2. Differential Factors
  - 2.1.3. Development of the Advanced Life Support (ALS) Team for the Care of CRA in the Postoperative Period of CVS
- 2.2. Standardization of Severity
  - 2.2.1. Standardization of Severity
  - 2.2.2. Prediction and Prognosis Scales
  - 2.2.3. Implementation of a Prevention Program
- 2.3. Advanced Life Support (ALS) in the patient in Cardiorespiratory Arrest in the Postoperative Period after Cardiovascular Surgery (CCV)
  - 2.3.1. Advanced Life Support in Patients with CRP in Cardiovascular Surgery (CCV) Post-Operative Care
  - 2.3.2. Factors Associated with Advanced Life Support (ALS)
  - 2.3.3. Action Protocols
- 2.4. CALS Protocol
  - 2.4.1. CALS Protocol
  - 2.4.2. Distinguishing Features
  - 2.4.3. Specific Actions

- 2.5. Cardiothoracic Emergencies
  - 2.5.1. Cardiothoracic Emergencies
  - 2.5.2. Analysis of the Main Emergencies: Prevention and Diagnosis
  - 2.5.3. Therapeutic Actions
- 2.6. Monitoring
  - 2.6.1. Basic Monitoring
  - 2.6.2. Advanced Monitoring
  - 2.6.3. Specific Monitoring Systems
- 2.7. Specific Complications
  - 2.7.1. Hemorrhagic Complications
  - 2.7.2. Mechanical Complications
  - 2.7.3. Complications Derived from Rhythm Disturbances
- 2.8. Technification
  - 2.8.1. Technification
  - 2.8.2. Organ Support Systems
  - 2.8.3. Actions to be Taken in the Event of CRP according to Organ Support Systems
- 2.9. Re-sternotomy Protocol
  - 2.9.1. Re-sternotomy Protocol
  - 2.9.2. Technical Resources
  - 2.9.3. Human Resources: Resesternotomy Equipment
- 2.10. Ultrasound and Other Imaging Tests
  - 2.10.1. Indications
  - 2.10.2. Technical Resources
  - 2.10.3. Specific Protocols

### Module 3. Advanced Life Support in the Pregnant Woman

- 3.1. Advanced Life Support in Pregnant Women: International Standardization
  - 3.1.1. Advanced Life Support in Pregnant Wom
  - 3.1.2. Physiology
  - 3.1.3. Pathophysiology
- 3.2. Epidemiology
  - 3.2.1. Epidemiological Analysis of CRP in Pregnant Women
  - 3.2.2. Prediction Scales
  - 3.2.3. Prognosis Scales
- 3.3. Life Support (LS) in the Pregnant Woman. Identification of Cardiorespiratory Arrest (CRA)
  - 3.3.1. Identification of CRA in the Pregnant Woman
  - 3.3.2. SV Techniques
  - 3.3.3. Airway Obstruction in the Pregnant Woman
- 3.4. VAS in the Pregnant Woman. Specific Control Techniques
  - 3.4.1. Specific Techniques for Airway Control and Ventilation
  - 3.4.2. Circulation Control Techniques
  - 3.4.3. Arrhythmia Control
- 3.5. Differentiating Elements of CRP in Pregnant Women
  - 3.5.1. CRA Due to Defibrillable Rhythms
  - 3.5.2. CRA Due to Non-defibrillable Rhythms
  - 3.5.3. Identification of Reversible Causes of CRA
- 3.6. Special Actions
  - 3.6.1. Surgical Control
  - 3.6.2. Use of REBOA
  - 3.6.3. ECMO-CPR
- 3.7. Advanced Life Support Equipment (ALS). Technical and Human Resources
  - 3.7.1. ALS Equipment
  - 3.7.2. Perimortem Caesarean Section Team
  - 3.7.3. Technical Resources
- 3.8. Perimortem Cesarean Section
  - 3.8.1. Perimortem Cesarean Section
  - 3.8.2. Indications
  - 3.8.3. Technical Aspects and Timing
- 3.9. International Medical-Legal Aspects
  - 3.9.1. International Medical-Legal Aspects
  - 3.9.2. Ethical Aspects
  - 3.9.3. International Legal Framework
- 3.10. Organization of Technical and Human Resources
  - 3.10.1. Distribution of Technical Resources
  - 3.10.2. Distribution of Human Resources
  - 3.10.3. Overall Action Protocol



#### Module 4. Advanced Pediatric and Neonatal Life Support

- 4.1. Pediatric Cardiopulmonary Resuscitation (CPR)
  - 4.1.1. Pediatric Cardiopulmonary Resuscitation (CPR)
  - 4.1.2. Physiology
  - 4.1.3. Pathophysiology and Epidemiology
- 4.2. Prevention of CRP in the Pediatric and Neonatal Patient
  - 4.2.1. Analysis of Prevention Systems
  - 4.2.2. The Chain of Survival
  - 4.2.3. Standardization of Severity and Prediction Scales
- 4.3. Assessment and Care of the Child at Risk for CRA
  - 4.3.1. Airway and Ventilation
  - 4.3.2. Circulation and Neurological
  - 4.3.3. Severity Scales
- 4.4. CPR Monitoring in Pediatrics
  - 4.4.1. Identification of CPR
  - 4.4.2. Airway Replacement and Ventilation
  - 4.4.3. Circulation Replacement
- 4.5. Airway and Ventilation
  - 4.5.1. Advanced Airway
  - 4.5.2. Advanced Ventilation
  - 4.5.3. Technological Devices for Airway Control and Ventilation
- 4.6. Vascular Accesses, Drugs, and Fluids Used in Pediatric CPR
  - 4.6.1. Vascular Access and Alternatives in Pediatrics
  - 4.6.2. Applied Pharmacology
  - 4.6.3. Fluid Therapy
- 4.7. Monitoring and Treatment of Arrhythmias in Pediatrics
  - 4.7.1. Diagnosis of Arrhythmias
  - 4.7.2. Actions for the Main Arrhythmias
  - 4.7.3. Action Protocols
- 4.8. Management of Advanced CPR in Pediatrics
  - 4.8.1. Diagnosis
  - 4.8.2. Action Protocols
  - 4.8.3. Automated CPR and ECMO CPR

- 4.9. Post Resuscitation Care
  - 4.9.1. Corrosion Control
  - 4.9.2. Circulation Control
  - 4.9.3. Temperature and Internal Environment Control
- 4.10. Neonatal Stabilization and Resuscitation
  - 4.10.1. Differences in Neonatal CPR
  - 4.10.2. Airway / Ventilation and Circulation
  - 4.10.3. Specific Action Protocols

### Module 5. Advanced Life Support in the Severe Trauma Patient

- 5.1. Severe Traumatic Illness in the 21st Century
  - 5.1.1. Severe Traumatic Illness
  - 5.1.2. Pathophysiology of Severe Traumatic Illness
  - 5.1.3. Epidemiology and Outcomes
- 5.2. Biomechanics
  - 5.2.1. Biomechanics
  - 5.2.2. Analysis of the Impact of Biomechanics in Severe Trauma Care
  - 5.2.3. Biomechanical Analysis of Special Traumas
- 5.3. Therapeutic Management of Severe Traumatic Brain Injury (TBI)
  - 5.3.1. Severe TBI
  - 5.3.2. Diagnostic and Monitoring Systems
  - 5.3.3. Therapeutic Control
- 5.4. Monitoring of Spinal / Spinal Cord Trauma
  - 5.4.1. Spinal Cord TBI
  - 5.4.2. Diagnostic and Monitoring Systems
  - 5.4.3. Therapeutic Control
- 5.5. Thoracic Trauma Monitoring
  - 5.5.1. Thoracic Trauma
  - 5.5.2. Diagnostic and Monitoring Systems
  - 5.5.3. Therapeutic Control
- 5.6. Abdominal Trauma Monitoring
  - 5.6.1. Abdominal Trauma
  - 5.6.2. Diagnostic and Monitoring Systems
  - 5.6.3. Therapeutic control

- 5.7. Pelvic and Orthopedic Trauma Monitoring
  - 5.7.1. Pelvic and Orthopedic Trauma
  - 5.7.2. Diagnostic and Monitoring Systems
  - 5.7.3. Therapeutic Control
- 5.8. Monitoring and Care of Severe Trauma in Special Situations
  - 5.8.1. Severe Trauma Care in Special Situations
  - 5.8.2. Diagnostic and Monitoring Systems
  - 5.8.3. Therapeutic Control
- 5.9. Monitoring of Severe Thermal Trauma
  - 5.9.1. Severe Thermal Trauma
  - 5.9.2. Diagnostic and Monitoring Systems
  - 5.9.3. Therapeutic Control
- 5.10. Monitoring of Analgosedation
  - 5.10.1. Analgesedation
  - 5.10.2. Sedation and Analgesia. BNM ( Neuromuscular Block)
  - 5.10.3. Monitoring

### Module 6. Advanced Monitoring in the Critically Ill Patient

- 6.1. Monitoring in the Critically Ill Patient
  - 6.1.1. Epidemiology: Impact of Monitoring on the Prognosis of the Critically Ill Patient
  - 6.1.2. Physiological Basis
  - 6.1.3. Pathophysiological Bases
- 6.2. Neuromonitoring
  - 6.2.1. Indications
  - 6.2.2. Neuromonitoring Systems
  - 6.2.3. Multimodal Neuromonitoring
- 6.3. Electrical and Hemodynamic Monitoring
  - 6.3.1. Indications for Monitoring
  - 6.3.2. Electrical Monitoring Systems
  - 6.3.3. Hemodynamic Monitoring Systems
- 6.4. Electrical and Hemodynamic Monitoring. Advanced and Personalized Monitoring: Precision Monitoring
  - 6.4.1. Indications for Advanced and Personalized Monitoring
  - 6.4.2. Advanced Electrical Monitoring Systems
  - 6.4.3. Advanced Hemodynamic Monitoring Systems

- 6.5. Monitoring of Gaseous Exchange and Ventilatory Mechanics
    - 6.5.1. Indications
    - 6.5.2. Respiratory Monitoring Systems
    - 6.5.3. Ventilatory Mechanics Monitoring Systems
  - 6.6. Renal Function Monitoring
    - 6.6.1. Indications
    - 6.6.2. Renal Function Monitoring Systems
    - 6.6.3. Monitoring of Renal Function in the Patient Subjected to Continuous Extrarenal Clearance Techniques
  - 6.7. Tissue Perfusion Monitoring
    - 6.7.1. Indications
    - 6.7.2. Tissue Perfusion Monitoring Systems
    - 6.7.3. Evaluation of the Available Scientific Evidence and Its Use in Clinical Practice
  - 6.8. Sedation Monitoring
    - 6.8.1. Indications
    - 6.8.2. Sedation and Analgesia Monitoring Systems
    - 6.8.3. Computerized Systems vs. Prediction Scales
  - 6.9. Multimodal Monitoring
    - 6.9.1. Applications
    - 6.9.2. Prediction Systems
    - 6.9.3. Pathophysiological and Technological Bases
  - 6.10. Artificial Intelligence and Monitoring: Precision Monitoring and Prediction
    - 6.10.1. Applications
    - 6.10.2. Prediction Systems
    - 6.10.3. Pathophysiological and Technological Bases
- Module 7. Imaging Technology in Cardiorespiratory Arrest (CRA)**
- 7.1. Indications of Ultrasound Study in CRP
    - 7.1.1. Epidemiology
    - 7.1.2. Echocardiography
    - 7.1.3. Pulmonary Ultrasound
  - 7.2. Use of Intra CRP Ultrasound: Diagnostic Phase
    - 7.2.1. Differential Diagnosis
    - 7.2.2. Diagnosis of Potentially Reversible Causes of Cardiac Origin
    - 7.2.3. Diagnosis of Pseudo-ESPA
  - 7.3. Use of Intra CRP Ultrasound: Advanced Diagnostic Phase
    - 7.3.1. Diagnosis of Potentially Reversible Causes of Non-Cardiac Origin
    - 7.3.2. Assessment of the Normal Position of the TOT
    - 7.3.3. Assessment of Recovery of Spontaneous Circulation
  - 7.4. FEER Protocol (*Focused Echocardiographic Evaluation in Resuscitation*). Preparation Phase
    - 7.4.1. CPR and Preparation of the Equipment
    - 7.4.2. Execution and Imaging
    - 7.4.3. Resumption of CPR
  - 7.5. FEER Protocol (*Focused Echocardiographic Evaluation in Resuscitation*) 2. Evaluation Phase
    - 7.5.1. Interpretation and Communication
    - 7.5.2. Determination of Underlying Causes
    - 7.5.3. Verification of Correct Intubation
  - 7.6. FEER Protocol (*Focused Echocardiographic Evaluation in Resuscitation*) 3. Implementation Phase
    - 7.6.1. Decision-Making Algorithms
    - 7.6.2. Ultrasound in the Development of Life Support
    - 7.6.3. Advanced Diagnostic and Therapeutic Processes
  - 7.7. FEER Protocol (*Focused Echocardiographic Evaluation in Resuscitation*) 4. Resuscitation Phase or Prognostic Phase
    - 7.7.1. Post CPR Care
    - 7.7.2. Resuscitation
    - 7.7.3. Prognostic Study
  - 7.8. Other Protocols
    - 7.8.1. FEEL
    - 7.8.2. CAUSE
    - 7.8.3. E-FAST
    - 7.8.4. RUSH
    - 7.8.5. BLUE
  - 7.9. Education and Training
    - 7.9.1. Training Criteria
    - 7.9.2. Protocols
    - 7.9.3. Simulation
  - 7.10. Use of Transesophageal Echocardiography in CPR
    - 7.10.1. Differential Elements with Transthoracic Echocardiography
    - 7.10.2. Indications
    - 7.10.3. Technique

## Module 8. Hospital Cardiopulmonary Resuscitation Plan

- 8.1. Research Methodology
  - 8.1.1. Analysis of the Typology of Studies
  - 8.1.2. Design of a Research Plan
  - 8.1.3. Development of a Research Plan
- 8.2. Research Ethics
  - 8.2.1. Bioethics Applied to Research
  - 8.2.2. The Research Ethics Committee (REC): Local vs. University
  - 8.2.3. Designing a Research Protocol for Submission to the Research Ethics Committee
- 8.3. The Hospital Cardiopulmonary Resuscitation Committee
  - 8.3.1. Design of the Objectives
  - 8.3.2. Design of Contents
  - 8.3.3. Implementation of an RCPH Plan
- 8.4. The Hospital Cardiopulmonary Resuscitation Plan
  - 8.4.1. Design of the Objectives
  - 8.4.2. Design of Contents
  - 8.4.3. Operationalization of a CPRH Plan
- 8.5. Development of a Knowledge Transfer Plan in CPR Research
  - 8.5.1. Development of a Knowledge Transfer Plan within CPR Research
  - 8.5.2. Basis for the Publication of a Scientific Article
  - 8.5.3. Bibliometrics
- 8.6. Prevention of Cardiorespiratory Arrest (CPR)
  - 8.6.1. Diabetic Ketoacidosis (DKA) PreventionPrevention of PCR
  - 8.6.2. Development of a PCR Prevention Plan
  - 8.6.3. Operationalization of a PCR Prevention Plan: Results
- 8.7. Rapid Intervention Teams (RITs)
  - 8.7.1. Scientific Basis
  - 8.7.2. Design and Development of an EIR
  - 8.7.3. Implementation and Operationalization of an EIR
- 8.8. Hospital Risk Map
  - 8.8.1. Hospital Risk Map
  - 8.8.2. Design
  - 8.8.3. Analysis of Results and Decision Making

- 8.9. Equipment of Specific Areas
  - 8.9.1. Life Support Equipment
  - 8.9.2. Distribution of Equipment According to the Area
  - 8.9.3. Ratio of Equipment / Care Area
- 8.10. Registration of Hospital Cardiorespiratory Arrest
  - 8.10.1. Registration of Hospital Cardiorespiratory Arrest
  - 8.10.2. Models
  - 8.10.3. The Utstein Style

## Module 9. Advanced Life Support in the Critically Ill Patient

- 9.1. International Recommendations
  - 9.1.1. CPR
  - 9.1.2. Basic and Advanced CPR
  - 9.1.3. Basic and Advanced Life Support
- 9.2. Advanced Life Support (ALS)
  - 9.2.1. Airway
  - 9.2.2. Ventilation
  - 9.2.3. Circulation: Basic and Advanced Monitoring. Pharmacology
- 9.3. Advanced Arrhythmia Control
  - 9.3.1. Pre-stop
  - 9.3.2. CPR-inducing Rhythms
  - 9.3.3. Post-arrest Rhythmias
- 9.4. Analysis of Potentially Reversible Causes
  - 9.4.1. Analysis of Potentially Reversible Causes
  - 9.4.2. 4 H
  - 9.4.3. 4 T
- 9.5. Cardiopulmonary Resuscitation in Special Situations
  - 9.5.1. Special Patients
  - 9.5.2. Extreme Situations
  - 9.5.3. Special Environments: Welfare and Non-Welfare Environments
- 9.6. Elements Associated with Life Support
  - 9.6.1. Legal Aspects
  - 9.6.2. Humanization in Life Support
  - 9.6.3. Donation and Life Support

- 9.7. Image Support
  - 9.7.1. Scientific Evidence
  - 9.7.2. Echocardiography
  - 9.7.3. Pulmonary Ultrasound Scan
- 9.8. Non-cognitive Aspects of Life Support
  - 9.8.1. Humanization in Life Support
  - 9.8.2. Support to Life Support Teams
  - 9.8.3. Support to Family Members
- 9.9. Post CPR Syndrome
  - 9.9.1. Post CPR Syndrome
  - 9.9.2. Global Management of Post CPR Syndrome
  - 9.9.3. Levels of Scientific Evidence Associated with Post CPR Syndrome Management
- 9.10. ERC 2021 Recommendations
  - 9.10.1. Basic Life Support (BLS) Recommendations
  - 9.10.2. Advanced Life Support (ALS) Recommendations
  - 9.10.3. Algorithms of action for patients with CRP

## Module 10. Health Care Ethics in the Critical Care Patient

- 10.1. Health Care Ethics in the Critical Care Patient
  - 10.1.1. Health Care Ethics
  - 10.1.2. Research Ethics
  - 10.1.3. Ethics Committees
- 10.2. Bioethics Clinical Use
  - 10.2.1. Ethics and Morality
  - 10.2.2. Bioethical Principles
  - 10.2.3. Clinical Use
- 10.3. Dental care for AIDS patient
  - 10.3.1. HIV Infection. AIDS Triggering
  - 10.3.2. Lesiones principales asociadas al SIDA
  - 10.3.3. Dental management of the patient with AIDS
  - 10.3.4. Clinical Cases

- 10.4. Facts and Values
  - 10.4.1. Good Clinical Practice
  - 10.4.2. Incorporation of Values into Clinical Practice
  - 10.4.3. Study of the Quality of the Ethics of Actions
- 10.5. Limitation of Life-Sustaining Treatment
  - 10.5.1. Basis for Establishing the Limitation of Life-Sustaining Treatment
  - 10.5.2. Classification
  - 10.5.3. Practical Development
- 10.6. Indications for CPR and Do-Not-Resuscitate Order
  - 10.6.1. Scientific Basis, Ethical Basis and Legal Basis
  - 10.6.2. Operationalization
  - 10.6.3. Involvement of Health Care Ethics Committees in Decision Making
- 10.7. Interruption of CPR Maneuvers
  - 10.7.1. Indications
  - 10.7.2. Scientific Basis
  - 10.7.3. Ethical Aspects
- 10.8. Treatment Limitation in Post-CPR Care
  - 10.8.1. Conceptual Basis
  - 10.8.2. Scientific Basis
  - 10.8.3. Ethical Basis
- 10.9. Refusal of Treatment
  - 10.9.1. Legal Basis
  - 10.9.2. Ethical Basis
  - 10.9.3. Incorporation into Daily Clinical Practice
- 10.10. Informed Consent and Living Will
  - 10.10.1. Informed Consent and Living Will
  - 10.10.2. Legal Basis
  - 10.10.3. Ethical Framework

06

# 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.





“

*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.

“

*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.



# 07 Certificate

The Professional Master's Degree in Advanced Life Support and Monitoring in the Critically Ill Patient guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree 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 **Professional Master's Degree diploma in Advanced Life Support and Monitoring in the Critically Ill Patient** 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.

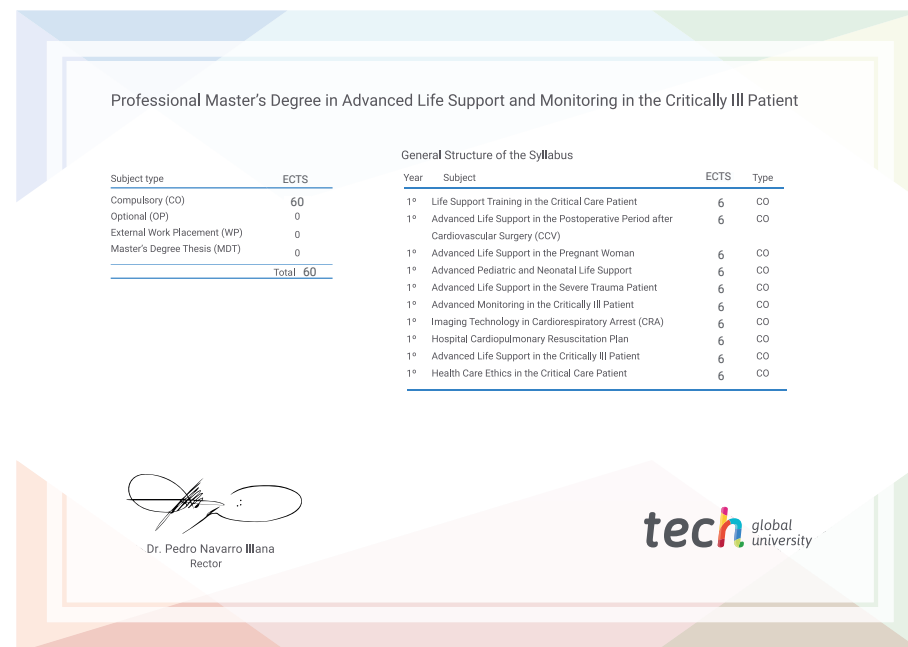
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Advanced Life Support and Monitoring in the Critically Ill Patient**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.



## Professional Master's Degree

Advanced Life Support and Monitoring in the Critically Ill Patient

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Credits: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

# Professional Master's Degree

Advanced Life Support  
and Monitoring in the  
Critically Ill Patient