

Postgraduate Certificate

Advanced Monitoring in the Critical Ill Patient





Postgraduate Certificate Advanced Monitoring in the Critical Ill Patient

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/postgraduate-certificate/advanced-monitoring-critical-patient

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01

Introduction

Monitoring is one of the key elements that marked the beginning of Intensive Care Medicine as a specialty. In turn, it is the tool that has had the greatest impact on reducing mortality in critically ill patients throughout history. This is because it offers physicians the opportunity to monitor vital signs, such as heart rate, oxygen saturation or blood pressure, in real time. However, there are a number of hospital facilities that lack sufficient knowledge of these techniques. To help them, TECH has developed an advanced 100% online program, which will provide the keys to the management of the most modern monitoring systems.



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You will master the most effective techniques to monitor the ventilatory mechanics of your patients”

The advance of technologies has had an important impact on the healthcare field. For example, Artificial Intelligence is playing an increasingly important role in patient monitoring, analyzing large amounts of data and making decisions based on patterns. Among the advantages offered by this combination of algorithms is the early detection of anomalies in users. In this way, relevant aspects such as blood glucose, body temperature and pulse oximetry can be monitored. However, keeping up to date with this advance is a challenge for specialists.

In order for these experts to master Artificial Intelligence, TECH has implemented a Postgraduate Certificate that will provide them with the guidelines for its correct application in surveillance machinery. Designed by a renowned teaching staff, the syllabus will analyze in detail the predictive systems for critical patient cases.

Likewise, the physicians will address multimodal neuromonitoring, to provide a complete vision of brain function. They will also delve into electrical monitoring devices, such as electrocardiography or polysomnography. In this way, graduates will incorporate the most cutting-edge technologies into their professional practice, guaranteeing the wellbeing of users.

The academic itinerary has a 100% online methodology, so that students can enter the program comfortably. In this way, they will only need an electronic device with Internet access to expand their knowledge and become a true expert in Advanced Monitoring in the Critical Ill Patient. The program will offer the most avant-garde methodology on the market today: *Relearning*. This teaching system is based on the reiteration of the most important contents, guaranteeing a natural learning process capable of lasting in the memory.

This **Postgraduate Certificate in Advanced Monitoring in the Critical Ill Patient** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Practical cases presented by experts in Advanced Monitoring in the Critical Ill 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
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



This program will bring you closer to the next challenges of the healthcare professional in Tissue Perfusion"

“

Are you looking to effectively manage the most advanced hemodynamic monitoring systems? Achieve your goals thanks to this unique program"

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will thoroughly analyze the pathophysiological basis of homeostasis in critically ill patients.

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



02 Objectives

This academic pathway will provide students with a broad understanding of the impact of Critical Ill Patient Monitoring on mortality. Graduates will thus be able to develop indications that anticipate adverse effects, thanks to the use of Artificial Intelligence. In addition, they will master the most advanced tools for multimodal monitoring and sedation.



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After this 6-week program, you will have the necessary tools to boost your professional career”



General Objectives

- ♦ Analyze the pathophysiological bases that establish the foundations of monitoring in the critically ill patient
- ♦ Examine the impact of monitoring in the critically ill patient on mortality and morbidity
- ♦ Develop the principles and indications of monitoring
- ♦ Establish the conceptual basis of monitoring

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Thanks to the Relearning methodology, you will have a flexible and effective learning experience"





Specific Objectives

- ♦ Analyze the indications, implementation and interpretation of results in relation to neuromonitoring, hemodynamic monitoring and monitoring of gas exchange and ventilatory mechanics
- ♦ Examine the indications, set-up and interpretation of results in relation to renal function and homeostasis and control of the internal milieu
- ♦ Study and analyze the indications, set-up and interpretation of results in relation to sedation monitoring and multimodal monitoring
- ♦ Analyze the use of AI in monitoring the critically ill patient and in the anticipation of adverse effects

03

Course Management

With the purpose of offering an elite education for all, TECH is formed by a renowned team. The teaching staff has an extensive professional background, which has led them to work in prestigious institutions in the health sector. As a result, this Postgraduate Certificate offers the most updated and complete resources in the academic market. In this way, graduates will broaden both their knowledge and their competencies, thanks to a highly qualified teaching staff.

A close-up photograph of a person's nose with a clear nasal cannula inserted. The background is blurred, showing what appears to be a control panel with several brightly lit buttons in shades of green and yellow. The image is partially obscured by a dark blue diagonal overlay on the right side of the page.

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A specialized teaching team will pour their extensive knowledge in the field of Advanced Monitoring into this Postgraduate Certificate"

International Guest Director

Awarded for his multiple clinical contributions in the management of Headaches and Sleep Disorders, Dr. Joshua Marc Kosowsky has become a prestigious Physician characterized by his multidisciplinary approach. In this regard, he has developed his professional work in health institutions of international reference, where the Women's Hospital Emergency Room in the United States stands out.

Among his main contributions, he has contributed to the optimal recovery of multiple patients suffering from critical conditions such as Obstructive Sleep Apnea, Migraines or Circadian Rhythm Disorders. Likewise, he has been in charge of promoting the development of clinical treatment guidelines for the effective approach to Headache, Restless Legs Syndrome and Narcolepsy.

On the other hand, he balances this work with his facet as a Clinical Researcher. In fact, he has published several books for the medical community on areas such as Cardiovascular Emergencies. In this sense, he also has a wide production of specialized articles on subjects such as the analysis of Ischemic Cardiac Symptoms, cutting-edge therapies to alleviate Neuropathic Pain and therapeutic innovations for people with Insomnia. His work has helped to significantly advance the understanding and treatment of these complex pathologies, greatly benefiting both users and specialists.

Firmly committed to clinical excellence, he has participated as a speaker in renowned Conferences, Symposia and Workshops on a global scale. In this way, he has shared his solid knowledge of the most sophisticated treatments for the management of Cranial Discomfort. In tune with this, he has also served as a keynote speaker at various Medical Seminars, where he has offered a detailed insight into the latest advances in booming fields such as Neurology. As such, he has increased public awareness regarding Neurological Diseases and reduced stigmas that lead to misperceptions.



Dr. Joshua, Marc Kosowsky

- Clinical Director at Brigham and Women's Hospital Emergency Room in Boston, United States
- Director of Patient Experience and Provider Engagement at Brigham and Women's Hospital Emergency Room
- Director of the Headache Center at Massachusetts General Hospital
- Director of Clinical Training at Harvard Medical School in Boston
- Clinical Consultant at Guidepoint Global in New York, United States
- Clinical Consultant at Gerson Lehrman Group in New York
- Medical Trainer at Huron Consulting Group in Illinois, United States
- Medical Trainer at Studer Group in Gulf Breeze, Florida, United States
- Residency in Emergency Medicine at the University of Cincinnati College of Medicine
- M.D. from Harvard Medical School Bachelor of Science in Medical Sciences from Harvard Medical School
- Member of:
 - American Headache Society
 - American Society of Sleep Medicine

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Thanks to TECH, you will be able to learn with the best professionals in the world”

Management



Dr. Antonio Cardenas Cruz

- ♦ Head of the Intensive Care Medicine Department, Motril Hospital
- ♦ Director of the Clinical Unit of Critical Care and Emergency Management of the Poniente University Hospital
- ♦ Institute Director of Continuing Education of the Andalusian Society of Intensive Care Medicine and Coronary Universities
- ♦ Training Program Director for Life Support Trainers of the IAVANTE Line of the Progreso y Salud Foundation of the Consejería de Salud y Consumo de la Junta de Andalucía (Andalusian Regional Government)
- ♦ Training Program Director for Sedation the IAVANTE Line of the Progreso y Salud Foundation of the Consejería de Salud y Consumo de la Junta de Andalucía (Andalusian Regional Government)
- ♦ Chief of Critical Care and Emergency Department, Poniente University Hospital
Professor of Medicine
- ♦ Degree in Medicine and Surgery from the UGR
- ♦ PhD in Medicine and Surgery, UGR
- ♦ Specialist in Intensive Care Medicine



Professors

Dr. Fernández Florido, Pedro

- ◆ Specialist in Intensive Care Medicine at the Virgen de las Nieves University Hospital
- ◆ Specialist in Neurology and Severe Trauma in Intensive Care Medicine
- ◆ Specialist in Current Management of Infectious Pathology and Transplantation in Intensive Care Medicine
- ◆ Professional Master's Degree in Intensive Care Medicine by CEU Cardenal Herrera University
- ◆ Graduate in Medicine from the University of Granada

Dr. Rodríguez Fernández de Simón, Teresa

- ◆ Intensive Care Medicine Physician at the Virgen de las Nieves University Hospital
- ◆ Specialist in Internal Medicine at the Virgen de las Nieves University Hospital
- ◆ Speaker at the Clinical Course on Basic and Advanced CPR
- ◆ Degree in Medicine from the Autonomous University of Barcelona
- ◆ Course on Severe Trauma Care organized by ICU - HUVN
- ◆ Course on Optimization of Antimicrobials in Critically Ill Patients
- ◆ Course CiMir2 of the Spanish Society of Intensive Care Medicine, Critical Care and Coronary Units
- ◆ Ventilung Course
- ◆ Course on Fundamentals in Limitation of Life Support Treatment and the Donation Process in Encephalic Death and Asystole

04

Structure and Content

The present syllabus will be dedicated to the basic and advanced principles of monitoring in critical ill patients. Therefore, the syllabus will delve into the pathophysiological basis of homeostasis in these users. Likewise, the didactic materials will allow students to implement techniques for the control of renal function and homeostasis. Likewise, it will provide the keys for the approach to monitoring systems of gas exchange and ventilatory mechanics.



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You will delve into the pathophysiological bases of Critical Ill Patients in the best digital university in the world, according to Forbes"

Module 1. Advanced Monitoring in the Critical Ill Patient

- 1.1. Monitoring in the Critically Ill Patient
 - 1.1.1. Epidemiology: Impact of Monitoring on the Prognosis of the Critically Ill Patient
 - 1.1.2. Physiological Basis
 - 1.1.3. Pathophysiological Bases
- 1.2. Neuromonitoring
 - 1.2.1. Indications
 - 1.2.2. Neuromonitoring Systems
 - 1.2.3. Multimodal Neuromonitoring
- 1.3. Electrical and Hemodynamic Monitoring
 - 1.3.1. Indications for Monitoring
 - 1.3.2. Electrical Monitoring Systems
 - 1.3.3. Hemodynamic Monitoring Systems
- 1.4. Electrical and Hemodynamic Monitoring, Advanced and Customized Monitoring: Precision Monitoring
 - 1.4.1. Indications for Advanced and Personalized Monitoring
 - 1.4.2. Advanced Electrical Monitoring Systems
 - 1.4.3. Advanced Hemodynamic Monitoring Systems
- 1.5. Monitoring of Gaseous Exchange and Ventilatory Mechanics
 - 1.5.1. Indications
 - 1.5.2. Respiratory Monitoring Systems
 - 1.5.3. Ventilatory Mechanics Monitoring Systems
- 1.6. Renal Function Monitoring
 - 1.6.1. Indications
 - 1.6.1. Renal Function Monitoring Systems
 - 1.6.3. Monitoring of Renal Function in the Patient Subjected to Continuous Extrarenal Clearance Techniques
- 1.7. Tissue Perfusion Monitoring
 - 1.7.1. Indications
 - 1.7.2. Tissue Perfusion Monitoring Systems
 - 1.7.3. Evaluation of the Available Scientific Evidence and Its Use in Clinical Practice



- 1.8. Sedation Monitoring
 - 1.8.1. Indications
 - 1.8.2. Sedation and Analgesia Monitoring Systems
 - 1.8.3. Computerized Systems vs. Prediction Scales
- 1.9. Multimodal Monitoring
 - 1.9.1. Applications
 - 1.9.2. Prediction Systems
 - 1.9.3. Pathophysiological and Technological Bases
- 1.10. Artificial Intelligence and Monitoring: Precision Monitoring and Prediction
 - 1.10.1. Applications
 - 1.10.2. Prediction Systems
 - 1.10.3. Pathophysiological and Technological Bases

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*You will acquire knowledge
without geographical limitations
or pre-established timing”*



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.





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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.

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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 Certificate in Advanced Monitoring in the Critical Ill Patient guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Certificate in Advanced Monitoring in the Critical Ill Patient** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: Postgraduate Certificate in Advanced Monitoring in the Critical Ill Patient

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University 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
development languages
virtual classroom



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