Postgraduate Diploma

Neonatal Pharmacology for Nursing

Endorsed by:







Postgraduate Diploma

Neonatal Pharmacology for Nursing

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

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tech 06 | Introduction

Neonatology is a discipline in constant progress, which is highly dependent on technology and new pharmacological treatments. This context makes the updating of care procedures in the neonatal intensive care unit of utmost importance in order to maintain care based on the latest scientific evidence and to ensure the safety of the baby.

This program includes the most relevant topics about the admission of the newborn in neonatology or NICU, knowledge and management in drug administration, principles of drug administration, vascular access in neonatology and pain control and sedation in the newborn. In addition, it places special emphasis on the implementation of measures to improve patient safety in the neonatal unit, providing relevant knowledge about drugs in terms of indications, dosage, preparation, monitoring, side effects and incompatibilities.

The Postgraduate Diploma in Neonatal Pharmacology for Nursing allows, in a practical way, to achieve this update of the most used procedures to contribute with quality and safety to the recovery of neonates, improve their prognosis and avoid the sequelae of severe pathology.

In addition, it will facilitate the incorporation to the labor market in this field, due to the need for nursing professionals trained in the care of the critical newborn in neonatal intensive care units.

This **Postgraduate Diploma in Neonatal Pharmacology for Nursing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Clinical cases presented by experts in the different specialties. 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
- New active ingredients and their administration to the newborn patient in neonatal intensive care units
- Presentation of practical workshops on procedures, nursing care and medication administration techniques
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Practical guides on different pathologies. These guides follow the scientific and pedagogical criteria of the main scientific reference
- 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



Improve the care of your newborn patients with the specialization offered by the Postgraduate Diploma in Neonatal Pharmacology for Nursing"



This Postgraduate Diploma is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge in neonatal pharmacology, you will obtain a qualification from TECH Technological University"

Its teaching staff includes, renowned specialists in the field of neonatology, who bring the experience of their work in the country's leading medical centres to this program.

Thanks to its multimedia content developed with the latest educational technology, they will allow the professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby the nursing professional must try to solve the different professional practice situations that arise throughout the educational program. In order to do this, the nursing professional will be assisted by an innovative interactive video system, created by renowned and experienced experts in treating critical neonatal patients and with extensive teaching experience.

Increase your professional opportunities by studying the Postgraduate Diploma in Neonatal Pharmacology for Nursing.

It includes real clinical cases to bring the development of the program as close as possible to everyday practice.







tech 10 | Objectives



General objectives

- Provide nursing care oriented to satisfying the needs of a newborn with health problems as well as preventing complications, all while guaranteeing safe and quality practice
- Providing comprehensive newborn care from an ethical and legal perspective
- Decide effectively and efficiently the different procedures, diagnostic tests and treatments derived from the different health problems in the newborn taking into account the different levels of care
- Update comprehensive care of the neonate with a surgical process to assist in the optimal restoration of health and to identify, intervene and/or refer for possible complications
- Update the use and indication of medical devices and/or drugs, evaluating the expected benefits and associated risks





Specific objectives

Module 1. Important Aspects of Neonatology

- Categorise neonatal stages, as well as neonatal stages by gestational age and neonatal stages by weight at birth
- Determine the differences which exist in the pediatric age group between a newborn, a child and an adolescent
- Revise the anatomical and physiological characteristics of a normal newborn
- Establish the techniques for measuring the somatometry of a newborn, as well as its morphological and physiological characteristics
- Assess the complete examination, sequence of physical examination and complete physical examination of the newborn, focusing primarily on the head and neck region, trunk region and extremities region
- Describe the process of a complete neurological examination on a newborn
- Evaluate the structure and organization of a Neonatology Service, as well as its location, the necessary equipment and materials; and the necessary human resources
- Acquire up-to-date knowledge of the arrival of a newborn in the neonatal ward, the admission criteria, its objectives and the necessary nursing interventions
- Incorporate new techniques in the physical examination of a newborn on its arrival in the neonatal ward

Module 2. Pharmacology in Neonatology

- Incorporate the basic principles of newborn sedation, anesthetic drugs and sedative/hypnotics into nursing
- Incorporate the principles of drug administration in the Neonatal Unit, as well
 as the use of the different routes: enteral, rectal, intramuscular, subcutaneous
 and intravenous routes, into nursing practice
- Differentiate the specific ways of administering drugs, the necessary equipment and its procedure
- Incorporate the different dosage guidelines applicable to nursing practice
- Gain up-to-date knowledge of the different drug administration routes and their characteristics
- Identify excipients used in neonatal formulations
- Gain up-to-date knowledge of the different therapeutic guidelines applicable to neonatology



Module 3. Principles of Drug Administration and Vascular Access in Neonatology

- Acquire up-to-date knowledge of the necessary techniques for maintaining the line, removal of the line and the occurrence of possible complications
- Determine the precautions and contraindications as well as the appearance of possible complications that can occur with each of the specific ways of administering drugs
- Describe the different techniques to cannulate the umbilical artery or vein in a newborn
- Assess the contraindications and the complications of umbilical cannulation
- Gain up-to-date knowledge of the catheter removal procedure, the precautions which should be taken, its contraindications and complications

Module 4. Pain Management and Sedation in Newborns

- Describe thermal management in the newborn, its thermoregulation and the use of a neutral thermal environment
- Incorporate newborn temperature assessment guidelines into nursing practice
- Implement hypothermia in a newborn with hypoxic-ischaemic encephalopathy as a neuroprotective measure, as well as the neuroprotective mechanisms of action of hypothermia
- Differentiate the indications and contraindications of hypothermia
- Describe the exit criteria once hypothermia has been initiated
- Assess pain control in a newborn as well as the short- and long- term consequences
 of the pain
- Evaluate the different techniques for measuring pain in a newborn
- Predict the onset of withdrawal syndrome in the newborn and how to manage it





Module 5. Admission of a Newborn in the Neonatal Ward or in the NICU

- Determine how to structure a neonatal intensive care unit (NICU), as well as the calculation and arrangement of the cribs, the necessary physical space needed, the necessary equipment and materials; and the necessary human resources
- Identify the profiles and roles of the "nursing team" as well as its operating system: "Primary Nursing"
- Describe the guidelines for drug administration in neonatology
- Establish the criteria and objectives for admission of a newborn to the NICU; as well as the necessary nursing interventions
- Identify and classify the types of neonatal transport, its objectives and its purpose
- Select the necessary team and equipment to provide appropriate neonatal transport
- Acquire up-to-date knowledge of the therapeutic measures for treating pain in newborns, as well as how to manage the pain in some of the procedures in the NICU



Make the most of the opportunity and take the step to get up to date on the latest developments in Neonatal Pharmacology for Nursing"





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Management



Dr. López Ruiz, María Amparo

- University Professor in Nursing, Medicine and Pharmacy of the Department of Biomedical Sciences at CEU Cardenal Herrera University
- Degree in Medicine and Surgery from the University of Valencia
- Doctor of Medicine Cum Laude from the CEU Cardenal Herrera University. Thesis: Analysis of Medication in Pediatric Population
 Who Attend the Emergency Department
- University expert in Neonatology: "Care in the Preterm Newborn."
- Professor of the Online Master's in Emergency Pediatrics for Nursing, CEU Cardenal Herrera University
- Professor of the Master's Degree in Advanced Aesthetic and Laser Techniques at CEU Cardenal Herrera University and NISA Hospitals Foundation
- Postgraduate course coordinator: "First Aid, Cardiopulmonary Resuscitation and Emergency Situations Course". CEU Cardenal Herrera University, Moncada
- Erasmus Coordinator for Medicine at the University CEU Cardenal Herrera
- NESTLÉ Award for Best Oral Communication, XXIV National Congress of the Spanish Society of Outpatient and Primary Care Pediatrics for: "Analysis of the use of Analgesic-Antipyretics in pediatric patients attending an emergency department"



Course Management | 17 tech

Professors

Dr. López Peña, Rafael

- Pediatrician, specialist in PICU and NICU
- Degree in Medicine and Surgery from the University of Valencia
- Doctor of Medicine "Cum Laude" from the University of Valencia
- Postgraduate Diploma in Neonatology

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Ms. Juan Hidalgo, Alicia

- University professor in the Psychology Faculty, University of Valencia
- Degree in Psychology from the University of Valencia
- Clinical Psychology

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- Pediatric Nurse in the NICU and PICU in the Emergency Department of the NISA
 9 de Octubre Hospital (Valencia)
- Diploma in Nursing

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- Degree in Medicine and Surgery from the University of Valencia
- Doctor of Medicine "Cum Laude" from the University of Valencia
- Specialist in Child Neurology
- Postgraduate Diploma in Neonatology

Dr. Navarro Marí, Rosa María

- Pediatrician
- Attending Physician. Pediatrics and PICU-Neonatal Service, NISA
- Degree in Medicine and Surgery from the University of Valencia
- Postgraduate Diploma in Neonatology



Course Management | 19 tech

Ms. Dobón García, Ana María

- Lawyer specializing in Medical and Health Law
- Degree in Law from the University of Valencia

Ms. Silvestre Castelló, Dolores

- Associate Professor of Nutrition and Bromatology at CEU Cardenal Herrera University
- Degree in Chemistry from the University of Valencia
- Doctor of Chemical Sciences "Cum Laude" from the University of Valencia
- Diploma in Food Technology Spanish National Research Council (Consejo Superior Investigaciones Científicas)
- Postgraduate Degree in Nutrition, Dietetics and Diet Therapy, University of Navarra

Mr. Martínez Dolz, Jesús

- Assistant Nurse in Pediatric and Neonatal Intensive Care Units in the city of Valencia in the following centres: Nisa 9 Octubre Hospital, Virgen del Consuelo Hospital, Clinical University Hospital and La Fe Polytechnic and University Hospital
- Degree in Nursing
- Specialist in Neonatal and Pediatric Nursing Care





tech 22 | Structure and Content

Module 1. Important Aspects of Neonatology

- 1.1. Differences between Newborn, Child and Adolescent
- 1.2. Neonatal Stages
 - 1.2.1. Neonatal Stages at Gestational Age
 - 1.2.2. Neonatal Stages for Birthweight
 - 1.2.3. Premature Newborns
 - 1.2.4. Post-Term Newborn
- 1.3. Anatomical and Physiological Characteristics of the Normal Newborn
 - 1.3.1. Newborn Somatometry
 - 1.3.2. Morphological Characteristics
 - 1.3.3. Physiological Characteristics
- 1.4. Complete Physical Examination of the Newborn
 - 1.4.1. Physical Examination Process
 - 1.4.2. General Observation
 - 1.4.3. Head and Neck Region
 - 1.4.4. Torso Region
 - 1.4.5. Limb Region
 - 1.4.6. Neurological Examination
- 1.5. Structure and Organisation of the Neonatal Service
 - 1.5.1. Location of the Neonatology Service
 - 1.5.2. Equipment and Materials
 - 1.5.3. Human Resources
 - 1.5.4. Concept of Neonatal Intensive Care Unit (NICU)
 - 1.4.4.1. Calculation and Layout of Cribs
 - 1.4.4.2. Physical Space in a Neonatal Intensive Care Unit
 - 1.4.4.3. Equipment and Material in a Neonatal Intensive Care Unit
 - 1.4.4.4. Human Resources in a Neonatal Intensive Care Unit
 - 1.4.4.5. Profiles and Roles: "Nursing Team"
 - 1.4.4.6. Operating System Primary Nursing

Module 2. Pharmacology in Neonatology

- 2.1. General Aspects of Neonatal Pharmacology
- 2.2. Modifications in the Reaction of Drugs in Newborns
- 2.3. Pharmacokinetics in Neonatology
 - 2.3.1. Absorption of Drugs
 - 2.3.2. Distribution of Drugs
 - 2.3.3. Binding of Drug to Plasma Proteins According to Development
 - 2.3.4. Metabolism or Biotransformation of Drugs in the Child
 - 2.3.5. Excretion of Drugs in Neonatology
- 2.4. Pharmacodynamics in Neonatology
- 2.5. Dosage Guidelines
 - 2.5.1. Excipients Used in Neonatal Formulations
 - 2.5.2. Therapeutic Guidelines
- 2.6. Drug Interactions
 - 2.6.1. Types of Pharmacological Interactions
 - 2.6.2. Interaction Risk Prevention
- 2.7. Use of Drugs in Neonatology

Module 3. Principles of Drug Administration and Vascular Access in Neonatology

- 3.1. Principles of Drug Administration in the NICU
 - 3.1.1. Enteral Route
 - 3.1.2. Rectal Route
 - 3.1.3. Intramuscular Route
 - 3.1.4. Subcutaneous Route
 - 3.1.5. Intravenous Route
- 3.2. Specific Ways to Administer Drugs I: Rapid Intravenous Route
- 3.3. Specific Ways to Administer Drugs II: Intravenous Route with a Specific Infusion
- 3.4. Specific Ways to Administer Drugs III: Continuous Intravenous Route

- 3.5. Specific Ways of Administering Drugs IV: Peripheral Venous Route
 - 3.5.1. Necessary Equipment
 - 3.5.2. Procedure
 - 3.5.3. Maintaining the Line
 - 3.5.4. Removing the Line
 - 3.5.5. Possible Complications that Could Arise
- 3.6. Specific Ways of Administering Drugs V: Percutaneous Venous Route
 - 3.6.1. Indications
 - 3.6.2. Necessary Equipment
 - 3.6.3. Procedure
 - 3.6.4. Precautions
 - 3.6.5. Contraindications
 - 3.6.6. Complications
- 3.7. Specific Ways to Administer Drugs VI: Cannulation of the Umbilical Artery and Vein
 - 3.7.1. Indications
 - 3.7.2. Necessary Equipment
 - 3.7.3. Preparation
 - 3.7.4. Common Procedure for the Umbilical Artery and Umbilical Vein
 - 3.7.5. Contraindications
 - 3.7.6. Complications
- 3.8. Specific Ways to Administer Drugs VII: Cannulation of the Peripheral Artery
 - 3.8.1. Indications
 - 3.8.2. Necessary Equipment
 - 3.8.3. Procedure
 - 3.8.4. Extraction of a Catheter
 - 3.8.5. Precautions
 - 3.8.6. Contraindications
 - 3.8.7. Complications

Module 4. Pain Management and Sedation in Newborns

- 4.1. Pain Management in Newborns
 - 4.1.1. Physiology of Pain in Newborns
 - 4.1.2. Short and Long-Term Consequences of Pain
 - 4.1.3. Measurement of Pain in Newborns
 - 4.1.4. Treatment of Pain in Newborns
 - 4.1.5. Pain Management in Some Common Procedures in the NICU
- 4.2. Sedation of a Newborn
 - 4.2.1. Anesthetic Drugs
 - 4.2.2. Hypnotic/ Sedative Drugs
 - 4.2.3. Withdrawal Syndrome in Newborns

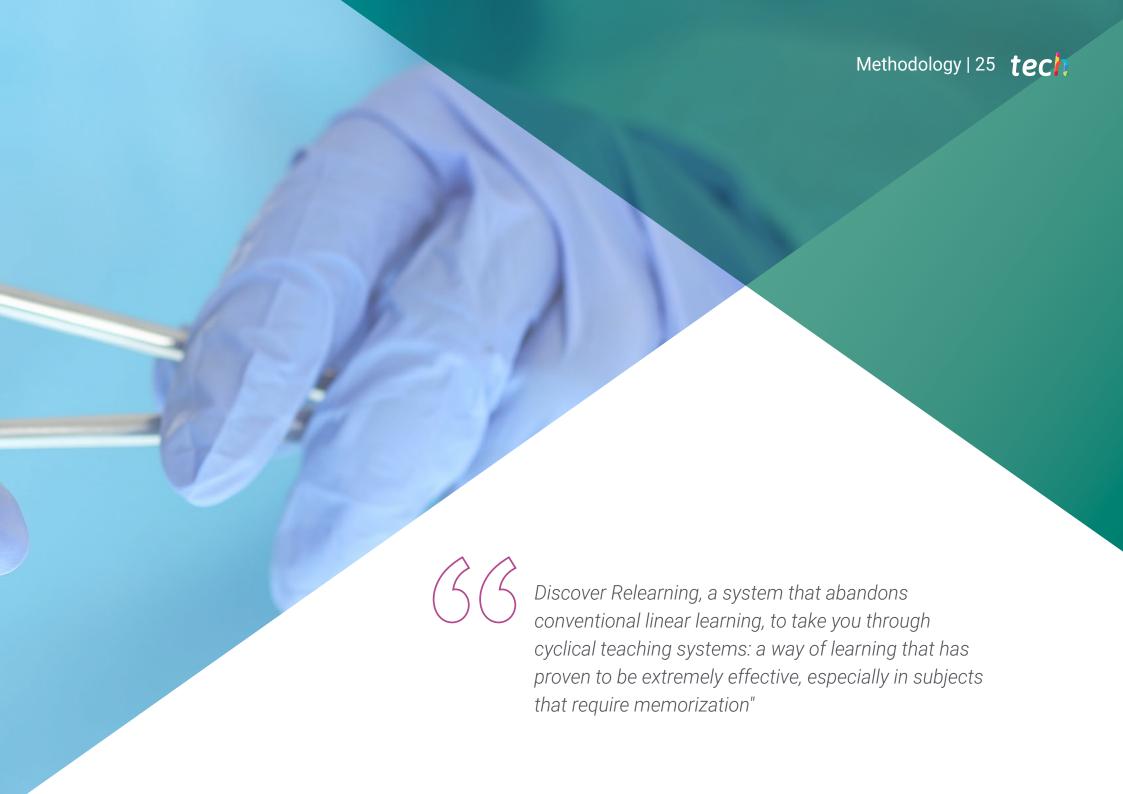
Module 5. Admission of a Newborn in the Neonatal Ward or in the NICU

- 5.1. Arrival of the Newborn (NB) in the Neonatal Ward
 - 5.1.1. Admission Criteria
 - 5.1.2. Admission Objectives
 - 5.1.3. Nursing Interventions
 - 5.1.4. Physical Examination of the Newborn
- 5.2. Arrival of the Newborn (NB) in the NICU
 - 5.2.1. Admission Criteria
 - 5.2.2. Admission Objectives
 - 5.2.3. Nursing Interventions
 - 5.2.4. Physical Examination of the Newborn
- 5.3. Neonatal Transport
 - 5.3.1. Transfer of the Pregnant Woman
 - 5.3.2 Neonatal Transfer
 - 5.3.3. Neonatal Transport Team
 - 5.3.4. Neonatal Transport Equipment



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.



tech 26 | 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 | 29 tech

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology 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

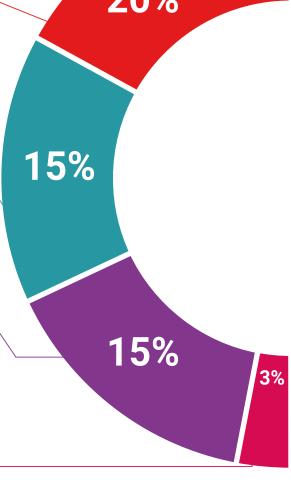
We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch them as many times as you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

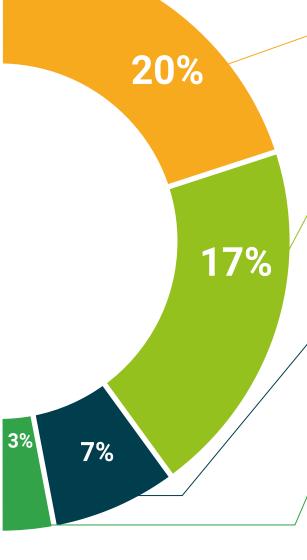
There is scientific evidence suggesting that observing third-party experts can be useful.

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.







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This **Postgraduate Diploma in Neonatal Pharmacology for Nursing** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma**, issued by **TECH Technological University** via tracked delivery*.

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

Title: Postgraduate Diploma in Neonatal Pharmacology for Nursing Official N° of hours: 400 h.

Endorsed by: 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.

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institutions technology learning



Postgraduate Diploma

Neonatal Pharmacology for Nursing

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



Neonatal Pharmacology

