

Postgraduate Diploma

New Technologies in the Emergency Department





Postgraduate Diploma New Technologies in the Emergency Department

Course Modality: **Online**

Duration: **6 months**

Certificate: **TECH Technological University**

Official N° of Hours: **600 h.**

Website: www.techtute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-new-technologies-emergency-department

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 20

06

Certificate

p. 28

01

Introduction

New technologies have invaded almost all fields of medicine because their use can better respond to patient needs. In this sense, one of the specialties that has benefited the most from them is emergency medicine, as they have improved care services and offer greater efficiency. Fully aware of this, this program will delve into the medical use of new technologies, computer applications and artificial intelligence in urgent care and emergency services, and their involvement and integration in the various processes of patient and family care. The compilation of knowledge will turn students into much more competent physicians, prepared to take action in different situations.





“

Immerse yourself in this program, which will allow you to acquire the necessary knowledge to take advantage of the benefits of new technologies in the daily practice of your profession as an emergency physician”

The pandemic highlighted the need for Emergency Departments to be highly prepared to deal with delicate and high-pressure situations. It goes without saying that technological advances in recent years are continually transforming the way these services are managed, so specialists in this area cannot ignore the possibilities that new technologies offer to meet current challenges.

This is precisely what motivated the creation of this Postgraduate Diploma in New Technologies in the Emergency Department, which was created with the aim of updating emergency physicians in the current organizational needs these services present. To that end, the use of new technologies as a means to meet these needs and offer a much more efficient service will be studied in depth.

Specialists will find extensive content modules ranging from biosafety and clinical research, to the use of ultrasound in the ED or new technologies for triage and disaster or pandemic situations. All this supported by a considerable amount of audiovisual material, which reinforces the theory and provides a unique practical context by also covering real and simulated cases in each topic.

It should be noted that this is a 100% online program, so students do not have to commute or adhere to fixed schedules. On the contrary, program is totally flexible, so students only need a computer or mobile device with an Internet connection to be able to take this Postgraduate Certificate at their own accord, so they can satisfactorily balance it with the rest of their daily obligations.

This **Postgraduate Diploma in New Technologies in the Emergency Department** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ Numerous practical cases presented in the form of *In Focus* videos and clinical videos made by experts in Emergency Medicine
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical activity presentations on procedures and techniques
- ◆ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- ◆ Action protocols and clinical practice guidelines, which cover the most important latest developments in this specialist area
- ◆ All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Its special emphasis on evidence-based medicine and research methodologies in dealing with patients requiring Emergency services
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



Only with adequate education will you learn the best way to treat your patients in urgent care or the emergency room"

“

This Postgraduate Diploma is undoubtedly the best investment in education you can make, because it will allow you to grow within your profession while continuing to carry out the rest of your activities”

The program’s teaching staff includes medical professionals that bring their experience to this training program, as well as renowned specialists from leading scientific communities and prestigious universities.

Its 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 education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For that purpose, students will be assisted by an innovative, interactive video system created by renowned and extensively experienced experts in nutritional counseling in the healthy population.

This education allows you to learn through simulated environments which provide immersive learning programmed to train for real situations.

With this Postgraduate Diploma, you will learn to understand and put into practice the utilities of new technologies at the service of emergency departments.



02 Objectives

TECH's main objective is clear: to specialize the most competent professionals in the medical field and, therefore, the most sought-after. To do so, it makes use of a very complete content bank designed in multimedia formats and adapted to the needs of 2.0 students. Likewise, TECH assures students that, by training here, they will have access to the most reputable professionals in the field, who pour their years of practical experience into this specialization program. In short, the perfect union of professionals, syllabus and content, make it possible for this University to optimally educate the best physicians in the area.





“

With this program, you will not only update your knowledge in the field of emergency medicine, but you will also acquire new skills that will make you a much more valuable professional”



General Objectives

- ◆ Know how to implement new technologies as diagnostic methods and work with different types of patients
- ◆ Provide an optimal response to specific needs patients thanks to the new systems available in the Emergency Department



Specific Objectives

Module 1. Current Challenges in Modern Emergency Department Management

- ◆ Understand the general aspects of emergency department management and its evolution as a response to health care needs
- ◆ Develop specific aspects of emergency department organization in pandemic situations
- ◆ Acquire tools for the development of fundamental aspects of an emergency department: assistance, research and teaching
- ◆ Define general aspects of the inter-service relationship in emergency patient care and integrating the emergency department with the rest of the hospital
- ◆ Define and recognize the importance of quality of care in the emergency department, its objectives and indicators
- ◆ Define and recognize the importance of patient safety as a guide for all healthcare actions and develop guiding protocols Acquire knowledge for the development of multidisciplinary groups in patient safety in the emergency department
- ◆ Understand the humanization of health processes in the emergency department
- ◆ Gain deeper knowledge of the protocols and attention given in gender violence cases
- ◆ Deepen general knowledge and practical tools in biosafety
- ◆ Review medical-legal and bioethical aspects of emergency care

Module 2. New Technologies in Emergency Services

- ◆ Acquire general knowledge of new technologies and artificial intelligence
- ◆ Know the potential scenarios for the application of new technologies in the emergency department: catastrophes and pandemic situations
- ◆ Gain deeper knowledge of the tools for adequate diagnostic tests in the emergency department
- ◆ Use new technologies in the emergency department
- ◆ Use new technologies to process patient information in the emergency department

Module 3. Emergency Ultrasound

- ◆ Review general aspects of clinical ultrasound in the emergency department
- ◆ Gain a deeper understanding of the tools for clinical ultrasound in acute abdominal pain in the emergency department
- ◆ Master the tools for clinical ultrasound in patients with acute renal failure and urological manifestations in the emergency department
- ◆ Expand the tools for clinical ultrasound in chest pain and other cardiovascular symptoms in the emergency department
- ◆ Learn the uses of clinical ultrasound in patients with acute dyspnea of uncertain origin in the emergency department
- ◆ Expand the tools for clinical ultrasound in patients with pain and increased volume of the lower limb in the emergency department
- ◆ Expand the tools for clinical ultrasound in patients with fever of unknown origin in the emergency department
- ◆ Establish the tools for clinical ultrasound in patients with hypotension and shock in the emergency department
- ◆ Know the tools for clinical ultrasound in acute cardiorespiratory arrest in the emergency department
- ◆ Recognize the tools for clinical ultrasound in polytraumatized patients in the emergency department
- ◆ Increase the tools for clinical ultrasound in ultrasound-guided procedures: central and peripheral venous access, arterial puncture, pericardiocentesis, paracentesis, thoracentesis, lumbar puncture in the emergency department

Module 4. Clinical Simulation in Emergencies

- ◆ Obtain basic knowledge about simulation as a tool for learning and safety in the emergency department
- ◆ Know the tools to develop simulation scenarios in relation to emergency pathologies
- ◆ Review and acquire leadership tools in the emergency department
- ◆ Delve into the tools necessary for teamwork development
- ◆ Obtain the skills to correctly give Briefings and Debriefings



If your objective is to give a boost to your profession, don't think twice and enroll in our Postgraduate Diploma. It's the most complete on the market"

03

Course Management

The design and creation of the theoretical and multimedia materials has been carried out by a team of leading professionals in the area of emergency medicine, who carry out their professional activity in the main hospitals in the country. They will be in charge of delivering the specialization, transferring all their practical experience, so students can efficiently attend to the needs of their patients in the Emergency department and, therefore, turn them into much more competent physicians.



“

Learn about the latest technological advances in emergency medicine from leading professionals”

Management



Dr. Torres Santos-Olmo, Rosario María

- ◆ Area Specialist in the Adult Emergency Department at La Paz Hospital, Madrid
- ◆ Degree in Medicine and Surgery
- ◆ PhD in Medicine and Surgery
- ◆ Specialist in Family and Community Medicine
- ◆ Master's Degree in Palliative Care and Supportive Neoplastic Patients Care
- ◆ Life Support Instructor (BLS, ALS, ILS, ATLS)
- ◆ Master's Degree in Palliative Care and Supportive Neoplastic Patient Care
- ◆ Master's Degree in Patient Safety and Health Risk Management
- ◆ Clinical Collaborator at the Autonomous University of Madrid



Dr. Rivera Núñez, María Angélica

- ◆ Assistant Coordinator in the Emergency Department at La Paz University Hospital, Madrid
- ◆ Surgeon at Universidad de Chile, Santiago de Chile
- ◆ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ◆ Specialist in Internal Medicine from the Catholic Pontificia University, Chile
- ◆ Certificate in Emergency Medicine
- ◆ Specialist Physician in Emergency Medicine at La Paz University Hospital, Madrid

Professors

Dr. Calvin García, Elena

- ◆ HULP Emergency Department Attending Physician
- ◆ Degree in Medicine
- ◆ Specialist in Family and Community Medicine
- ◆ Master's Degree in Emergency Medicine, Complutense University, Madrid
- ◆ Clinical Reference in Emergency Services HULP

Dr. Cancelliere, Nataly

- ◆ HULP Emergency Department Specialist in
- ◆ Doctorate in Medicine from the Autonomous University Madrid
- ◆ Specialist in Ophthalmology at University Hospital La Paz
- ◆ Master's Degree in Emergency Medicine, SEMES

Dr. González Viñolis, Manuel

- ◆ HULP Emergency Department Attendant
- ◆ Degree in Medicine and Surgery from La Laguna University
- ◆ Master's Degree in Clinical Unit Management from the University of Murcia

Dr. Martínez Zarza, Ana María

- ◆ Quality and Teaching Coordinator in the HULP Emergency Department
- ◆ Graduate in Medicine and Surgery from the University of Valladolid
- ◆ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ◆ Master's Degree in Medical and Clinical Management from the National University of Distance Education, Spain
- ◆ Medical - Surgical Emergencies Expert
- ◆ HULP Emergency Department Attending Physician

Dr. Maroun Eid, Charbel

- ◆ Attending Emergency Physician at HULP
- ◆ Degree in Medicine and Surgery from Gallegos Rómulo University
- ◆ Master's Degree in Cardiovascular Risk Prevention from Alcalá University

Dr. Martín Quirós, Alejandro

- ◆ HULP Emergency Department Attending Physician
- ◆ Degree in Medicine and Surgery from the University of Cadiz
- ◆ PhD from Universidad Autónoma de Madrid within the Program in Medicine

Dr. Mayayo Alvira, Rosa

- ◆ Head of the Toxicology Unit in the HULP Emergency Department
- ◆ Degree in Medicine from Rovira i Virgili University
- ◆ HULP Emergency Department Attending Physician

Mr. Rubio Bolivar, Javier

- ◆ HULP Simulation Technician
- ◆ CEASEC Simulation Technician

04

Structure and Content

The structure of the curriculum has been specially designed by a team of medical professionals, who are fully aware of the importance of university studies in hospital and out-of-hospital emergencies, especially in the area of New Technologies. This team, aware of the relevance and timeliness of specialization, and committed to quality teaching through the use of innovative formats, has created this academic program especially designed for physicians to learn to successfully manage the needs of emergency department patients.



“

A comprehensive teaching program, structured in well-developed teaching units, oriented towards efficient and swift learning that is compatible with your personal and professional life"

Module 1. Current Challenges in Modern Emergency Department Management

- 1.1. Basic Advanced Concepts in Emergency Medicine
 - 1.1.1. Management Challenges in Times of Pandemics
 - 1.1.2. Quality Challenges in the Emergency Department
 - 1.1.2.1. Quality Care in the Emergency Department Indicators
 - 1.1.3. Patient Safety Challenges in the Emergency Department
 - 1.1.3.1. Clinical Safety in the Emergency Department Indicators
 - 1.1.4. Biosafety in Emergency Medicine and Emergency Care
 - 1.1.5. Integrating the Emergency Department into the Rest of the Hospital
 - 1.1.6. Urgent Care Services and the Problem of Gender Violence
 - 1.1.7. Clinical Research in the Emergency Department: Is It Possible?
 - 1.1.8. Teaching in the Emergency Department: Beyond Assistance
 - 1.1.9. Humanizing Management in Emergency Departments

Module 2. New Technologies in Emergency Services

- 2.1. New Technologies in the Emergency Department
 - 2.1.1. Computer Applications at the Service of the Emergency Physician
 - 2.1.2. New Triage Systems in Emergencies
 - 2.1.3. Artificial Intelligence at the Service of the Emergency Physician
 - 2.1.4. New Technologies in Disaster Situations
 - 2.1.5. New Technologies in Pandemic Situations
 - 2.1.6. New Systems for Diagnostic Test Adequacy in Emergency Departments
 - 2.1.7. Integrating Technology into Patient and Family Lack of Specialization
 - 2.1.8. Bringing Patients Closer to the Emergency Department through Technology





Module 3. Emergency Ultrasound

- 3.1. Introduction Clinical Ultrasound Indications and Limitations in the Emergency Department
 - 3.1.1. Clinical Ultrasound Utility in Different Acute Abdominal Pain Manifestations
 - 3.1.2. Clinical Ultrasound in Acute Renal Failure and Urological Manifestations
 - 3.1.3. Clinical Ultrasound in Chest Pain and Other Cardiovascular Symptoms (Syncope, Murmur, Electrocardiographic Alterations)
 - 3.1.4. Clinical Ultrasound in Patients with Dyspnea of Uncertain Origin
 - 3.1.5. Clinical Ultrasound in Patient with Edema or Pain in the Lower Limb
 - 3.1.6. Clinical Ultrasound in Patients with Fever of Uncertain Origin
 - 3.1.7. Clinical Ultrasound in Hypotension and Undifferentiated Shock
 - 3.1.8. Ultrasound in Cardiac Arrest
 - 3.1.9. Ultrasound in Patients with Polytrauma
 - 3.1.10. Echoguided Procedures: Central and Peripheral Venous Access, Arterial Puncture, Pericardiocentesis, Paracentesis, Thoracocentesis, Lumbar Puncture

Module 4. Clinical Simulation in Emergencies

- 4.1. Basic Principles in Clinical Simulation
 - 4.1.1. Types of Clinical Simulation
 - 4.1.2. The Importance of Communication in Clinical Simulation
 - 4.1.3. Types of Simulators
 - 4.1.4. Briefing y Debriefing
 - 4.1.5. Leadership, Teamwork and Role Distribution
 - 4.1.6. Types of Evaluations in Clinical Simulation
 - 4.1.7. Scenario Preparation



A unique, key, and decisive master's degree experience to boost your professional development"

05

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





“

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

“

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”

The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

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



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

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Surgical Techniques and Procedures on Video

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



Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

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



06 Certificate

The Postgraduate Diploma in New Technologies in the Emergency Department guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



“

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

This **Postgraduate Diploma in New Technologies in the Emergency Department** 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 New Technologies in the Emergency Department**
Official N° of Hours: **600 h.**



*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
personalized service innovation
knowledge present quality
development language
virtual classroom



Postgraduate Diploma
New Technologies in the
Emergency Department

Course Modality: Online

Duration: 6 months

Certificate: TECH Technological University

Official N° of Hours: 600 h.

Postgraduate Diploma

New Technologies in the Emergency Department

