Postgraduate Diploma Technological Advances in Advanced Life Support for Nursing



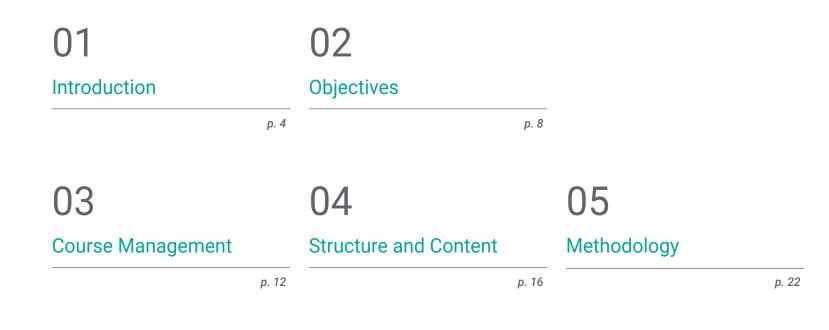


## **Postgraduate Diploma** Technological Advances in Advanced Life Support for Nursing

- » Modality: Online
- » Duration: 6 months.
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/enfermeria/experto-universitario/experto-avances-tecnologicos-soporte-vital-avanzado-enfermeria

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06 Certificate

# 01 Introduction

The advance of technology is completely revolutionizing the field of Advanced Life Support. One example of this is Telecare, which allows nursing professionals to provide remote assistance during emergency situations. In this way, professionals provide real-time guidance and supervision to medical emergency response teams. In addition, nurses can make informed decisions more quickly, as well as follow the most appropriate instructions for procedures such as Cardiopulmonary Resuscitation, Defibrillation or Medication Administration. In this context, TECH is developing a 100% online university program that will keep graduates up to date with technological trends in this healthcare field.



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With this Postgraduate Diploma based on Relearning, you will stay at the technological forefront in Advanced Life Support and optimize the care of your patients".

## tech 06 | Introduction

A report published by the World Health Organization highlights the importance of Advanced Life Support in providing medical assistance to victims of traffic accidents. In this sense, nurses play an important role in providing immediate attention to critical injuries, contributing to the stabilization of patients during their transfer to hospitals. Aware of this, more and more healthcare institutions are calling for the incorporation of experts in the most innovative technologies in this field of specialization. To take advantage of this opportunity, nurses need to update their knowledge and incorporate the most cutting-edge tools into their practice to ensure rapid intervention that benefits patients.

To respond to this need, TECH implements a Postgraduate Diploma in Technological Advances in Advanced Life Support for Nursing. Through 3 complete and updated modules, professionals will enrich their praxis by establishing the latest protocols for action in cases of Hypoxemia, Ionic Alteration and even Thrombotic Episodes. The syllabus will also include the management of postoperative vascular patients, including emergency resternotomy. Likewise, the didactic materials will provide graduates with the keys to properly use innovative technologies such as biomarkers, electroencephalograms and imaging tests.

On the other hand, the methodology of this program reinforces its innovative character. TECH offers a 100% online educational environment, which allows students to combine their studies with the rest of their regular commitments. It also employs the *Relearning* methodology, based on the repetition of key concepts to fix knowledge and facilitate learning. The only requirement is that professionals have a device with Internet access, including their own cell phone. In this way, they will be able to enter the Virtual Campus to enjoy an educational experience that will take their work horizons to a higher level. This **Postgraduate Diploma in Technological Advances in Advanced Life Support for Nursing** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- The development of case studies presented by experts in Advanced Life Support and Critical Patient Monitoring for Nursing.
- 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



You will study from the comfort of your home and elevate your knowledge online with TECH, the world's largest digital university."

### Introduction | 07 tech



You will control Telecare to provide remote medical care during emergency situations, especially in cases of cardiac arrest."

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.

Are you looking to specialize in Advanced Life Support Management in Neonates? Get it in only 400 hours thanks to this Postgraduate Diploma.

Updating your knowledge about Foreign Body Airway Obstruction will be much easier thanks to the multimedia material provided by TECH.

# 02 **Objectives**

Through this university program, graduates will keep abreast of the technological advances that have emerged in the area of Advanced Life Support. In this way, nurses will develop advanced practical skills to handle innovative equipment in emergency medical situations. Students will master instruments for surgical management, including intra-aortic endovascular balloon resuscitation and extracorporeal circulation devices. All this will enable professionals to perform rapid assessments to facilitate decision making in critical situations, which will contribute to preserving the health of patients.

This program will make you a more complete professional, prepared to face the current challenges of Advanced Life Support in Nursing."

## tech 10 | Objectives



## **General Objectives**

- Establish the key lines of the update in Advanced Life Support for Nursing.
- Analyze the most complex critical situations and their forms of action.
- Specify the differences between advanced life support in adult patients and pediatric patients.
- Evaluate the different courses that exist in Advanced Life Support.
- Develop common diagnoses that require assistance with Advanced Life Support for Nursing
- Analyze special circumstances requiring Advanced Life Support for Nursing care
- Propose ways to identify the root causes of the need for advanced life support
- Generate confidence in nursing professionals when acting in emergency circumstances.
- Generate curiosity for the use and incorporation of technological advances in Advanced Life Support for Nursing.
- Compile the most used technological advances
- Justify the need to continue exploring new technological advances.
- Examine the advantages of technological advances in Advanced Life Support.





### **Specific Objectives**

#### Module 1. Update in Advanced Life Support for Nursing

- Establish the most recent protocols for hypoxemia, hypovolemia, cases of ionic alteration and thrombotic episodes.
- Identify the differences in the protocols for Nursing for pregnant women
- Examine the differences in the protocols for nursing care of polytraumatized patients.
- Develop protocols for action in particularly different situations such as patients undergoing cardiac surgery or traumatic accidents.

## Module 2. Advanced Life Support in the Adult Patient and Pregnant Woman for Nursing

- Establish the most recent protocols for hypoxemia, hypovolemia, cases of ionic alteration and thrombotic episodes.
- Identify the differences in the protocols for Nursing for pregnant women
- Examine the differences in the protocols for nursing care of polytraumatized patients.
- Develop protocols for action in particularly different situations such as patients undergoing cardiac surgery or traumatic accidents.

#### Module 3. Technological Advances in the Management of Advanced Life

#### Support for Nursing

- Develop different diagnostic imaging protocols for Nursing
- Determine the echogenic techniques for Nursing
- Evaluate the use of mechanical equipment during the performance of Advanced Life Support
- Examine the importance of the development of telecare in Advanced Life Support



A unique, key, and decisive educational experience to boost your professional development"

## 03 Course Management

In order to preserve intact the quality that characterizes all its university qualifications, TECH develops a thorough selection process to select its teaching team. For this Postgraduate Diploma, TECH brings together leading experts in the field of Advanced Life Support and Monitoring in the Critical Patient. These nursing professionals have extensive work experience, which has allowed them to perform their work in prestigious hospitals. In addition, in their commitment to provide the best services, they remain at the forefront of technology to incorporate the latest trends in this field of specialization into their daily practice.



The teaching team of this university program is made up of nurses specialized in Advanced Life Support, who will provide you with the knowledge with the greatest professional applicability in this area".

## tech 14 | Course Management

#### Management



#### Dr. Ramírez Torres, Carmen Amaia

- Nurse of the Intensive Care Unit at the San Pedro University Hospital
- Nurse of the Intensive Care Unit at Viamed Los Manzanos Hospital.
- Radiodiagnostic Nurse at Alliance Medical
- Nurse at the Residence for Elderly People of La Rioja
- Operating Room Nurse in Gynecology and Obstetrics at La Paz University Hospital
- PhD in Nursing Sciences from the University Jaume I of Castellón.
- Professional Master's Degree in Management and Direction of Nursing Units, University of La Rioja.
- Professional Master's Degree in in Surgical Nursing, Medical Practice Group.
- Graduate in Nursing from the Autonomous University of Madrid.

### Professors

#### Ms. Giménez Luzuriaga, Marta

- Emergency Nurse at SES 061 La Rioja
- Nurse Assistant in Helicopter Emergency Medical Service (HEMS)
- Hospital Nurse in Aragonese Health Service (Servicio Aragonés de Salud)
- CPR-DESA Instructor
- Postgraduate Diploma in Traffic Accidents: Emergencies, Resuscitation and Medical Transport by the University of Zaragoza.
- Postgraduate Diploma in Emergency Health Care by the Public University of Navarra.
- Postgraduate Certificate in Nursing from the University of Zaragoza.

#### Ms. Oserín Pérez, María Teresa

- Nurse of the 061 Service for Health Emergencies of the Community of La Rioja
- Nurse at the Polyclinic of La Rioja Nuestra Señora de Valvanera
- Nurse at La Rioja Hospital
- University Diploma in Nursing from the University of La Rioja
- Member of: Professional College of Nursing Spanish Society of Emergencies and Emergencies (SEMES)



### Course Management | 15 tech

#### Ms. Martín Parra, Marta

- Nurse in ICU and Resuscitation Unit of the Viamed Santa Elena Hospital
- Nurse in the Digestive Endoscopy Unit of the 12 de Octubre University Hospital
- Intensive Care Nurse at the Cruces University Hospital Cardiovascular and Thoracic Surgery Operating Room Nurse, Cruces University Hospital
- Intensive Care Nurse at the University Hospital Alcorcón Foundation
- Primary Care Nurse in different Primary Care centers in the Community of Madrid
- Intensive Care Nurse at Quirónsalud Madrid University Hospital
- Nurse in the Intermediate Coronary Care Unit of La Princesa University Hospital.
- Nurse in the Post-Surgical Intensive Care Unit of La Paz University Hospital
- Intensive Care Nurse at the Ramón y Cajal University Hospital
- Nurse in the Hospitalization Unit of the CEMTRO Clinic.

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- Master's Degree in Critical Care at the Rey Juan Carlos University
- Certified in Basic Life Support in Extracorporeal Membrane Oxygenation (ECMO)
- Degree in Nursing from the Autonomous University of Madrid

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 Postgraduate Diploma will equip nurses with the main technological advances in Advanced Life Support. The academic itinerary will delve into aspects ranging from the initial assessment of emergencies to the administration of drugs and monitoring techniques. In addition, the materials will focus on assistance to both adult patients and pregnant women. In this way, the syllabus will address the most common circumstances and their different protocols of action. In this sense, the program will provide graduates with the most advanced technological tools to ensure a more accurate monitoring of the patient's vital functions.

Increase your safety in decision making by updating your knowledge in Advanced Life Support through this revolutionary Postgraduate Diploma".

## tech 18 | Structure and Content

#### Module 1. Update in Advanced Life Support for Nursing

- 1.1. Advanced Life Support Infrastructure for Nursing
  - 1.1.1. Human Resources in Out-of-Hospital
  - 1.1.2. Out-of-Hospital Material Resources
  - 1.1.3. In-Hospital Human Resources
  - 1.1.4. In-Hospital Material Resources
- 1.2. Initial Assessment of the Nursing Context
  - 1.2.1. Scene Assessment
  - 1.2.2. Safety Assessment
  - 1.2.3. Situation Assessment
- 1.3. Difficult Airway Management for Nursing
  - 1.3.1. Initial Evaluation and Indications
  - 1.3.2. Equipment and Management
  - 1.3.3. Monitoring and Follow-Up
- 1.4. Management of Difficult Venous Access for Nursing
  - 1.4.1. Initial Evaluation and Indications
  - 1.4.2. Equipment and Management
  - 1.4.3. Monitoring and Follow-Up
- 1.5. Administration of Drugs and Fluids in Advanced Life Support for Nursing
  - 1.5.1. Pharmacodynamics
  - 1.5.2. Pharmacokinetics
  - 1.5.3. Management of Patient Administration and Safety
- 1.6. Management of Advanced Life Support in the Adult Patient for Nursing
  - 1.6.1. Indications and Epidemiology
  - 1.6.2. Management of Tachycardias
  - 1.6.3. Management of Bradycardias
- 1.7. Management of Advanced Life Support in Pediatric Patients for Nursing
- 1.7.1. Indications and Epidemiology
- 1.7.2. Management of Advanced Life Support in Neonates
- 1.7.3. Management of Advanced Life Support in Pediatric Patients



### Structure and Content | 19 tech

- 1.8. Out-of-Hospital Specimen Analyzers for Nursing
  - 1.8.1. Types of Out-of-Hospital Analyzers
  - 1.8.2. Indications
  - 1.8.3. Nursing Management
- 1.9. Advanced Life Support Nursing Training
  - 1.9.1. American Heart Association (AHA)
  - 1.9.2. European Resuscitation Council (ERC)
  - 1.9.3. Differences and similarities
- 1.10. Community Education in Advanced Life Support by Nursing
  - 1.10.1. Applications and Smartphones
  - 1.10.2. Special Days of Cardiac Arrest
  - 1.10.3. First Aid in the Community

## **Module 2.** Advanced Life Support in the Adult Patient and Pregnant Woman for Nursing

- 2.1. Hypoxemia Management for Nursing
  - 2.1.1. Asthma and COPD
  - 2.1.2. Obstruction of the Airway by a Foreign Body (OVACE)
  - 2.1.3. Tension Pneumothorax
- 2.2. Hypovolemia Management for Nursing
  - 2.2.1. Traumatic Cardiac Arrest
  - 2.2.2. Cardiac Arrest Due to Anaphylaxis
  - 2.2.3. Cardiac Arrest Due to Sepsis
- 2.3. Nursing Management of Ion Disturbance
  - 2.3.1. Cardiac Arrest Due to Hyperkalemia
  - 2.3.2. Cardiac Arrest Due to Hypokalemia
  - 2.3.3. Cardiac Arrest Due to Hypoglycemia
- 2.4. Temperature Management for Nursing
  - 2.4.1. Temperature Management
  - 2.4.2. Cardiac Arrest Due to Hypothermia
  - 2.4.3. Cardiac Arrest Due to Hyperthermia

- 2.5. Nursing Management of Thrombotic Episodes
  - 2.5.1. Cardiac Arrest Due to Pulmonary Thromboembolism
  - 2.5.2. Cardiac Arrest Due to Coronary Thrombosis
  - 2.5.3. Cardiac Arrest Due to Cardiac Tamponade
- 2.6. Management of Postoperative Cardiac Surgical Unit-Advanced Life Support (CALS) Patients for Nursing
- 2.6.1. Indications
  - 2.6.2. Recommendations and Differences
  - 2.6.3. Emergency Resternotomy
- 2.7. Nursing Management of the Pregnant Woman
  - 2.7.1. Epidemiological and Pathophysiological Analysis
  - 2.7.2. Special Considerations in CPR
  - 2.7.3. Ethical and Legal Aspects
- 2.8. Nursing Management of the Polytraumatized Patient
  - 2.8.1. Evolution
  - 2.8.2. Initial Assessment: ABCDE and CPR
  - 2.8.3. Secondary Assessment: Cranioencephalic, Thoracic, Abdominal, Pelvis, Vertebral, Limb Fracture Trauma
- 2.9. Accident Management for Nursing
  - 2.9.1. Dysbaric Accident
  - 2.9.2. Drowning.
  - 2.9.3. Crush Syndrome.
  - 2.9.4. Impaled
- 2.10. Management in Different Locations for Nursing
  - 2.10.1. Medical Transport
  - 2.10.2. Sports
  - 2.10.3. Multi-Victim Incidents

## tech 20 | Structure and Content

## **Module 3.** Technological Advances in the Management of Advanced Life Support for Nursing

- 3.1. Use of Echocardiography for Vascular Access Cannulation for Nursing
  - 3.1.1. The use of ultrasound
  - 3.1.2. Indications
  - 3.1.3. Nursing Technique
- 3.2. Use of the Echocardiogram in Advanced Life Support for Nursing
  - 3.2.1. Indications
  - 3.2.2. Diagnostic Phase for Nursing
  - 3.2.3. Advanced Diagnostic Phase for Nursing
- 3.3. Technologies in Advanced Life Support for Nursing
  - 3.3.1. Surgical Control
  - 3.3.2. Use of Endovascular Balloon Intra-aortic Resuscitation (REBOA)
  - 3.3.3. Use of Extracorporeal Circulation Devices (ECMO) in AVR
- 3.4. Prediction of Neurological Outcome after CPR for Nursing
  - 3.4.1. Imaging Tests
  - 3.4.2. Use of Biomarkers
  - 3.4.3. Electroencephalogram: Evoked Potentials
- 3.5. FEER Protocol for Nursing
  - 3.5.1. Diagnostic Phase
  - 3.5.2. Resuscitation Phase
  - 3.5.3. Resuscitation or Prognosis Phase
- 3.6. Use of Transesophageal Echocardiography for Nursing
  - 3.6.1. Indications
  - 3.6.2. Technique
  - 3.6.3. Basic Interpretation for Nursing





## Structure and Content | 21 tech

- 3.7. Echocardiography Protocols in Advanced Life Support for Nursing
  - 3.7.1. Rapid Ultrasound in Shock (RUSH)
  - 3.7.2. Focused Echocardiographic Evaluation in Life support (FEEL)
  - 3.7.3. Cardiac Arrest Ultrasound exam (CAUSE)
  - 3.7.4. Extended Focused Assesment with Sonography in Trauma (E-FAST)
  - 3.7.5. Basic Lung Ultrasound Examination (BLUE)
- 3.8. Mechanical Aids During Advanced Life Support for Nursing
  - 3.8.1. Use and Evolution
  - 3.8.2. Indications and Types
  - 3.8.3. Results Obtained
- 3.9. Teleassistance for Advanced Life Support for Nursing
  - 3.9.1. The Role of Nursing
  - 3.9.2. Use and Indications
  - 3.9.3. Results for Advanced Life Support
- 3.10. Other Technological Advances for Nursing
  - 3.10.1. Real-Time Feedback Devices
  - 3.10.2. Use of Unmanned Aerial Vehicles
  - 3.10.3. Video Recordings



If you have set yourself the goal of renewing your knowledge, TECH gives you the opportunity to achieve it while also making it compatible with your work responsibilities. Enroll now!"

# 05 **Methodology**

This 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"

## tech 24 | Methodology

### At TECH Nursing School we use the Case Method

In a given situation, what should a professional do? 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. Nurses learn better, faster, and more sustainably over time.

With TECH, nurses can experience a learning methodology 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, in an attempt to recreate the real conditions in professional nursing 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. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
- 2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
- 3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
- 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.



## tech 26 | Methodology

### **Relearning Methodology**

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

The nurse will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



## Methodology | 27 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 we have prepared more than 175,000 nurses with unprecedented success in all specialties regardless of practical workload. Our educational 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 28 | 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 really specific and precise.

20%

15%

3%

15%

These contents are then adapted in 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.



#### **Nursing Techniques and Procedures on Video**

We introduce you to the latest techniques, to the latest educational advances, 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 them as many times as you want.



#### **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.

## Methodology | 29 tech



#### **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.

20%

3%

7%

17%



#### **Testing & Retesting**

The student's knowledge is periodically assessed and re-assessed throughout the program, through evaluative and self-evaluative activities and exercises: in this way, students can check how they are doing in terms of achieving their goals.



#### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

# 06 **Certificate**

The Postgraduate Diploma in Technological Advances in Advanced Life Support for Nursing guarantees, in addition to the most rigorous and up to date education, access to a Postgraduate Diploma issued by TECH Global University.



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

## tech 32 | Certificate

This program will allow you to obtain a Postgraduate Diploma in Technological Advances in Advanced Life Support for Nursing endorsed by TECH Global University, the largest digital university in the world.

**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 educational framework and harmonize. the higher education systems of the member countries of this space. The project promotes common values, the implementation of joint 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 continuous education and professional updating that guarantees the acquisition of competencies in its area of knowledge, conferring a high curricular value to the student who completes the program.

<u>Title: Postgraduate Diploma in Technological Advances in Advanced Life Support for</u> Nursing

<u>ECTS: 18</u>

Official Nº of Hours: 450 hours.



tecn global university Postgraduate Diploma Technological Advances in Advanced Life Support for Nursing » Modality: online » Duration: 6 months

- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
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## Postgraduate Diploma Technological Advances in Advanced Life Support for Nursing

