





# Hybrid Professional Master's Degree

Advanced Emergency and Critical Care Nursing

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.

Website: www.techtitute.com/pk/nursing/hybrid-professional-master-degree/hybrid-professional-master-degree-advanced-emergency-critical-care-nursing

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# tech 06 | Introduction

Simplifying the use of medications when undertaking cardiopulmonary resuscitation is one of the tasks that today's Emergency, Emergency and Disaster Nursing professionals must master. However, not all personnel dedicated to this area of health care have the best possible training. Also, they have difficulties in acquiring advanced knowledge on the use of ultrasound-guided instruments to cannulate veins and other minor interventions. Difficulties at this academic level are related to shortcomings in the educational programs that fail to integrate practical and theoretical learning properly.

TECH, aware of this reality, overcomes other competitors in the educational market by developing this Hybrid Professional Master's Degree in Advanced Emergency and Catastrophe Nursing. It is distinguished from other degrees by its academic modality, divided into two phases. The first one will facilitate the assimilation of innovative from a 100% online and interactive learning platform. The neurologist will complete this educational phase in 1,500 hours and will be advised by a prestigious and demanding faculty.

In the second teaching stage, graduates will spend 3 weeks in a on-site clinical internship. From a first level institution, they will apply the skills and subjects received in the previous stage. These tasks will be carried out in the approach of real cases and, at all times, he will be supervised in order to expand his progress and involve him in different practical dynamics. At the same time, thanks to the wide network of agreements and collaborators at TECH's disposal, the student will be able to carry out this intensive and face-to-face stay in hospitals located in the geographical location of his or her choice. They will also work together with prestigious experts and will be supported by an assistant tutor to overcome any doubts that may arise in their daily Practice practice.

This **Hybrid Professional Master's Degree in Advanced Emergency and Critical Care Nursing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Development of more than 100 clinical cases presented by nursing professionals
- 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
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Practical clinical guides on approaching different pathologies
- With a special emphasis on evidence-based medicine and research methodologies in Intensive Care Nursing
- All of this will be complemented by 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
- Furthermore, you will be able to carry out a clinical internship in one of the best hospital centers





Complete a 3-week intensive stay in a prestigious center and acquire the skills most in demand for the care of patients who are victims of major catastrophes"

In this Hybrid Professional Master's Degree, with a vocational nature and blended learning modality, the program is aimed at updating nursing professionals who require a high level of qualification. The content is based on the latest scientific evidence and is organized in a didactic way to integrate theoretical knowledge into nursing practice. The theoretical-practical elements allow professionals to update their knowledge and help them to make the right decisions in patient care.

Thanks to the multimedia content, developed with the latest educational technology, nursing professionals will benefit from situated and contextual learning, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will master, through this Hybrid Degree, the criteria to be taken into account to simplify the number or type of drugs used in cardiopulmonary resuscitation as a nurse.

This immersive, comprehensive and intensive program covers the most up-to-date trends in hospital emergency medicine so that you can become a full-spectrum nurse.







# tech 10 | Why Study this Hybrid Professional Master's Degree?

# 1. Updating from the Latest Technology Available

This Hybrid Professional Master's Degree delves into the latest applications and procedures currently used by nurses in Emergency and Catastrophic Emergencies. Through the program, the professional will be updated on the most modern interventional techniques that promote the quality of life of these patients through the latest technology.

## 2. Gaining In-depth Knowledge from the Experience of Top Specialists

Throughout this program, the Nurse will be accompanied continuously taking hold by distinguished experts. An example of this is the theoretical stage of the degree where it will be supported by a meticulously chosen teaching staff. During your internship, you will be able to exchange with the best professionals and will be supervised by a highly experienced assistant tutor.

## 3. Entering First-Class Clinical Environments

The facilities chosen by TECH for the practical stage of this program will guarantee the professional access to a prestigious clinical environment within the field of management and critical care in, Emergencies and Disaster Emergencies. In this way, they will be able to directly analyze the work dynamics of a demanding, rigorous and exhaustive area of nursing.





# Why Study this Hybrid Professional | 11 **tech** Master's Degree?

### 4. Combining the Best Theory with State-of-the-Art Practice

Few programs manage to combine theoretical and practical learning of its contents. However, TECH has overcome this limitation by creating this Hybrid Professional Master's Degree where the alumni will acquire first level skills. This is possible thanks to its well-differentiated educational stages that dedicate a first moment to the study of the contents online and is complemented with an intensive on-site internship in a renowned hospital center for 3 weeks.

#### 5. Expanding the Boundaries of Knowledge

To perform the professional internship of this Hybrid Professional Master's Degree, TECH offers centers of international importance. As a result, the nurse will be able to be up to date in reference to, Emergencies and Disaster Emergencies, under the supervision of renowned experts. Without a doubt, this is a unique opportunity that only TECH, the world's largest online university, could offer.







# tech 14 | Objectives



# **General Objective**

• The general objective of the Hybrid Professional Master's Degree is that the nurse acquires the necessary skills and attitudes to implement rigorous actions and make decisions corresponding to their area of performance for the care of critically ill patients. They will also be able to examine the main bioethical problems of this health discipline and recognize the physiological variables of the patient. They will also update their skills on the different casualty classification systems in any field or environment, taking into account the new management tools for large-scale events



With this comprehensive program, you will up to date your nursing knowledge on how to diagnose the cardiac rhythm of the arresting patient by applying the defibrillator-monitor paddles to the bare chest"





# **Specific Objectives**

# Module 1. Management and planning of care in emergencies, emergencies and disasters

- Know the fundamentals and historical evolution of Accident and Emergency health care as well as the new therapeutic approaches currently available
- Acquire knowledge on epidemiology in Accident and Emergency Services; plasticity and elasticity in situations of saturation, and their functional and structural re-organization in special situations (epidemics and pandemics)
- Understand the most relevant legal and ethical aspects of health care in Accident and Emergency services. Expand theoretical knowledge and its clinical applicability
- Identify the main ethical dilemmas in Accident and Emergency departments. Know the bioethical principles and their prioritization in pandemic situations
- Review humanization in emergency services and the peculiarity of its implementation. Learn the emergency nursing profile characteristics, as well as their different professional roles
- Increase knowledge of emergency department management, peculiarities and challenges, as well as quality definition and assessment: criteria and indicators
- Know and apply the tools for quality management Identify the most common concepts and terms related to quality management Apply the most widely used models: ISO 9001, EFQM
- Develop in depth knowledge of standardized nursing language (NANDA, NOC, NIC interrelationships) for subsequent application in emergency departments
- Acquire knowledge of the types of resources for emergency health care and their impact on the health care system
- Review the medical-legal aspects of patient safety and its multidisciplinary approach
- Acquire knowledge related to patient safety, as well as the measures to improve patient safety in this area, as a key component of the quality of care

#### Module 2. Triage. Advanced Disaster Management

- Delve into the different care models and the structural and functional peculiarities of Accident and Emergency services
- Delve into the coordination between the different services of the health system aimed at providing assistance to patients with emergency conditions
- Increase knowledge about Nurse Life Support, professional role and future challenges for the profession
- Know the types and characteristics of incidents with multiple victims and their special approach
- Fostering an attitude of responsibility when dealing with a disaster
- Obtain knowledge and skills on the main types of triage, both in-hospital and out-of-hospital, and triage in special situations, as well as the prioritization and implementation of new technologies in triage systems
- Know the types and characteristics of CBRN incidents: triage, operating procedures, sanitary zoning and hospital preparedness
- Possess a about victim management in special situations and emergency response identification and framework
- Show a variety of situations with which health care personnel must deal with
- Gain an in-depth knowledge of the different types of medical transport used today and their evolution throughout history. Develop knowledge of the fundamental characteristics of each type of patient transport and transfer

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## Module 3. Advanced Vital Support

- Gain in-depth knowledge of life supportand management of action protocols. AHA and ERC
- Know and understand the chains of survival for the optimal care of patients in different situations of imminent vital risk
- · Acquire advanced knowledge of life support in the adult patient
- Acquire advanced knowledge on advanced life support in the pediatric patient
- Obtain advanced knowledge on advanced life support in special situations (pregnant women, traumatic emergencies, drowning, hypothermia and drug intoxication)
- Learn advanced knowledge on advanced life support in the SARSCoV-2 patient
- Show the procedures carried out on the patient undergoing CPR and knowledge of the most pioneering techniques
- Delve into the knowledge of the ethical-legal framework for donors. Review on epidemiology, organization and coordination of transplant system
- Address the main bioethical and legal dilemmas faced by health professionals: no CPR and therapeutic effort limitation

## Module 4. Advanced Approach to the Patient with Heart Disease

- Delve into the theoretical and practical knowledge of advanced electrocardiography and its applicability in clinical nursing practice
- Identify and learn the management of bradyarrhythmias Aquire knowledge and skills for patient diagnosis and management
- Identify and learn the management of Tachyarrhythmias Aquire knowledge and skills for patient diagnosis and management
- Increase knowledge on implantable devices (pacemakers, implantable Holter and ICD), identification of indications, results and complications
- Improve skills in the advanced management of cardioversion and defibrillation. Acquisition knowledge and skills about the different therapeutic options: cardioversion (electrical and pharmacological) and/or defibrillation

- Delve into the knowledge of new devices and therapies for the management of patients with heart disease
- Identify and classify atherosclerotic disease: angina, SCASET, NSTEACS. Approach ACS and identify the management of the "Heart Attack Code" action protocol

## Module 5. Advanced approach to the patient with respiratory pathology

- Develop advanced theoretical knowledge of respiratory physiology and fundamentals of mechanical ventilation
- Identify and recognize the main peculiarities and differences between spontaneous breathing and mechanical ventilation
- Delve into the pathophysiological concepts of gas exchange and respiratory mechanics related to respiratory failure
- Identify the main pathological ventilatory patterns
- List existing devices for advanced airway management (supraglottic devices, Fastrach laryngeal mask, Combitube, etc.)
- Define the Difficult Airway, both anticipated and emergent, main aspects of its detection and management strategy through recommended algorithms
- Review the phases of Rapid Sequence Intubation (RSI)
- Acquire advanced knowledge on the different methods of invasive mechanical ventilation, as well as the different ventilatory methods
- Delve into advanced knowledge of noninvasive mechanical ventilation modalities, their parameters and alarms
- Demonstrate new ventilation devices and therapies in the emergency patient
- Identify the main complications of mechanical ventilation and advanced management of the respiratory patient
- Acquire advanced knowledge in individualized and quality care for the respiratory patient as a basis for excellence in care

## Module 6. Advanced Approach to other Potentially Serious Pathologies

- Acquire knowledge on management and identification of the main neurological emergencies Know the neurological assessment scales and signs and symptoms of patients with urgent neurological pathology
- Delve into the advanced management of the stroke patient: early identification of warning signs
  and symptoms and their potential impact on the patient. Approach and manage the "ICTUS
  Code" action protocol: inclusion and exclusion criteria, management and action protocols
- Delve into the knowledge of endocrine-metabolic diseases with special associated mortality: early identification and management of diabetic ketoacidosis and hyperosmolar coma. Know from the pathophysiology, pharmacological and non-pharmacological approach, and the main associated complications
- Recognize and identify urgent digestive pathologies, management and treatment
- Develop theoretical and practical knowledge about the different types of shock: assessment (early identification, differences and similarities), etiopathogenesis of the disease, clinical repercussions and the role of nursing
- Obtain knowledge of the latest recommendations on the management of shock and changes in therapeutics
- Delve into patients with sepsis. Train in the identification and treatment of the severely infected patient. Approach and management of the action protocol for "Code Sepsis"
- Delve into the knowledge of the different hydroelectrolytic alterations: etiology, symptomatology, concomitant comorbidities and possible complications. Acquire the skills for the identification, assessment and approach
- Delve into the knowledge of the different acid-base alterations: etiology, symptomatology, concomitant comorbidities and possible complications. Gain skills for the identification, assessment and approach. Review knowledge of gasometric analysis
- Update knowledge on intravenous therapy: associated indications and complications. List
  the incompatibilities of concomitant administration of drugs and delve into the advanced
  management of intravenous therapy

- Analyze urgent pathology in patients undergoing transfusion of blood products
  Review of general aspects about transfusions: advantages, complications and latest
  recommendations
- Delve into the knowledge and skills for the selection of the different types of intravascular catheters according to their therapeutic suitability. Review the notions of maintenance, insertion, advantages and disadvantages. Present the latest CDC recommendations on catheter management and the "Code Sepsis" protocol
- Identify algorithms for access choice, duration and withdrawal according to CDC recommendations
- Identify the main risks linked to catheter-associated infection
- Learn strategies for maintenance of venous accesses

## Module 7. Advanced Approach to Traumatologic Emergencies

- Develop the epidemiology related to the severe trauma patient and the epidemiological magnitude involved
- Delve into the assessment and stabilization of the trauma patient, with specific procedures and techniques throughout the process of emergency health care treatment
- Learn about resuscitation therapies related to major trauma, with a focus on damage control resuscitation
- Describe the action plan for a "Polytrauma Code"
- Get up to date on mobilization and immobilization protocol for trauma patients
- Acquire advanced knowledge of burns, both in their assessment and management
- Plan nursing care based on identified problems
- Demonstrate the main therapeutic techniques and nursing care related to fractures and dislocations
- Delve into pain management and acquire skills to perform advanced care

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### Module 8. Rare and infectious-contagious diseases

- Acquire knowledge that facilitates assistance and skill in providing care to patients with coagulopathies. Compare hemophilia A and B, Analyze Von Willebrand's disease, as well as delve into clotting factors
- Delve into chemical sensitivity, and know the recommendations to be considered Acquire skills for handling this type of patients. Raise professionals' awareness on this health problem
- List and detail the main infectious-contagious pathologies
- Acquire the necessary knowledge as well as the management of SARS CoV2 infection
- Identify the main complications of SARS CoV2 infection
- Acquire the necessary knowledge in isolation and prevention of hospital infections to provide quality and safe care, with the aim of reducing nosocomial infections. Know the impact of nosocomial infections
- Delve into the legal framework and waste management. Identify the risks associated with so-called hazardous drugs
- List the components of individual protection equipment, and delve into the necessary preparation for professionals who are directly or indirectly involved
- Exhibit the elasticity that an emergency department must have nowadays, as well as its adaptability capacity during special situations

# Module 9. Care Applied to the Different Life Stages of a Patient in the Emergency Unit

- Delve into the knowledge of the main anatomical and physiological changes that occur in the pregnant patient, as well as the assessment, diagnosis and treatment of the most prevalent obstetric emergencies and / or complex approach
- Acquire knowledge of the labor process, identifying the algorithms of the labor process and the care associated with each stage. In order to identify the care to be carried out during



the periods of dilation, expulsion and delivery, as well as the immediate care required by the newborn

- Obtain Know from the main anatomomy and physiological characteristics of the pediatric patient, which characterize its special approach and treatment, delving into the most urgent pathologies
- Delve into the therapeutics of significant life stages, such as dose management and the identification of incompatibilities and/or contraindications
- Recognize the main items to deal with patients of special vulnerability, such as those subjected to gender violence and/or abuse
- Delve into the necessary knowledge to holistically approach the patient in the last days of life, knowing the importance of the family and the psychosocial aspect Early recognition of incipient signs of discomfort and pain, knowledge of pain management and the main analgesic scales
- Know the communication tools for the transmission of bad news and education for the support during the mourning process

#### Module 10. Toxicology and Advanced Approach to the Psychiatric Patient

- Delve into the necessary knowledge for the management and identification of main toxicological emergencies and abuse drugs
- Know the action protocol to be followed in case of "chemical submission"
- Recognize and distinguish those intoxications that require immediate attention, teaching the student how to evaluate and approach them
- List the main antidotes, their pharmacokinetics and pharmacodynamics, as well as their preparation and administration
- Identify and assess through observation, interview and therapeutic relationship the needs of the psychiatric patient
- Acquire the necessary skills in the performance of Nursing care in the patient with mental disorders

- Acquire evidence-based knowledge about Mental Health. Enhance knowledge on the approach to psychiatric patients and their special conditions
- Acquire notions on the main psychiatric illness to carry out an adequate adaptation between the patient's needs and the interventions of the Nursing Staff
- Delve into the main causes of attempted suicide and suicidal ideation, as these pathologies are increasing, with high mortality and incidence rates, especially in some age groups
- Prepare students on the types of containment for the psychiatric patient's approach, acquiring the ability to choose and implement them according to the patient's needs
- Know the main epidemiological and morbidity data associated with mental illness
- Know the current legislation on mental health
- Learn about the determinants and epidemiology of the main mental health problems among emergency department workers

#### Module 11. Teaching Methods and New Technologies in the Emergency Department

- Learn the physics of sound and properties of sound waves, as well as the key elements involved in practical application
- Differentiate the different types of transducers and their usefulness according to the object to be examined
- Differentiate the anatomical planes shown in the generated image
- Identify the objects to be scanned and know how they behave during the scanning process
- Identify the different types of image artifacts useful for ultrasound scanning (pathological and non-pathological)
- Know the advantages and disadvantages compared to other types of radiodiagnostic scans
- Increase knowledge on the different materials that can be used in catheters and their biocompatibility

# tech 20 | Objectives

- Identify the main complications in the insertion of peripherally inserted central venous accesses
- Develop an adequate technique for the insertion of nasogastric tubes, identifying the intervening structures
- Know the sequence and layouts for FAST (Focused Abdominal Sonography For Trauma) scanning
- Develop appropriate technique for bladder volume estimation and calculation
- Know the intracavitary electrode technique indications as a way to locate the end of central catheters
- Know and apply the different paradigms that support the simulation methodology for the improvement and development of accident and emergency equipments
- Integrate new perspectives of clinical training through simulation techniques
- Acquire basic knowledge about simulation as a tool for clinical safety in the emergency department
- Discover the tools for the design, implementation and development of innovative simulation scenarios
- Explain the elements of communication in simulation (*Briefing and Debriefing*) as a way to help students in the development of communication and emotion management skills in the clinical field





### Module 12. Update on Coronavirus Infections

- Learn about the growth and evolution of Coronavirus in the world
- Delve into the microbiological characteristics of the disease
- Learn about the different epidemiological changes in coronavirus infections from their discovery to the present day
- Delve into the functioning of the immune system during Coronavirus infection
- Understand the pathogenesis and pathophysiology of coronavirus infections
- Know the main risk groups in Coronavirus infections
- Delve into the different methods of transmission of the disease
- Know the different methods of Biosafety in microbiology laboratories for the handling of Coronavirus samples
- Explore future challenges in the prevention, diagnosis and therapeutics of Coronavirus infections







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# **General Skills**

- Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- Apply acquired knowledge and problem-solving skills in new, or unfamiliar environments, within broader (or multidisciplinary) contexts related to the field of study
- Integrate knowledge and face the complexity of making judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities related to the application of their knowledge and judgments
- Communicate their conclusions, knowledge and ultimate rationale to specialized and nonspecialized audiences in a clear and unambiguous manner
- Employ learning skills that will enable them to continue studying in a manner that will be largely self-directed or autonomous





# **Specific Skills**

- Understand the Nursing role at a time when humanization plays an important role in health care
- Be able to optimally identify those patients who are in the most severe and/or vulnerable situation
- Work in complex situations, where not only the patient will have to be cared for with quality, but also manage assistance and, in special situations, initiate rescue maneuvers
- Comprehension the functioning of those special situations where nursing actions must be adapted
- To apply those advanced procedures and techniques that are frequently performed in this environment, such as intraosseous route cannulation or the use of the capnograph
- Achieve excellence in the most critical situation for the patient, when he/she is in cardiorespiratory arrest, but also in the immediate aftermath
- Use electrocardiography for early identification of heart diseases and an effective therapeutic approach
- Understand thoroughly the ventilation associated to the devices they will have to use in the environments where they will develop their assistance activity and the different therapies used
- Understand how to work with patients in shock, on which we will deepen in the identification and advanced therapeutic management of each of the situations that may arise

- Know how to work with volume replacement therapies, both in the management of fluid therapy and transfusions, to perform quality hemodynamic management based on the latest scientific evidence recommendations
- Assimilate the guidelines that should be followed when performing a correct assessment
  and identification of a patient, as well as the most advanced treatments and associated
  therapies that the Nursing staff should be aware of
- Understand how SARS- CoV2 and hemorrhagic fevers affect patients
- Identify the anatomic and physiological changes inherent to pregnancy, the main obstetric emergencies and the most important considerations to be taken into account by the nursing
- Proceed with psychiatric patients, providing the professional with the necessary tools to intervene safely and effectively in a psychiatric emergency situation, both individually and as part of a team
- Acquire the technical skills to approach simulation as well as to lead a working group to establish training plans in their service or institution





# Management



# Mr. Ruiz López, Daniel

- · Nurse specialized in Nursing Services Direction and Management
- · Nursing Supervisor in the Adult Emergency Department of La Paz University Hospital of Madrid)
- · Diploma in Nursing (DUE)), University School of Nursing, Cordoba
- · Master in Nursing Management by Cardenal Herrera University
- · University Expert in Nursing in the Hospital Emergency Department by the Cardenal Herrera Ceu University
- University Expert in Management Skills in Nursing by Cardenal Herrera University
- · Postgraduate Diploma in Quality Management for Nurses at Cardenal Herrera University
- · University Expert in Management and Services Supervision for Nursing by the Cardenal Herrera Ceu University
- · University Expert in Direction and Management of Health Services for Nurses by the Cardenal Herrera Ceu University
- · Instructor of Instructors and Auditors in Triage Manchester Spanish Triaje Group
- Course of Instructors and Auditors in Triage Manchester Spanish Triaje Group



## Ms. Souto Novas, Ana María

- Nurse Emergency Supervisor at La Paz University Hospital(Madrid)
- Admission Nurse at La Paz University Hospital(Madrid)
- · Master's Degree in Integration and Critical Problem Solving in Nursing from the University of Alcalá
- · Postgraduate Diploma in Management and Nursing Services Leadership given by the School of Health Sciences
- · University Expert in Accidents and Emergencies from the Complutense University of Madrid
- · Postgraduate Certificate in Nursing from the Pontificia University of Salamanca

## **Professors**

### Mr. Galbis Palma, Alejandro

- Nurse at the Adult Emergency Department of La Paz University Hospital (Madrid)
- Postgraduate Certificate in Nursing
- Postgraduate Certificate in Nursing Application of Techniques in Accident and Emergency Care
- Postgraduate Certificate in Nursing Interventions in Disaster Situations
- Postgraduate Certificate in Instrumentalized Life Support
- Postgraduate Certificate in Intravenous Therapy and PICC Implantation

### Dr. Estebaranz Santamaría, Cristina

- Nurse at the Adult Emergency Department of La Paz University Hospital (Madrid)
- Associate Professor of Nurses, Autonomous University of Madrid
- Main advisor for Nursing Clinical internships at the Autonomous University of Madrid of Madrid
- PhD in Medicine and Surgery from the Autonomous University of Madrid.
- Graduate in Nursing from the Autonomous University of Madrid.
- Master's Degree in Accidents, Emergencies and Critical Nursing Care given by the European University of Madrid

# tech 30 | Course Management

## Mr. García Garrido, Miguel Ángel

- Nurse of the Adult Emergency Department of La Paz University Hospital
- University Diploma for Nursing.
- Master's Degree in Health Emergency and Disasters given by the University of León
- Master's Degree in Critical Illness and Emergencies given by the University of Barcelona
- Master's Degree in Clinical Research given by the University of Barcelona
- Postgraduate Certificate in Advanced Life Support
- Postgraduate Certificate in Trauma Advanced Life Support
- Postgraduate Certificate in Basic and Advanced CPR in Pediatrics

## Ms. Gómez Lage, Laura

- Nurse at the Adult Emergency Department of La Paz University Hospital(Madrid)
- Degree in Nursing from the Complutense University of Madrid
- Expert in Nursing Processes and Interventions for Pediatric Patients in Life-Threatening Situations by FUDEN and the Catholic La University of Avila
- Expert in Emotional Development and Parenting by FUDEN and Catholic La University of Avila
- Basics of Accident and Emergency Nursing by FMAE
- Emergencies in the Institutionalized Patient Care by the Puerta de Hierro Majadahonda University Hospital
- Pharmacology Residency in Accident and Emergency Care by FUDEN
- Nursing Care of the Healthy Newborn by FMAE
- Frequently Used Drugs by Diffusion Nursing Advances







## Ms. Peinado Quesada, María Angustias

- Nurse at the Adult Emergency Department of La Paz University Hospital (Madrid)
- Nurse in in Intensive Care Unit of St Helier Hospital (London)
- Admission Nurse at La Paz University Hospital(Madrid)
- Nurse from the Intensive Care Unit of La Paz University Hospital(Madrid)
- Full Professor at the Autonomous University of Madrid
- Diploma in Nursing from the Autonomous University of Madrid.
- Master in Assessment and Management of the Critically III Patient by ST George's University (London)
- Expert in Advanced Mechanical Ventilation for Nurses from St. George's University
- Expert in Accident Emergency and Critical Care Nursing Care by FUDEN
- American Heart Association BLS/AVS Instructor



Professionals of high prestige in the field of nursing make up the faculty of this excellent TECH program"





# tech 34 | Educational Plan

# **Module 1.** Management and planning of care in emergencies, emergencies and disasters

- 1.1. Past, Present and Future of Accident and Emergency Services. New Therapeutic Approach
- 1.2. Epidemiology and Criteria for Emergency Department Saturation
- 1.3. Legal framework for Urgent and Emergency Care
- 1.4. Ethics Framework for Urgent and Emergency Care
- 1.5. Humanization. The Role of Nurses
- 1.6. Management and Quality
- 1.7. Registration Systems and Standardized Language Contingency Plans
- 1.8. Financial Resources for Emergency Health Care
- 1.9. Patient Security

# Module 2. Triage. Advanced Disaster Management

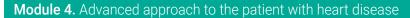
- 2.1. Structuring of Accident and Emergency Services
- 2.2. Advanced Nursing Life Support (ALSN)
- 2.3. Multiple Victim Incidents and Disasters. Types and Characteristics
- 2.4. Triage Systems
- 2.5. Emergency Planning and Action Procedures
- 2.6. CBRN Incidents
- 2.7. Management of Fatalities and Victims. Humanitarian Assistance in Disasters
- 2.8. Medical Rescue in Special Situations
- 2.9. Medical Transport and Patient Transfer

# Module 3. Advanced Vital Support

- 3.1. Introduction to Life Support
- 3.2. Advanced Life Support in Adults
- 3.3. Advanced Pediatric Life Support
- 3.4. Life Support in Special Situations
- 3.5. Advanced Life Support in the Patient with SARSCoV-2 Infection
- 3.6. Advanced CPR Procedures and Techniques
- 3.7. Post-Resuscitation Care
- 3.8. Organ and Transplants Donation
- 3.9. Ethical Dilemmas and Legal Framework







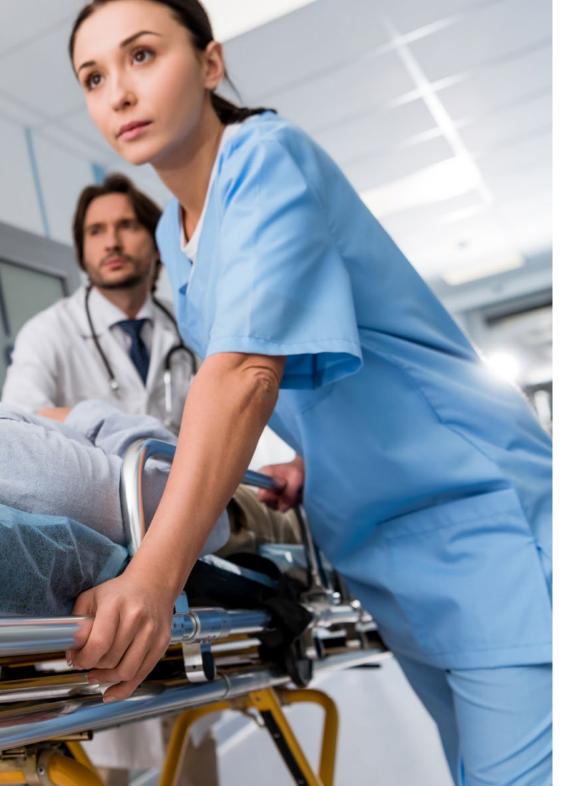
- 4.1. Electrocardiography
- 4.2. Bradyarrhythmias
- 4.3. Tachyarrhythmias
- 4.4. Other Alterations in Electrical Conductivity
- 4.5. Implantable Devices
- 4.6. Cardioversion and Defibrillation
- 4.7. Mechanical Devices and other Therapeutic Techniques
- 4.8. Acute Coronary Syndrome. The Heart Attack Code

#### Module 5. Advanced approach to the patient with respiratory pathology

- 5.1. Respiratory Physiology and Mechanical Ventilation
- 5.2. Gas Exchange Alterations
- 5.3. Advanced Airway Management
- 5.4. Difficult Airway
- 5.5. Potentially Severe Respiratory Pathology
- 5.6. Invasive Mechanical Ventilation
- 5.7. Non-Invasive Mechanical Ventilation
- 5.8. Update on Ventilatory Therapies
- 5.9. Advanced Nursing Care of the Respiratory Patient

### Module 6. Advanced Approach to other Potentially Serious Pathologies

- 6.1. Assessment of the Neurological Patient Scales
- 6.2. Stroke. Code Stroke
- 6.3. Ketoacidosis and Hyperosmolar Coma
- 6.4. Gastrointestinal Bleeding
- 6.5. Cardiogenic and Hypovolemic Shock Hemodynamic Assessment and Management
- 6.6. Obstructive and Distributive Shock. Hemodynamic Assessment and Management
- 6.7. Severe Infections: SEPSIS Code
- 6.8. Alterations in the Hydroelectrolyte Balance
- 6.9. Alterations in the Acid-base Equilibrium. Advanced Interpretation of Gassometry
- 6.10. Fluid Therapy and Transfusions
- 6.11. Advanced Nursing Care in Intravascular Catheters. Bacteremia Zero



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#### Module 7. Advanced Approach to Traumatologic Emergencies

- 7.1. Magnitude and Epidemiology of Severe Trauma
- 7.2. Assessment and Stabilization of the Trauma Patient
- 7.3. The Polytraumatized Patient
- 7.4. Damage Control Resuscitation
- 7.5. Burns. Assessment and Management of the Severely Burned Patient
- 7.6. Advanced Nursing Care in Acute and Chronic Wounds Sutures
- 7.7. Fractures and Dislocations. Splinting and Casting
- 7.8. Pain as the 5th Vital Constant. Assessment and Management

#### Module 8. Rare and infectious-contagious diseases

- 8.1. Congenital Coagulopathies
- 8.2. Chemical Sensitivity
- 8.3. Main Infectious and Contagious Pathologies
- 8.4. Epidemiology, Pathogenesis, Pathophysiology, and Transmission Mechanisms of Coronavirus Infections
- 8.5. Microbiological Diagnosis and Management of SARS CoV2 Infection
- 8.6. Hemorrhagic Fevers
- 8.7. Insulation and Safety Measures
- 8.8. Dangerous Waste and Drug Management
- 8.9. Personal Protective Equipment (PPE). Staff Education and Simulation
- 8.10. Adaptation of an Emergency Department to New Contagious Diseases

# **Module 9.** Care Applied to the Different Life Stages of a Patient in the Emergency Unit

- 9.1. The Anatomical and Physiological Changes in the Pregnant Woman
- 9.2. Major Pregnancy Urgent Pathologies
- 9.3. Delivery Assistance and Immediate Care
- 9.4. Anatomical and Physiological Characteristics of the Pediatric Patient
- 9.5. Major Pediatric Urgent Pathologies
- 9.6. Special Considerations in Therapeutics and Pharmacology
- 9.7. Gender Violence and Abuse
- 9.8. Situation of the Last Days Palliative Sedation and Euthanasia
- 9.9. Communication with the Family and Coping with Mourning

## Module 10. Toxicology and Advanced Approach to the Psychiatric Patient

- 10.1. Drugs of Abuse and Intoxication. Chemical Submission
- 10.2. Advanced Management of Acute Poisoning Antidotes
- 10.3. Epidemiology and Legal Framework of the Psychiatric Patient
- 10.4. Self-induced Suicidal Ideation and Attempt
- 10.5. Behavioral Alterations
- 10.6. Communication Strategies and Verbal Restraint
- 10.7. Mechanical Restraint and Safety
- 10.8. Emotional Impact on Working Staff in Emergency Departments

# **Module 11.** Teaching Methods and New Technologies in the Emergency Department

- 11.1. Physical Fundamentals of Ultrasound, History and Advances
- 11.2. Identification of Structures, Planning and Application of Ultrasound in Advanced Emergency Department Practice
- 11.3. Limitations in the Use of Ultrasound for Patient Assessment in Emergency Departments
- 11.4. Assessment of Venous Capital and Vascular Economy, Ultrasound Approach to Venous Access in the ED
- 11.5. Long-term Catheter Insertion, Feasibility and Alternatives to Short Peripheral Cannulae
- 11.6. Ultrasound-guided/echo-assisted Procedures as a Support to Care Practice (Bladder Catheterization, Nasogastric Catheterization, Obtaining Samples)
- 11.7. Alternatives to Radiodiagnostics in Catheter Tip Localization
- 11.8. Teaching in Emergency Care, Educational Planning and Objectives for Students
- 11.9. Practicality of the Simulation and Updating of Knowledge
- 11.10. Communication Techniques in Clinical Simulation Scenario Preparation

## Module 12. Update on Coronavirus Infections

- 12.1. Discovery and Evolution of Coronaviruses
  - 12.1.1. Discovery of Coronaviruses
  - 12.1.2. Global Trends in Coronavirus Infections
- 12.2. Main Microbiological Characteristics and Members of the Coronavirus Family
  - 12.2.1. General Microbiological Characteristics of Coronaviruses
  - 12.2.2. Viral Genome
  - 12.2.3. Principal Virulence Factors



## Educational Plan | 37 tech

- 12.3. Epidemiological Changes in Coronavirus Infections from its Discovery to the Present
  - 12.3.1. Morbidity and Mortality of Coronavirus Infections from their Emergence to the Present
- 12.4. The Immune System and Coronavirus Infections
  - 12.4.1. Immunological Mechanisms Involved in the Immune Response to Coronaviruses
  - 12.4.2. Cytokine Storm in Coronavirus Infections and Immunopathology
  - 12.4.3. Modulation of the Immune System in Coronavirus Infections
- 12.5. Pathogenesis and Pathophysiology of Coronavirus Infections
  - 12.5.1. Pathophysiological and Pathogenic Alterations in Coronavirus Infections
  - 12.5.2. Clinical Implications of the Main Pathophysiological Alterations
- 12.6. Risk Groups and Transmission Mechanisms of Coronaviruses
  - 12.6.1. Main Sociodemographic and Epidemiological Characteristics of Risk Groups Affected by Coronavirus
  - 12.6.2. Coronavirus Mechanisms of Transmission
- 12.7. Natural History of Coronavirus Infections
  - 12.7.1. Stages of Coronavirus Infection
- 12.8. Latest Information on Microbiological Diagnosis of Coronavirus Infections
  - 12.8.1. Sample Collection and Shipment
  - 12.8.2. PCR and Sequencing
  - 12.8.3. Serology Testing
  - 12.8.4. Virus Isolation
- 12.9. Current Biosafety Measures in Microbiology Laboratories for Coronavirus Sample Handling
  - 12.9.1. Biosafety Measures for Coronavirus Sample Handling
- 12.10. Up-to-Date Management of Coronavirus Infections
  - 12.10.1. Prevention Measures
  - 12.10.2. Symptomatic Treatment
  - 12.10.3. Antiviral and Antimicrobial Treatment in Coronavirus Infections
  - 12.10.4. Treatment of Severe Clinical Forms
- 12.11. Future Challenges in the Prevention, Diagnosis, and Treatment of Coronavirus
  - 12.11.1. Global Challenges for the Development of Prevention, Diagnostic, and Treatment Strategies for Coronavirus Infections





## tech 40 | Clinical Internship

The clinical practice, integrated as the second stage of this degree, has 120 educational hours. The nurse will be received in a hospital center from Monday to Friday to complete 3 weeks of training. In the chosen institution, according to their educational interests and geographic location, they will The Professional have access to modern interventionalists who are adjusted to state-of-the-art therapeutic protocols. In this way, you will acquire a holistic vision of the main to the advances in the sector and will perfect your skills.

In addition, they will develop new experiences together with experts with extensive experience. You will also have the support and didactic advice of an assistant tutor to be able to quickly and flexibly assimilate all those tasks that are mandatory during this practical training in order to optimally achieve your pedagogical objectives.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for clinical nursing practice (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the

internship, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:



Receive specialized education in an institution that can offer you all these possibilities, with an innovative academic program and a human team that will help you develop your full potential"



# Clinical Internship | 41 **tech**

| Module   | Practical Activity   |
|--|--|
| New technologies in<br>the Emergency Room<br>for nursing Nursing         | Locate by means of ultrasound equipment the venous accesses in the Emergency Room  |
|  | Long-term Catheter Insertion, Feasibility and Alternatives to Short Peripheral Cannulae  |
|  | Perform bladder catheterization, nasogastric catheterization and sampling using ultrasound-guided techniques   |
| The Evaluation of<br>Catastrophes From an<br>Nurses s Point of View      | Coordinate the organization and operation of medical transport with emphasis on communication, reporting and the integration of intensive care teams           |
|  | Implement, according to catastrophic situations, different emergency plans and action procedures   |
|  | Classify patients according to the latest triage systems and specific clinical criteria  |
|  | Initiate resuscitation with a sequence of 30 chest compressions for 2 ventilations (BLS) as part of the Advanced Life Support protocols                        |
|  | Consider the application of a precordial thump for a witnessed arrest when the defibrillator is not available and in previously monitored patients             |
|  | Diagnose the cardiac rhythm of the patient in arrest by applying the defibrillator-monitor paddles to the bare chest   |
|  | Simplify the number or type of drugs used in cardiopulmonary resuscitation (CPR)   |
| Urgencies and<br>emergencies in the<br>adult approached from<br>Nursing  | Evaluate the different health conditions of the patient after a polytraumatic injury and report them to the physician  |
|  | Apply analgesic or sedation drugs according to the criteria of the physician in charge of your care  |
|  | Use Invasive and Non Invasive Mechanical Ventilation techniques according to the according to the recommendations of the physician in charge                   |
| Urgencies and<br>emergencies in the<br>Pediatric Patient from<br>Nursing | Manage difficult to access airways with specialized instruments  |
|  | Access to the peripheral and central venous system through the most up-to-dated techniques of cannulation  |
|  | Use different psychological tools to communicate grief news to family members and offer bereavement support  |
| Advanced Role of<br>Nursing in coronavirus<br>infections                 | Determine the state of respiration of the patient hospitalized in emergency units taking into account whether it is too fast, slow or with latent difficulties |
|  | Measure patients' blood oxygenation and note previous comorbidities such as possible elevated blood pressure   |
|  | Emplement different personal protective equipment to prevent the spread of the virus   |

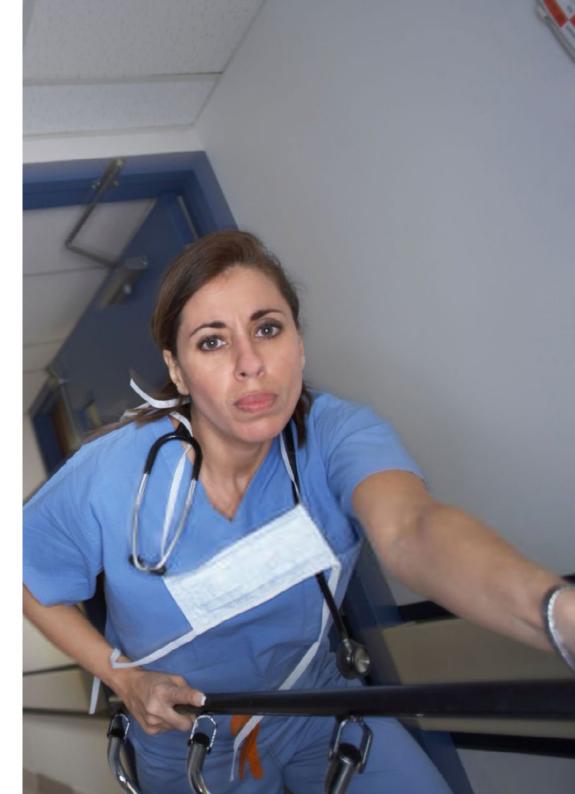


## **Civil Liability Insurance**

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



## **General Conditions of the Internship Program**

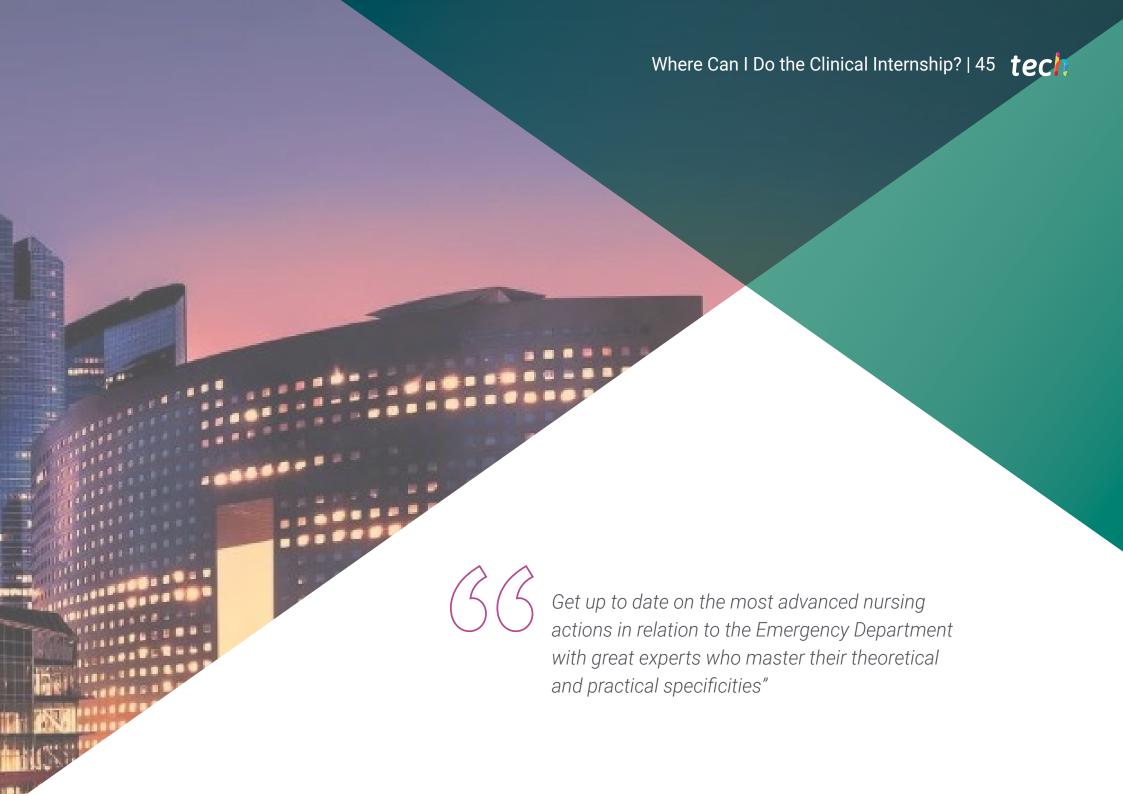
The general terms and conditions of the internship program agreement shall be as follows:

- 1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.
- **2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.
- 3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

- **4. CERTIFICATION**: Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.
- **5. EMPLOYMENT RELATIONSHIP:** the Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.
- **6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed
- 7. DOES NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.



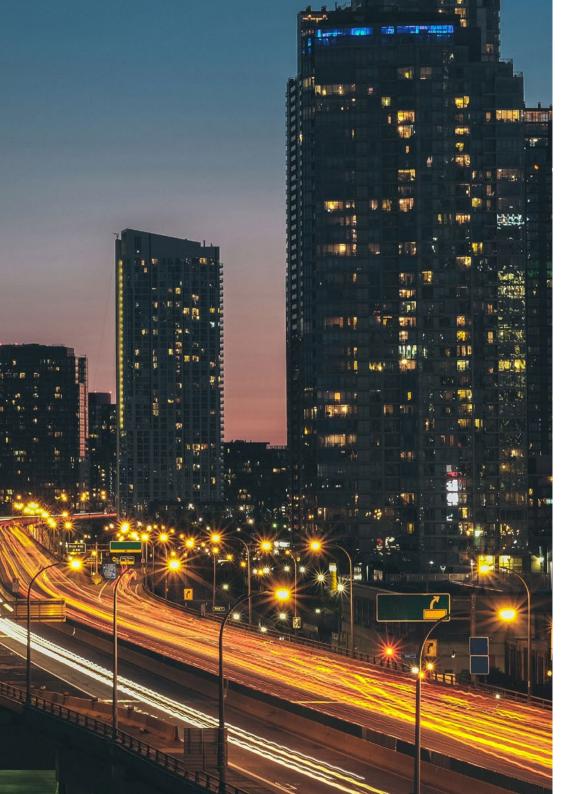


# tech 46 | Where Can I Do the Clinical Internship?

The student will be able to complete the practical part of this Hybrid Professional Master's Degree at the following centers:





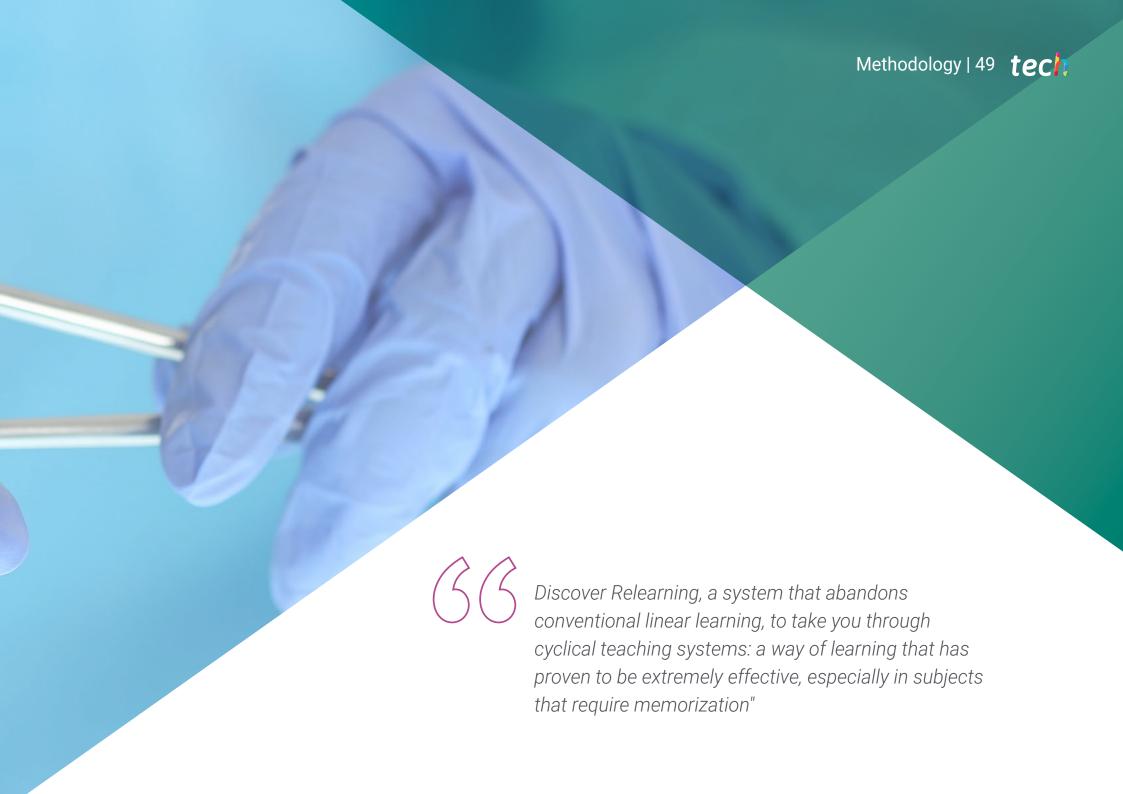


# Where Can I Do the Clinical Internship? | 47 tech



Delve into the most relevant theory in this field, subsequently applying it in a real work environment"



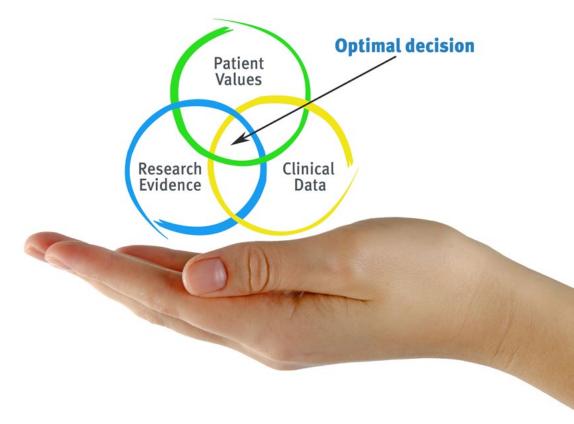


## tech 50 | Methodology

### 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:

- 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.
- 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 case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.

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 | 53 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 trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. 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 really 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.



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

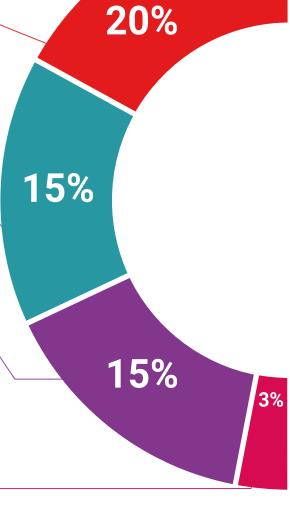
We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch them as many times as you 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.



# **Expert-Led Case Studies and Case Analysis** Effective learning ought to be contextual. Therefore, TECH presents real cases in which

# **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

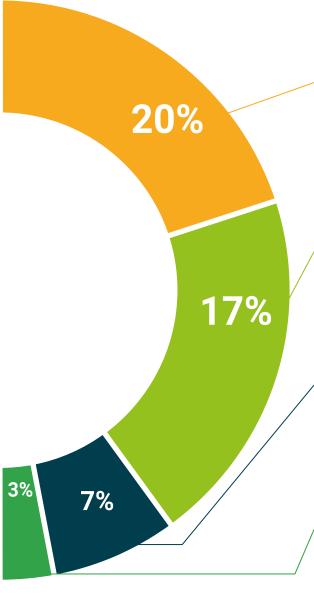
There is scientific evidence suggesting that observing third-party experts can be useful.

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.







## tech 58 | Certificate

This **Hybrid Professional Master's Degree in Advanced Emergency and Critical Care Nursing** contains the most complete and up-to-date program on the professional and educational field.

After the student has passed the assessments, they will receive their corresponding Hybrid Professional Master's Degree diploma issued by TECH Technological University via tracked delivery\*.

In addition to the certificate, students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.

Title: Hybrid Professional Master's Degree in Advanced Emergency and Critical Care Nursing

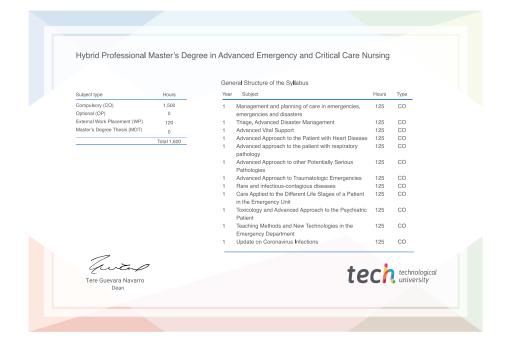
Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.





<sup>\*</sup>Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning



# Hybrid Professional Master's Degree

Advanced Emergency and Critical Care Nursing

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.

