

# Professional Master's Degree Intensive Care Nursing

Endorsed by:





## Professional Master's Degree Intensive Care Nursing

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Technological University
- » Dedication: 8h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/in/nursing/professional-master-degree/master-intensive-care-nursing](http://www.techtitute.com/in/nursing/professional-master-degree/master-intensive-care-nursing)

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# 01

# Introduction

The Intensive Care Unit is one of the most specialized services, where the role of the nursing professional reaches a more advanced level of responsibility. Caring for patients with a severe prognosis or at high risk of complications requires a high degree of precision in nursing techniques and care throughout the recovery process. Constant updating in Nursing is key to acquire the competencies of a highly qualified professional and to guarantee the best care for the critical patient in intensive care.





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*The new scenarios in Intensive Care Units demand new update programs, adapted to the real needs of nursing professionals, so that they can incorporate the advances in critical patient care"*

The provision of professional healthcare services within an Intensive Care Unit requires the acquisition of a highly specific set of knowledge and skills. Critical patient care is also one of the most specialized and evolving areas of the healthcare world. It is essential, therefore, that the nursing professional is able to respond adequately to these advances in scientific and technological knowledge by constantly updating their knowledge.

The content of this Professional Master's Degree is focused on the detailed updating of nursing professionals for the provision of care in intensive care areas, whose functions require high levels of qualification. On the other hand, to initiate their activity as professionals in the field of research.

Only with an adequate, focused and specialized updating program can the necessary knowledge and skills be acquired and maintained to respond to the needs of critically ill patients with criteria of efficiency, scientific rigor and the highest professional level. The work of nurses in Intensive Care Units increasingly requires competent professionals with specialized Knowledge, so that they are able to respond to the care needs that society and the progress of medicine pose. This way, they will become familiar with a wide range of techniques and procedures and acquire the skills required for the assessment and care planning for critically ill patients. Specific care and assistance is indispensable and can only be provided by qualified and specialised professionals with specific knowledge and skills.

Thanks to this Professional Master's Degree, students will complete their specialization in Intensive Care with an online methodology that will allow them to update their knowledge in the field, adapting their skills to their daily work.



*Constant updating is key to providing specialized nursing care with maximum quality and safety required by the critically ill patient"*

This **Professional Master's Degree in Intensive Care Nursing** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- ♦ Development of more than 100 clinical cases presented by nursing professionals with expertise in intensive care and university professors with extensive experience in the critical 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
- ♦ Assessment and monitoring of the critically ill patient; the latest international recommendations on life support maneuvers; critical care in patients with neurological, cardiovascular and respiratory disorders; care of the severe trauma patient in intensive care; pharmacology and transport in the critically ill patient, etc.
- ♦ Comprehensive systematized action plans for the main pathologies in the Intensive Care Medicine Unit
- ♦ Presentation of practical workshops on procedures, diagnosis, and treatment techniques in critical patients
- ♦ 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
- ♦ Availability of content from any device, fixed or portable, with an Internet connection



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*This Professional Master's Degree may be the best investment you can make when selecting an up-to-date program for two reasons: in addition to updating your knowledge in Nursing in Intensive Care, you will obtain a qualification from TECH Technological University"*

This Professional Master's Degree program is designed to update nursing professionals who work in Intensive Care Units, and 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.

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 an immersive training program to train in real situations.

This program Scientific is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this reason, the student will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of Intensive Care units who also have extensive teaching experience.

*Update your knowledge through the Professional Master's Degree in Intensive Care Nursing, in a practical way that is adapted to your needs.*

*This Professional Master's Degree offers training in simulated environments, which provide immersive learning programmed to train in real situations.*



# 02 Objectives

This program is designed to update the nursing professional's knowledge in order to provide quality care, based on the latest scientific evidence and to guarantee patient safety.





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*This Professional Master's Degree will allow you to acquire specialized knowledge in one of the most demanding areas while you combine it with your work activity, enhancing your career and helping you to open doors to your future"*



## General Objectives

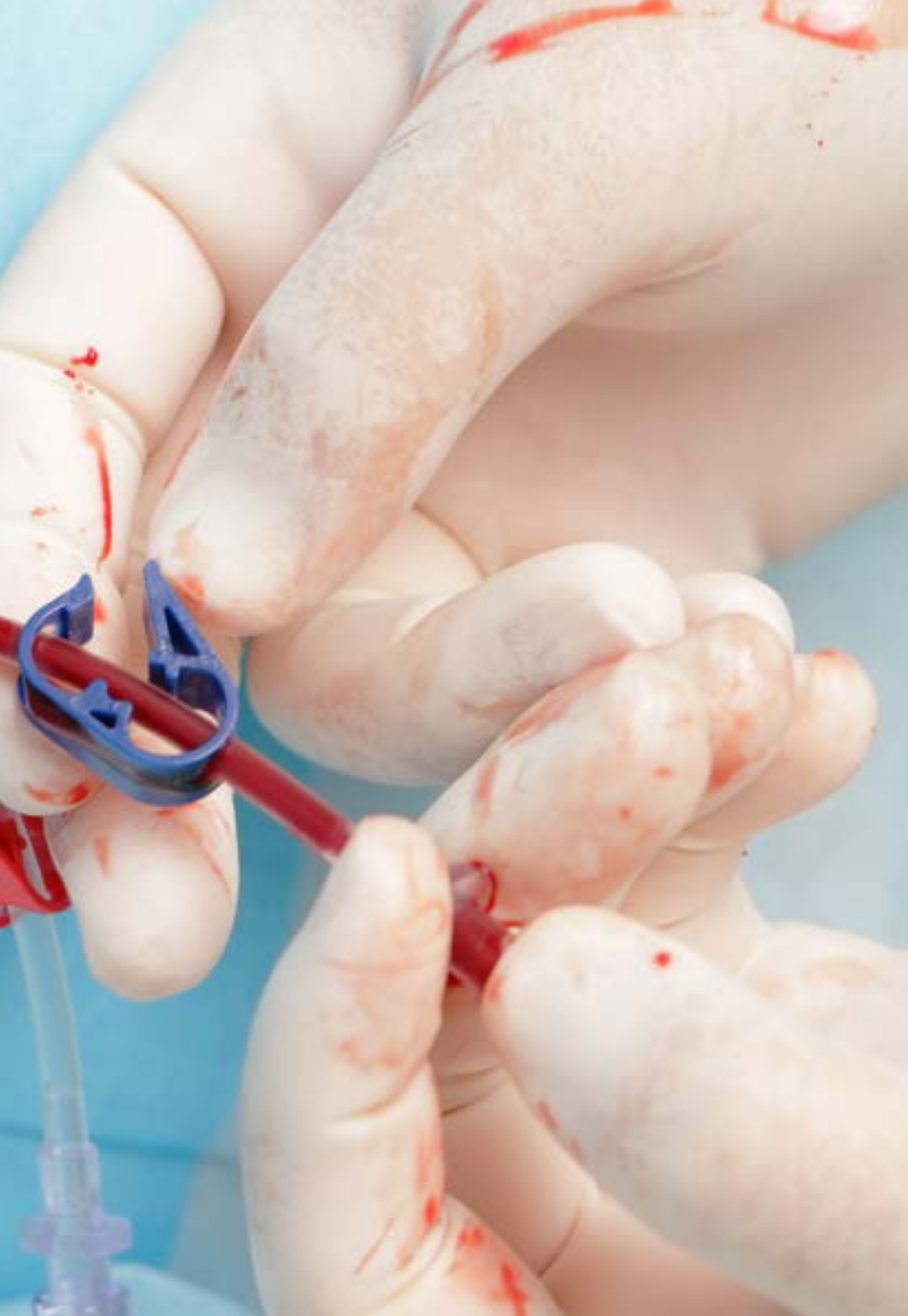
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- ♦ Update essential knowledge in the nursing care of critically ill patients in order to increase the quality and safety of nursing practice in the Intensive Care Unit
- ♦ Acquire the necessary skills to provide comprehensive care to the critical patient with criteria of speed, efficiency and quality
- ♦ Review the fundamental principles of critical care nursing

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*With this Professional Master's Degree, you will acquire the necessary security in the performance of nursing practice in intensive care, helping you to grow personally and professionally"*





## Specific Objectives

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### **Module 1. Organization and Management of an Intensive Care Unit**

- ♦ Recognize the importance of proper management of the Intensive Care Unit
- ♦ Provide a safe patient environment in the intensive care unit by assessing and correcting the risk factors present

### **Module 2. Evaluation and Monitoring of a Critically Ill Patient**

- ♦ Describe the different modes of invasive and non-invasive monitoring of the critically ill patient, as well as their correct technique
- ♦ Analyze the importance of filling out the different nursing records used in the Intensive Care Unit, and interpret their value in the patient's rehabilitation process

### **Module 3. Life Support**

- ♦ Gain in-depth knowledge of life support and protocol management
- ♦ Know and understand the chains of survival for optimal patient care in different life-threatening situations
- ♦ Acquire advanced knowledge of life support in the adult patient
- ♦ Acquire advanced knowledge of life support in special situations
- ♦ Show the procedures performed on the CPR patient and knowledge of the most pioneering techniques

### **Module 4. Critical Care in Patients with Cardiocirculatory Disorders**

- ♦ In-depth knowledge of the anatomy and physiology of the cardiocirculatory system
- ♦ Identify the most frequent cardiocirculatory pathologies in the ICU
- ♦ Recognize different conditions and learn how to manage them in depth

### **Module 5. Critical Care in Patients with Respiratory Disorders**

- ♦ Develop advanced theoretical knowledge of respiratory physiology and fundamentals of mechanical ventilation
- ♦ Identify the main pathological ventilatory patterns
- ♦ Demonstrate new ventilation devices and therapies in the patient

### **Module 6. Care in Patients with Neurological Disorders**

- ♦ Gain in-depth knowledge of the anatomy and physiology of the nervous system
- ♦ Recognize the most common neurological pathologies in the ICU
- ♦ Identify cerebrovascular disease and delve into its approach and management
- ♦ Assess the coma patient, evaluate the degree of consciousness and provide specific care

### **Module 7. Digestive and Renal Pathology in the ICU and Other Pathologies**

- ♦ Acquire knowledge on management and identification of the main neurological diseases. 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
- ♦ Gain a deeper understanding of the different types of anesthesia
- ♦ 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
- ♦ Train in the identification and treatment of the severely infected patient. Approach and management of the protocol of action in case of sepsis
- ♦ Gain in-depth knowledge of critical care in poisoning, acquiring the skills for identification, assessment and approach

### **Module 8. Critical Care for Severe Trauma Patients**

- ♦ Apply the appropriate therapeutic procedures to the critically ill patient
- ♦ Anticipate the most common complications derived from the pathological processes of critically ill patients and their treatment in order to prevent their occurrence

### **Module 9. Pharmacology in Intensive Care**

- ♦ Update the procedures for the use of the most frequent drugs in the intensive care unit
- ♦ Describe the therapeutic action and most important side effects of frequently used drugs in the intensive care unit
- ♦ Review the standards for administration of drug therapy in the intensive care unit

### **Module 10. Critical Care for Paediatric Patients**

- ♦ Recognize the most frequent pediatric and adult pathological processes in the Intensive Care Unit
- ♦ Adequate nursing care for the pediatric critical patient
- ♦ Perform the nursing role in a pediatric and adult basic and/or advanced life support situation according to the latest European Resuscitation Council recommendations





### **Module 11. Hospital Transport**

- ♦ 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
- ♦ Prepare and supervise in-hospital and inter-hospital transfer of the adult critically ill patient

### **Module 12. Anesthesia and Surgery**

- ♦ Describe the characteristics, process and treatment of malignant hyperthermia
- ♦ Identify and know how to apply the different types of anesthesia
- ♦ Provide care for the critical post-surgical patient
- ♦ Provide critical care to transplant patients
- ♦ Manage the crash cart in the nursing care of the anesthetized patient
- ♦ Intervene in possible perioperative complications
- ♦ Manage the patient admitted to postanesthetic reanimation and recognize possible complications

### **Module 13. Research Methodology in Intensive Care Nursing**

- ♦ Learn how to retrieve quality specialized information in the Health Sciences
- ♦ Handle different reference managers
- ♦ Design qualitative and quantitative research
- ♦ Know the different types of instruments for critical reading
- ♦ Learn to write articles with a scientific structure, as well as to write case reports, reviews, articles, theses and dissertations

# 03 Skills

After passing the assessments on the Professional Master's Degree in Intensive Care Nursing, the nursing professional will have acquired the professional skills required for quality nursing care, and updated based on the latest scientific evidence.







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*Through this program you will be able to update your knowledge of nursing care for patients in nursing services and you will be able to provide quality care to critical patients, based on the latest scientific evidence”*



## General Skills

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- ♦ 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
- ♦ Know how to apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to the area 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 linked to the application of their knowledge and judgments
- ♦ Know how to communicate conclusions, knowledge, and supporting arguments to specialized and non-specialized audiences in a clear and unambiguous way
- ♦ Acquire the learning skills that will enable further studying in a largely self-directed or autonomous manner



## Transversal skills

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- ♦ Develop within the profession in terms of working with other health professionals, acquiring skills to work as a team
- ♦ Recognize the need to maintain your professional skills and keep them up to date, with special emphasis on autonomous and continuous learning of new information
- ♦ Develop the capacity for critical analysis and research in your professional field



*Take advantage of the opportunity and take the step to get up to speed on the latest developments in Intensive Care management"*



## Specific Skills

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- ♦ Provide comprehensive care to the person to solve the health problems that affect them at medical care to patients who and in the immediate future, either, individually or as members of a multidisciplinary team
- ♦ Prioritize situations, resolve problems and make decisions when caring for critical patients in emergency situations
- ♦ Provide adequate technical and professional health care to the critically ill patient, in accordance with the scientific knowledge and technological development of each moment and with the quality and safety levels established in the applicable legal and deontological norms
- ♦ Plan and deliver nursing care to the critically ill patient and their families and caregivers, based on quality standards
- ♦ Incorporate safety principles including ergonomics, proper patient handling and mobilization, and infection control into the work routine
- ♦ Establish effective communication with patients, families and groups served, as well as with the rest of the work team
- ♦ Through your work within a multidisciplinary team, contribute to the process of organ and tissue donation
- ♦ Safely and appropriately manage frequently used medications in the intensive care unit
- ♦ Use rigorously, safely and confidently the diagnostic aids characterized by complex technology
- ♦ Establish an effective therapeutic relationship with patients and their family members to be established. This will help them to cope more effectively with emergency situations
- ♦ Manage scientific databases for carrying out reviews and bibliographic searches of scientific studies
- ♦ Formulate, implement and evaluate standards, action guidelines and protocols specific to Emergency Nursing practice
- ♦ Conduct a critical and in-depth study on a topic of scientific interest in the field of Intensive Care Nursing
- ♦ Communicate result findings after having analyzed, evaluated, and synthesized the data
- ♦ Manage healthcare resources with efficiency and quality criteria
- ♦ Work as part of a team providing expert knowledge in the field of Critical Care
- ♦ Educate users on health issues so that they acquire healthy lifestyles, in order to avoid situations that may compromise their health

04

# Course Management

The creation of the materials has been carried out by a team of expert professionals in Intensive Care Nursing, who carry out their professional activity in leading hospital centers and intensive care units, contributing the experience gained in their jobs throughout their careers to this program.





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*Learn about the latest advances  
in Intensive Care Nursing from  
leading professionals”*

## Guest Director



### Ms. Díez Sáenz, Cristina

- ♦ Head of Critical Care Unit, Gregorio Marañón GUH
- ♦ Head Nurse of the Adult Intensive Care Unit at Gregorio Marañón General University Hospital
- ♦ Nursing Supervisor of the Gregorio Marañón ICU
- ♦ Nurse Assistant in different areas of hospitalization in different health centers and hospitals
- ♦ Participation as a collaborating researcher in the multicenter project "National validation of the scale of satisfaction with nursing care from the perspective of the critically ill patient"

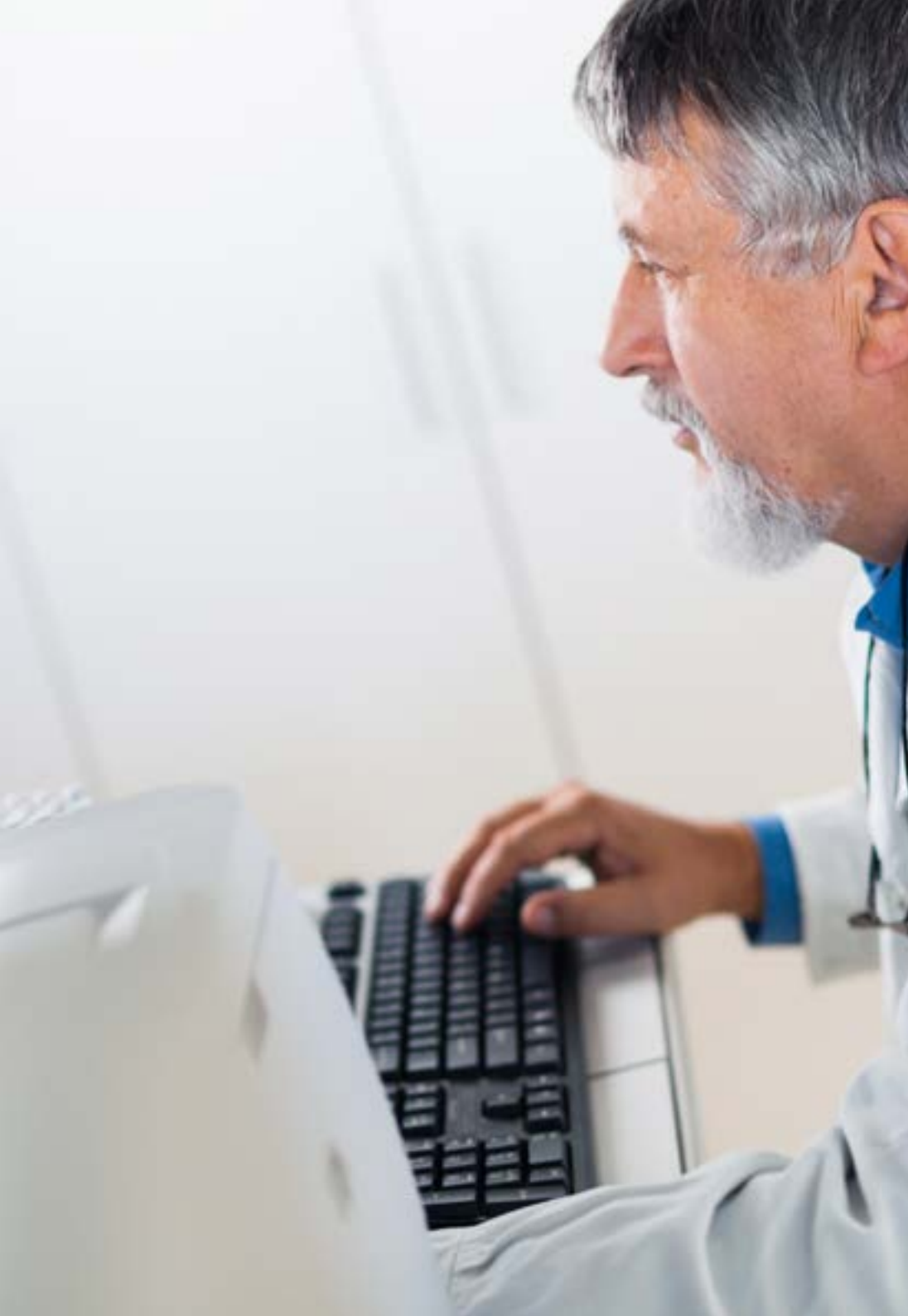
## Management



### Ms. Lospitao Gómez, Sara

- ♦ Intensive Care and Interventional Cardiology Nurse in FUH
- ♦ Intensive Care and Interventional Cardiology at Fuenlabrada University Hospital (FUH)
- ♦ Post-surgical Intensive Care Unit and Cardiac Surgery Nurse at Polytechnic University of Cataluña. 12 de Octubre Hospital
- ♦ Coronary Intensive Care Unit Nurse. 12 de Octubre Hospital
- ♦ Nurse of the Interventional Cardiology Unit (Hemodynamics, EEF and Implants)
- ♦ Responsible for RRSS #TEAyudamos and Member of the group #JuntosxEICáncer
- ♦ Instructor in SVA by the National CPR Plan of the SEMICYUC
- ♦ Member of: Care Sub-Commission (FUH), Care Commission (FUH), Secretary of the Ulcers and Wounds Working Group (FUH)





## Professors

### **Ms. Álvarez Carrascal, Inmaculada**

- ◆ Nurse in ICU, Gregorio Marañón GUH
- ◆ Nurse referent of security in ICU, Gregorio Marañón GUH
- ◆ Critical Care Nurse, Gregorio Marañón GUH
- ◆ Operating Room Instrumentalist Nurse. Churchill Hospital, (Oxford) United Kingdom

### **Mr. González Palacios, Rubén**

- ◆ Critical Care Nurse at Gregorio Marañón GUH
- ◆ Nurse assistant in the Internal Medicine Unit of the Doce de Octubre GUH (Madrid)
- ◆ Nurse assistant in different Primary Care centers in the Community of Madrid
- ◆ Developer of the mobile application "Compatibility drugs" for intravenous drug compatibility
- ◆ Participant in several international congresses

### **Mr. Ruiz-Henestrosa Campos, Manuel Jesús**

- ◆ Attending Nurse at Gregorio Marañón General University Hospital
- ◆ Assistance Nurse Puerta del Mar GUH
- ◆ Head of Emergency Unit at Gregorio Marañón GUH

05

# Structure and Content

The structure of the syllabus has been designed by a team of professionals who are aware of the implications of the training of the nursing professional in the approach to the critical patient, and who are conscious of the current relevance of training, and are committed to quality teaching through new educational technologies.





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*This Professional Master's Degree in Intensive Care Nursing contains the most complete and up-to-date scientific program on the market”*

### Module 1. Organization and Management of an Intensive Care Unit

- 1.1. Historical Review
- 1.2. Features of the Intensive Care Unit. ICU Equipment and Apparatus
- 1.3. Intensive Care Nursing
- 1.4. Professional Secrecy
- 1.5. Intensive Care Nurse Profile. Burnout Syndrome
- 1.6. Intensive Care Unit Nursing Management
- 1.7. Safety Culture
- 1.8. Humanization in the Intensive Care Unit

### Module 2. Evaluation and Monitoring of a Critically Ill Patient

- 2.1. Basic Aspects of Monitoring a Critically Ill Patient
- 2.2. Cardiac and Respiratory Activity
- 2.3. Hemodynamic Status
- 2.4. Neurological Status
- 2.5. Delirium in Intensive Care Units
- 2.6. Monitoring of Sedoanalgesia in Critical Care
- 2.7. Analytical Controls in ICU
- 2.8. Intensive Care Nursing Records
- 2.9. Peripheral Arterial System Examination
- 2.10. Preload Monitoring. Ultrasound

### Module 3. Life Support

- 3.1. General Aspects
- 3.2. Basic Electrocardiography and Arrhythmias
- 3.3. Basic Life Support and AED in Adults
- 3.4. Peripartum Arrhythmia
- 3.5. Airway Management
- 3.6. Advanced Life Support in Adults
- 3.7. Routes of Adminstrating Medication
- 3.8. Resuscitation in Special Cases
- 3.9. Basic Life Support and AED in Children
- 3.10. Recognition and Management of Critically Ill Children
- 3.11. Advanced Airway Management in Pediatrics
- 3.12. Basics of Mechanical Ventilation in Pediatrics
- 3.13. Infusion Routes and Drugs in Pediatric CPR
- 3.14. Pediatric VAS Algorithms and Arrhythmia Treatment
- 3.15. Neonatal Resuscitation
- 3.16. Post-Resuscitation Stabilization and Neonatal Transport

### Module 4. Critical Care in Patients with Cardiocirculatory Disorders

- 4.1. Cardiocirculatory System Anatomy
- 4.2. Cardiocirculatory System Physiology
- 4.3. Heart Failure and Acute Pulmonary Edema
- 4.4. Ischemic Heart Disease
- 4.5. Cardiac Arrhythmias
- 4.6. Cardiogenic Shock
- 4.7. Valvulopathies
- 4.8. Pericarditis
- 4.9. Aneurysm and Aortic Dissection
- 4.10. Hypertensive Emergencies
- 4.11. ECG and Monitoring
- 4.12. Electrical Therapies: Cardioversion and Defibrillation
- 4.13. Fibrinolysis
- 4.14. Percutaneous Coronary Intervention
- 4.15. Aortic Counterpulsation Balloon Pump
- 4.16. Pacemakers



**Module 5. Critical Care in Patients with Respiratory Disorders**

- 5.1. Anatomophysiologic and Physiologic Memory of the Cardiocirculatory System
- 5.2. Acute Respiratory Failure
- 5.3. Adult Respiratory Distress Syndrome
- 5.4. Pulmonary Embolism
- 5.5. COPD Flare-up
- 5.6. Asthmatic Status
- 5.7. Pneumonia and Bronchopneumonia
- 5.8. Neuromuscular Disorders that Affect Respiration
- 5.9. Procedures: Oxygen Therapy
- 5.10. Procedures: Airway Access
- 5.11. Procedures: Aspiration of Tracheobronchial Secretions
- 5.12. Procedures: Thoracocentesis and Chest Drains
- 5.13. Extracorporeal Membrane Oxygenation System (ECMO)
- 5.14. Concept of Mechanical Ventilation. Respirators and Parameters
- 5.15. Mechanical Ventilation Methods
- 5.16. Ventilator Alarms
- 5.17. Nursing Care of Mechanically Ventilated Patients
- 5.18. Removing MV
- 5.19. Non-Invasive Mechanical Ventilation
- 5.20. Mechanical Ventilation in Tracheostomized Patients

**Module 6. Care in Patients with Neurological Disorders**

- 6.1. Anatomophysiologic Review of the Nervous System
- 6.2. Cerebrovascular Disease. Code Stroke
- 6.3. Intracranial Hypertension
- 6.4. Delirium
- 6.5. Guillain-Barré Syndrome
- 6.6. Seizures and Status Convulsus
- 6.7. Meningitis and Lumbar Puncture Practice
- 6.8. Comatose Patient
- 6.9. Pain and Sedoanalgesia
- 6.10. Neurological Evaluation in ICU. Most Common Diagnostic Tests

**Module 7. Digestive and Renal Pathology in the ICU and Other Pathologies**

- 7.1. Gastrointestinal Bleeding
- 7.2. Intestinal Obstruction
- 7.3. Inflammatory bowel disease
- 7.4. Mesenteric Ischemia
- 7.5. Acute Abdomen
- 7.6. Fulminant Hepatic Failure
- 7.7. Albumin-Based Liver Replacement System
- 7.8. Acute Pancreatitis
- 7.9. Intestinal Ostomy Patient: Colostomy
- 7.10. Intestinal Ostomy Patient: Ileostomy
- 7.11. Disseminated Intravascular Coagulation
- 7.12. Multiorgan Failure
- 7.13. Endocrinometabolic Disorders
- 7.14. Acute Renal Failure in the ICU
- 7.15. Urostomy Patient
- 7.16. Critical Care in Poisoning
- 7.17. Critical Care in Digestive Pathologies
- 7.18. Nosocomial Infections in the ICU
- 7.19. Sepsis and Septic Shock
- 7.20. Nursing Care in the Septic Patient

**Module 8. Critical Care for Severe Trauma Patients**

- 8.1. The Critically Ill Burns Patient
- 8.2. The Polytraumatized Patient
- 8.3. Initial Assessment of the Polytraumatized Patient
- 8.4. TBI and Spinal Trauma. Spinal Cord Injury
- 8.5. Thoracic and Abdominal Trauma. Hypovolemic Shock
- 8.6. Trauma to Extremities
- 8.7. Trauma in Special Situations(I)
- 8.8. Trauma in Special Situations (II)

### Module 9. Pharmacology in Intensive Care

- 9.1. Basic Concepts in Pharmacology
- 9.2. Drug Administration Safety
- 9.3. Most Frequently Used Drugs: Analgesia, Sedation and Muscle Relaxants
- 9.4. Most Frequently Used Drugs: Antiarrhythmics, Vasodilators and Inotropes
- 9.5. Most Frequently Used Drugs: Respiratory System and Antibiotics
- 9.6. Drug Administration Precautions: Oral and Enteral, Parenteral, and Transfusion
- 9.7. Drug Administration Precautions: Cytostatics, Epidural, PCA and Insulin Pumps
- 9.8. Formulas and Dosage Calculation
- 9.9. Enteral and Parenteral Nutrition
- 9.10. Pediatric Pharmacology

### Module 10. Pediatric Critical Care

- 10.1. Most Common Disorders in Newborns
- 10.2. Polytraumatized Children
- 10.3. Needs Assessment and Pediatric Rating Scales
- 10.4. Pediatric Assessment Triangle
- 10.5. Airway and Ventilatory Management for Critically Ill Pediatric Patients
- 10.6. Nursing Techniques for Critically Ill Pediatric Patients
- 10.7. Pediatric Postoperative Care
- 10.8. Pediatric Pain
- 10.9. Care for Premature Infants
- 10.10. End of Life Care

### Module 11. Hospital Transport

- 11.1. Intrahospital Transfer of the Critically Ill Patient
- 11.2. Out-of-hospital Transfer and ISOBAR
- 11.3. Intrahospital Neonatal Transport
- 11.4. Ambulance Equipment
- 11.5. Cardiopulmonary Resuscitation Trolleys and Backpacks
- 11.6. Driving and Road Safety
- 11.7. Immobilization and Transfer

### Module 12. Anesthesia and Surgery

- 12.1. Malignant Hyperthermia
  - 12.1.1. Introduction
  - 12.1.2. Pathophysiology
  - 12.1.3. Diagnosis
  - 12.1.4. Diagnostic Tests
  - 12.1.5. Differential Diagnosis
  - 12.1.6. Treatment
  - 12.1.7. ICU Care
  - 12.1.8. Bibliography
- 12.2. Types of Anesthesia
  - 12.2.1. Introduction
  - 12.2.2. Local
  - 12.2.3. Regional Anesthesia
  - 12.2.4. General Anesthesia
  - 12.2.5. Monitoring of Consciousness Using the Bispectral Index Scale (BIS) in Anesthesia
  - 12.2.6. Bibliography
- 12.3. Critical Postoperative Patient
  - 12.3.1. Introduction
  - 12.3.2. The Surgical Process
  - 12.3.3. The Surgical Wound
  - 12.3.4. Wound Healing Process
  - 12.3.5. Complications in the Postoperative Patient
  - 12.3.6. Assessment of the Postoperative Patient on Admission to the ICU
  - 12.3.7. Most frequent Nursing Diagnoses in the Postoperative Patient
  - 12.3.8. General Postoperative Patient Care
  - 12.3.9. Wound Treatment with Vacuum Assisted System. VAC Therapy
  - 12.3.10. Annexes
  - 12.3.11. Bibliography



- 12.4. Cardiac Surgery
  - 12.4.1 Introduction
  - 12.4.2 Nursing care
  - 12.4.3 Acute Postoperative Pain after Cardiac Surgery
  - 12.4.4 Postoperative Complications in Cardiac Surgery
  - 12.4.5 Cardiac Transplantation
  - 12.4.6 Intra-Aortic Balloon Counterpulsation
  - 12.4.7 Bibliography
- 12.5. Critical Care in Transplant Patients
  - 12.5.1 Introduction
  - 12.5.2 Brain Death in ICU
  - 12.5.3 Definition of Brain Death
  - 12.5.4 Asystole Donation
  - 12.5.5 Critical Care in Transplant Patients
  - 12.5.6 Bibliography
- 12.6. Nursing Care in Patients under Anesthesia Crash Cart
  - 12.6.1 Introduction
  - 12.6.2 Multidisciplinary Surgical Teams
  - 12.6.3 Role of Nurses in Anesthesia
  - 12.6.4 Bibliography
- 12.7. Postoperative Complications
  - 12.7.1 Introduction
  - 12.7.2 Causes of Perioperative Complications
  - 12.7.3 Determination of Surgical Risk
  - 12.7.4 Main Risks of Anesthesia
    - 12.7.4.1. Respiratory Risk
    - 12.7.4.2. Risk of Hemorrhage
    - 12.7.4.3. Risk of Allergy
    - 12.7.4.4. Cardiac Risk
    - 12.7.4.5. Risk of Memory of Intraoperative Events
    - 12.7.4.6. Risk of Peripheral Neurological Lesions
    - 12.7.4.7. Risk of Mistaken Identity - Operation Errors
    - 12.7.4.8. Risk of Dosage or Product Errors
    - 12.7.4.9. Risk of Postoperative Blindness
  - 12.7.5 Bibliography
- 12.8. Interventions that May Prevent Perioperative Complications
  - 12.8.1 Interventions that May Prevent Perioperative Complications
    - 12.8.1.1. Perioperative Treatment with Beta-Adrenergic Receptor Antagonists
    - 12.8.1.2. Perioperative Optimization with Fluids and Inotropes
    - 12.8.1.3. Perioperative Respiratory Treatment
    - 12.8.1.4. Postoperative Intensive Care
    - 12.8.1.5. Improved Postoperative Recovery
  - 12.8.2 Main Perioperative Complications
    - 12.8.2.1. Intraoperative Allergic Reactions and Anaphylactic Shock
    - 12.8.2.2. Postoperative Nausea and Vomiting
    - 12.8.2.3. Perioperative Arterial Hypertension
    - 12.8.2.4. Bronchospasm
    - 12.8.2.5. Malignant Hyperthermia
    - 12.8.2.6. Perioperative Acute Kidney Injury
  - 12.8.3 Bibliography
- 12.9. Admission of Patient to the Postoperative Reanimation Unit
  - 12.9.1 Introduction
  - 12.9.2 Specific Objectives
  - 12.9.3 Structure of the Unit
  - 12.9.4 Admission and Care
    - 12.9.4.1. Immediate Postoperative
    - 12.9.4.2. Late Postoperative Period
  - 12.9.5 Monitoring
    - 12.9.5.1. ECG
    - 12.9.5.2. Arterial Pressure
    - 12.9.5.3. Oxygen Saturation
    - 12.9.5.4. Capnography
    - 12.9.5.5. Temperature Monitoring
    - 12.9.5.6. CNS Monitoring
    - 12.9.5.7. Monitoring of Neuromuscular Function
    - 12.9.5.8. Urine Output
  - 12.9.6 Bibliography

- 12.10. Possible Complications in the Post-Anesthesia Care Unit
  - 12.10.1 Introduction
  - 12.10.2 Most Frequent-Surgical Complications
    - 12.10.2.1. Respiratory complications
    - 12.10.2.2. Nursing Outcomes Classification (NOCs) and Nursing Interventions Classification (NICs)
    - 12.10.2.3. Complications of Cardiac Function
    - 12.10.2.4. Complications
  - 12.10.3 Other Complications
  - 12.10.4 Bibliography

### Module 13. Research Methodology in Intensive Care Nursing

- 13.1. Recovery of Quality Information Specializing in Health Sciences
  - 13.1.1 Development of a Bibliographic Search
  - 13.1.2 Knowledge of Different Sources of Information: General Search Engines (Google Scholar, Scopus), Databases (PubMed, Embase, Cinahl) and Clearinghouse of Clinical Practice Guidelines
  - 13.1.3 Design of Search Strategies with Subject Headings (MeSH), Free Language Terms and Boolean Operator Algebra. PICO Questions (Patient, Intervention, Comparison, Outcomes)
  - 13.1.4 Refinement of Search Results: Methodological Filters
  - 13.1.5 Creating Bibliographic Alerts
- 13.2. Bibliographic Reference Management
  - 13.2.1 Introduction
  - 13.2.2 Importing References Directly from Databases (PubMed, CINAHL)
  - 13.2.3 PDF Metadata Extraction
  - 13.2.4 Use of Tags or Metatags to Classify the Bibliography
  - 13.2.5 Including References in the Text (Word). Vancouver Style
  - 13.2.6 Cloud Search Saving



- 13.3. Critical Reading on Outcomes Research
  - 13.3.1 Introduction
  - 13.3.2 Some Basic Concepts in Epidemiology
  - 13.3.3 Quantitative Research Designs (Observational, Quasi-Experimental and Experimental) Data Interpretation and Techniques for Controlling Reliability, Validity and Scientific Accuracy
  - 13.3.4 Qualitative Research Designs and Identification of the Social and Cultural Components of Health and Illness. Individual Results and Populations. Clinical, Economic, and Satisfaction Results
  - 13.3.5 Instruments for Critical Reading: AGREE Instrument
- 13.4. How to Prepare a Research Protocol
  - 13.4.1 Headings that Make Up the Protocol of a Research Project
  - 13.4.2 Writing Articles with Scientific Structure and Publishing Results in High-Impact Journals
  - 13.4.3 Writing a Case Report, Review, Qualitative Research Article, and a Thesis or Dissertation
  - 13.4.4 Style in Scientific Communication
- 13.5. Master's Thesis: Academic Work of Bibliographic Review and Research
  - 13.5.1 The Importance of a Master's Thesis
  - 13.5.2 Proposal and Feasibility of a Master's Thesis
  - 13.5.3 Recommendations for the Preparation of the Master's Thesis
  - 13.5.4 Development and Evaluation of the Master's Thesis
  - 13.5.5 Recommendations for the Defence of the Master's Thesis

“ *A unique, key, and decisive training experience to boost your professional development* ”



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 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.
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.*

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.

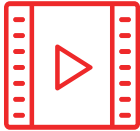
*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and relearn). 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 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".

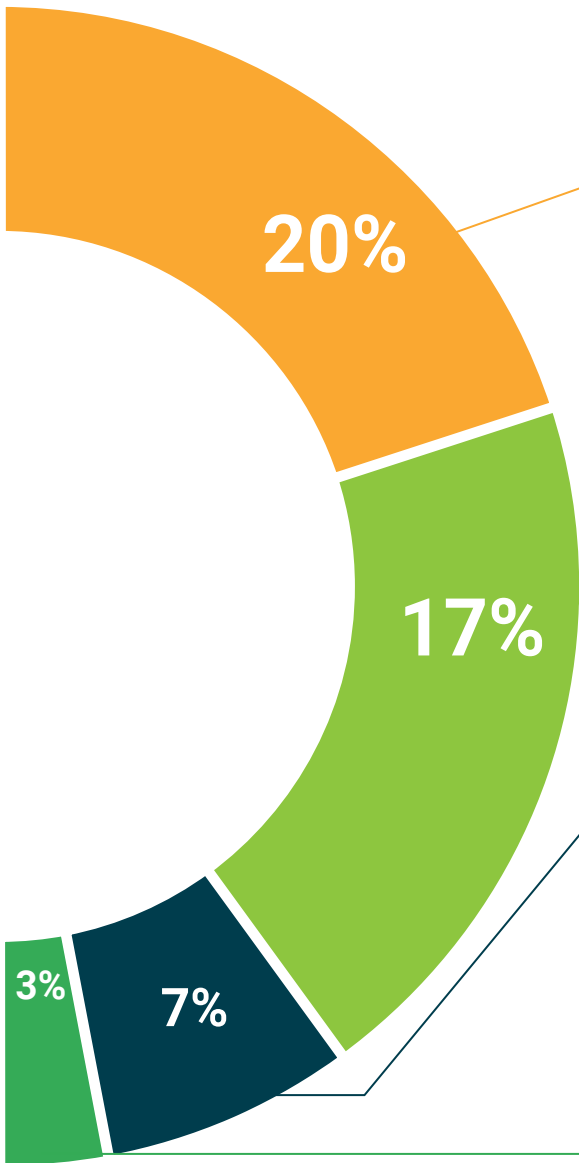


### Additional Reading

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.







#### 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 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.





07

# Certificate

The Professional Master's Degree in Intensive Care Nursing guarantees, in addition to the most rigorous and updated training, access to a Professional Master's Degree issued by TECH Technological University.



“

*Successfully complete this program  
and receive your university degree  
without travel or laborious paperwork”*

.This **Professional Master's Degree in Intensive Care Nursing** contains the most complete and up-to-dated scientific program on the market.

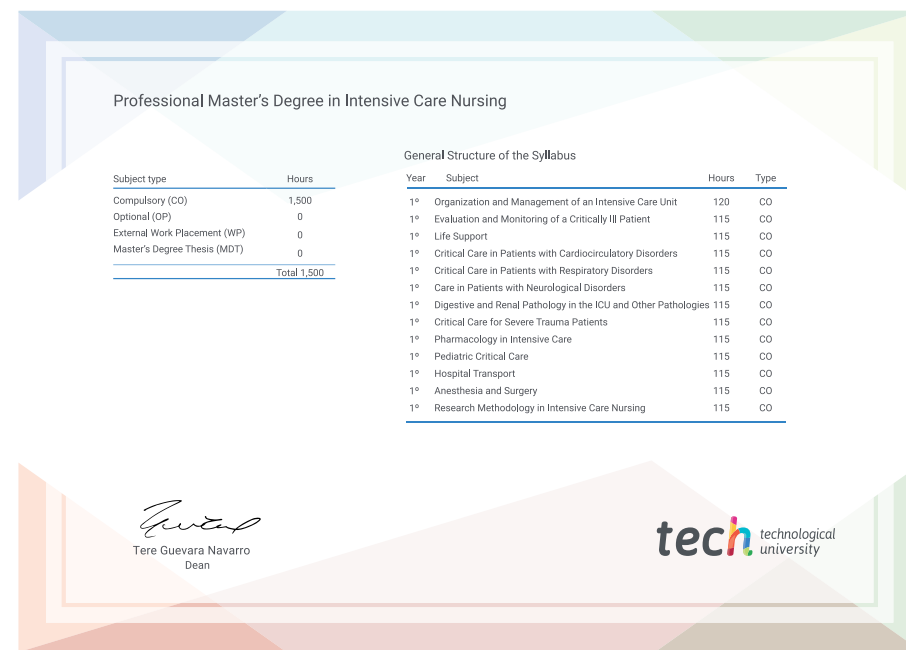
After the student has passed the assessments, they will receive their corresponding **Professional Master's Degree** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Professional Master's Degree in Intensive Care Nursing**

Official N° of hours: **1,500 h.**

Endorsed by: The Spanish Society of Intensive Care Nursing and Coronary Units.



\*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.

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

**tech** technological  
university

personalized service innovation

knowledge present quality

online training

development language

virtual classroom

**Professional Master's  
Degree**

**Intensive Care Nursing**

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Technological University
- » Dedication: 8h/week
- » Schedule: at your own pace
- » Exams: online



# Professional Master's Degree Intensive Care Nursing

Endorsed by:

