

# Postgraduate Diploma

Surgical Management, Pathophysiology  
and Complications in Major Burns





## Professional Master's Degree Surgical Management, Pathophysiology and Complications in Major Burns

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-surgical-management-pathophysiology-complications-major-burns](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-surgical-management-pathophysiology-complications-major-burns)

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# 01

# Introduction

The status of critically ill burn patients can become complicated with dysfunction in virtually all organs, causing respiratory, hematologic, renal, hepatic, immunologic, adrenal and the possibility of multi-organ failure. Therefore, a superior preparation will allow physicians from different areas to perform multidisciplinary care that allows the patient's recovery. Do not think twice and increase your professional skills with TECH Global University in this field.



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*Increase your knowledge in the surgical management of major burns and the potential complications that can arise and achieve more effective care for your patients"*

The multidisciplinary nature and the need for teamwork in patients with major burns require knowledge of different surgical options.

The patient's evolution depends, on the one hand, on adequate surgical performance and, on the other hand, surgical success depends on the patient's preoperative situation and postoperative care. For this reason, this Postgraduate Diploma will explain the assessment criteria, the forms of debridement, temporary and definitive coverage, and the different types of dressings that can be used for the healing of burns.

Likewise, with this program, physicians will find in a clear way the complex pathophysiological relationships involved in burns and how they influence at the systemic level, as well as the main information that can help to use antibiotherapy in an adequate way, avoiding above all the development of resistance.

In short, this Postgraduate Diploma combines in a single program all the necessary information for the care required by patients with major burns. The multidisciplinary aspect of the program is noteworthy, as these patients are extremely complex and require many specialists working together, with the aim of achieving a rapid recovery.

In addition to the complete and fully updated information, it offers the greatest experience from the teaching staff in the treatment of this type of patient. This experience is very valuable since there are very few burn units and, therefore, the possibility of specializing in them is scarce. As a main advantage, it has the advantage of being a 100% online specialization, so the student can decide from where to study and at what time to do it, in this way, they can flexibly self-direct their study hours.

This **Postgraduate Diploma in Surgical Management, Pathophysiology and Complications in Major Burns** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ♦ The development of clinical practical case studies presented by experts in burns
- ♦ 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
- ♦ The presentation of practical workshops 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
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Special emphasis on test-based medicine and research methodologies
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Increase your proficiency in treating patients with major burns and give your career a boost"*

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*This Postgraduate Diploma is the best investment you can make in a specialization to update your knowledge in the care of patients with major burns”*

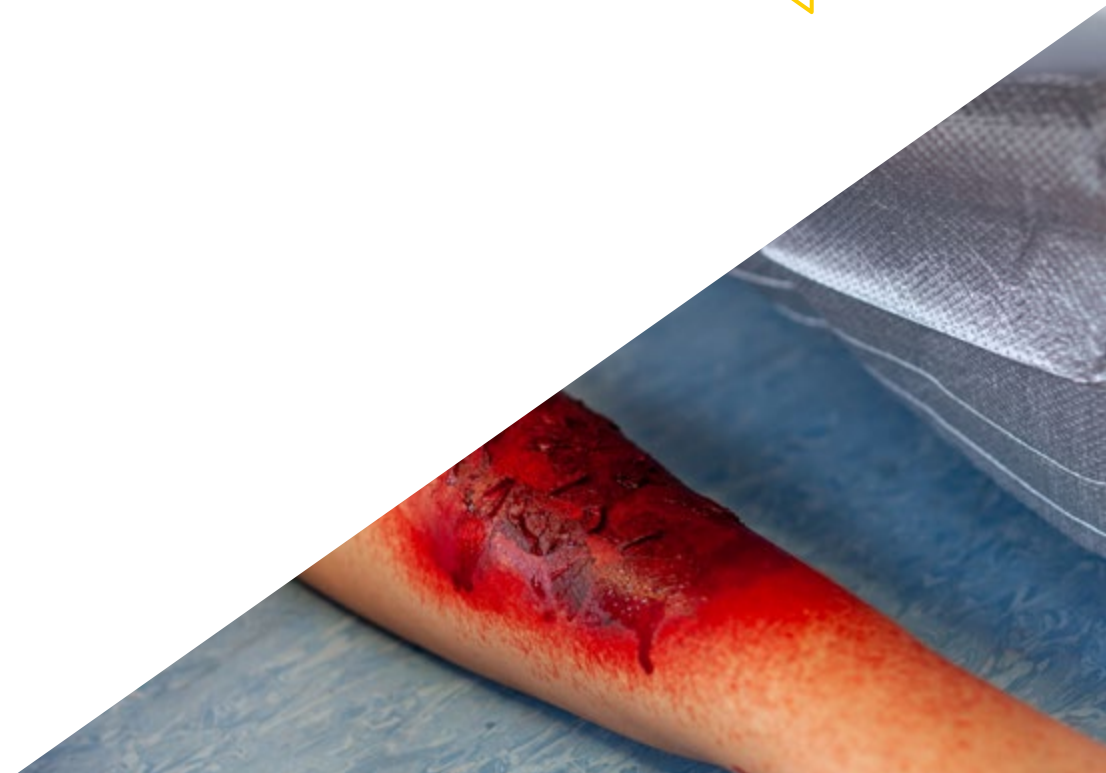
The teaching staff includes a team of prestigious urologists, who bring their experience to this program, as well as renowned specialists from leading scientific societies.

Its multimedia content, developed with the latest educational technology, will allow professionals to learn in a contextual and situated learning environment, i.e., a simulated environment that will provide immersive specialization for real situations.

The design of this program focuses on Problem-Based Learning, by means of which professionals must try to solve the different professional practice situations that are presented to them throughout the academic year. To achieve this, you will be assisted by an innovative interactive video system developed by renowned experts in Surgical Management, Pathophysiology and Complications in Major Burns, with extensive teaching experience.

*This Postgraduate Diploma allows you to study from anywhere in the world. All you need is a computer or mobile device with an internet connection.*

*Our innovative teaching methodology will allow you to study as if you were dealing with real cases, and therefore increasing your training.*



# 02 Objectives

The program in Surgical Management, Pathophysiology and Complications in Major Burns is designed to facilitate the performance of the healthcare practitioner with the latest advances and most innovative treatments in the sector.





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*This specialization will create a sense of confidence in daily practice and help you to grow professionally”.*



## General Objectives

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- Learn to manage and treat this complex pathology in which Intensive Care Medicine Specialists and plastic surgeons are fundamentally involved, but also other specialists such as anesthesiologists, infectologists, rehabilitators, psychiatrists, etc., and, of course, specialized nurses
- Offer a complete, integrated and multidisciplinary preparation that enables the care of patients with severe burns and that, through a multidisciplinary knowledge, facilitates the collaboration with other specialists

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*Our goal is to achieve academic excellence and to help you achieve it too.”*





## Specific Objectives

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### Module 1. Surgical Treatment

- ♦ Gain a deeper understanding of the surgical criteria, techniques and materials necessary for surgical treatment
- ♦ Assist the student in multidisciplinary decision making through familiarity with the patient's clinical situation and surgical needs in order to find the best time for surgery and the most appropriate type of surgery at that time

### Module 2. Pathophysiology and Infection

- ♦ Gain an in-depth understanding of the pathophysiological basis of extensive burns
- ♦ Explain the importance of sepsis in the burn patient and the complications for its early diagnosis, providing the student with criteria and updates on indicators
- ♦ Provide information to aid in the antibiotic treatment of the severe burn patient

### Module 3. Complications

- ♦ Specialize in the main complications in order to try to prevent them or to stop them early on
- ♦ Understanding the possible severity that these patients may reach
- ♦ Train the student in the detection and treatment of complications

03

# Course Management

A team of leading professionals in the field of burns, who work in major hospitals of great prestige and prestige, have created the materials, transferring to the program their experience gained in their jobs throughout their careers.





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*The best professionals in this field have come together to offer you the most specialized expertise in burns.”*

## International Guest Director

Dr. Jeremy Goverman is recognized internationally as a leading authority in the field of Plastic and Reconstructive Surgery, with a particular specialization in the treatment of Burns and Complex Wounds. Indeed, his professional career is a testament to his commitment to academic and clinical excellence.

With outstanding clinical work, he has served as a Burn Surgeon at Shriners Hospitals for Children and Massachusetts General Hospital (MGH), where he also holds the senior position of Associate Director of the MGH Wound Center. His depth of knowledge and experience is reflected in his ability to provide the highest quality care to his patients, from the time of the accident to their reintegration into the community.

In addition to his clinical activities, Dr. Jeremy Goverman has made an outstanding contribution to research in his field. His focus on the use of lasers for the treatment of burn scars and trauma has resulted in numerous successful treatments and renowned publications in peer-reviewed journals, such as the *Journal of Burn Care & Research* and *Surgical Clinics of North America*. In fact, he has performed more than 2,000 laser treatments specifically for scars of various causes.

Likewise, his leadership in the development of scar treatment programs, at the MGH Burn Center, reflects his commitment to innovation and continuous improvement in patient care. It is no wonder he was awarded Boston's Top Plastic Surgeon Award (2016-2021).



## Dr. Jeremy, Goverman

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- ♦ Associate Director of the Wound Center at Massachusetts General Hospital, U.S.A.
- ♦ Burn Surgeon at MGH and Shriners Hospital for Children
- ♦ Care of Calpiflaxis Patients at MGH
- ♦ Burn Care Provider at Sumner Redstone Burn Center
- ♦ Boston Plastic Surgeon of the Year Award (2016-2021)
- ♦ Surgical Critical Care Specialist by the American Board of Surgery
- ♦ Fellowship in General Plastic Surgery from the American Board of Plastic Surgery
- ♦ Fellow in General Surgery by the American Board of Surgery
- ♦ Doctor of Medicine, Sackler School of Medicine, Tel Aviv University

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

## Management



### Dr. Rubio Mateo-Sidrón, Jose Alfonso

- ♦ Attending Physician in Intensive Care Medicine University Hospital 12 de Octubre
- ♦ Fellowship in Cardiothoracic Critical Care. Papworth Hospital. Cambridge UK
- ♦ Extracorporeal Life Support Organization (ELSO)
- ♦ Specialist in Intensive Care Medicine
- ♦ Degree in Medicine. Cádiz University



### Dr. Sánchez Sánchez, Santos Manuel

- ♦ Head of Section of Intensive Care Medicine La Paz University Hospital
- ♦ Doctor of Medicine from the Autonomous University Madrid. Outstanding Cum Laude
- ♦ Master's Degree in Clinical, Medical and Healthcare Management. CEU Cardinal Herrera University
- ♦ Medical Specialist in Intensive Care Medicine. La Paz University Hospital
- ♦ Degree in Medicine and Surgery. University of Salamanca



## Professors

### Dr. Rodríguez Peláez, Jorge

- ♦ Resident of Intensive Care Medicine at La Paz University Hospital
- ♦ Degree in Medicine from the University of Oviedo
- ♦ Advanced CPR Instructor. Autonomous University of Barcelona
- ♦ Teaching assistant for the Master in Critical Illness and Emergencies

### Dr. Flores Cabeza, Eva

- ♦ Specialist in Intensive Care Medicine in the Burn Unit at the La Paz University Hospital
- ♦ Member of the High-Level Isolation Unit La Paz-Carlos III
- ♦ Certified Expert in Emerging and High-Risk Virus Pathology in the UAM

### Dr. Ruiz Barranco, Inés

- ♦ Specialist in Intensive Care Medicine in the Burn Unit at the La Paz University Hospital
- ♦ Head of the ICU service in the Multidisciplinary Critical Care Unit COVID-19, newly created

### Dr. García Muñoz, Andoni

- ♦ Associate of Intensive Care Medicine
- ♦ Degree in Medicine and Surgery, University of the Basque Country
- ♦ Master's Degree in Clinical Ultrasound for Emergency and Intensive Care CEU

### Dr. Arellano Serrano, María Soledad

- ♦ Resident of Intensive Care Medicine La Paz University Hospital
- ♦ Degree in Medicine and Surgery from the University of Alcalá de Henares

### Mr. Velasco Herrero, Jose Carlos

- ♦ Nurse in the intensive care-burn unit at La Paz University Hospital
- ♦ Nurse of the Skin Bank Unit of the La Paz University Hospital
- ♦ Diploma in Nursing from the University of Valladolid
- ♦ Professor of Undergraduate and Master's Degree students at the UAX

### Dr. Díaz Alvariño, Claudia

- ♦ Resident of Intensive Care Medicine at La Paz University Hospital (Madrid)
- ♦ Degree in Medicine from the Faculty of Medicine of the University of Santiago de Compostela
- ♦ Accredited instructor and teaching collaborator in Basic Life Support and Life Support courses

### Dr. Moro Ansoleaga, Ana María

- ♦ Pediatric Nurse Specialist
- ♦ Diploma in Nursing from the Pontificia de Comillas University, Madrid
- ♦ Nursing supervisor UCIN. Gregorio Marañón University Hospital, Madrid

# 04

# Structure and Content

The structure of the curriculum has been designed by a team of professionals who are familiar with the implications of medical training in the approach to the patient, aware of the relevance of the current specialization and committed to quality teaching through new educational technologies.



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*This Postgraduate Diploma contains the most complete and up-to-date scientific program on the market”*

## Module 1. Surgical Treatment

- 1.1. Initial Assessment and Urgent Treatment
  - 1.1.1. Circumferential Burns
  - 1.1.2. Compartment Syndrome
  - 1.1.3. Scarofasciotomies
  - 1.1.4. Initial Surgical Treatment
- 1.2. Surgical Treatment Indications: Debridement
  - 1.2.1. Surgical Debridement
  - 1.2.2. Enzymatic Debridement
- 1.3. Time Coverage
  - 1.3.1. Skin Substitutes
    - 1.3.1.1. Allografts
    - 1.3.1.2. Biosynthetics
- 1.4. Definitive Coverage: Skin Bank
  - 1.4.1. Autografts
    - 1.4.1.1. Techniques
  - 1.4.2. Skin Cultures
- 1.5. Dressings and Topical Antibiotics
  - 1.5.1. Dressings
  - 1.5.2. Topical Antibiotics and Antiseptics
  - 1.5.3. Others
- 1.6. Aspects of Special Burns
  - 1.6.1. Electrical
  - 1.6.2. Chemical
  - 1.6.3. Others
- 1.7. After-effects, the Need for Reconstructive Surgery and Regulated Amputations
- 1.8. Special Aspects in Freezing
- 1.9. Radioinduced Burns
- 1.10. Nursing Care

## Module 2. Pathophysiology and Infection

- 2.1. Pathophysiology of Burns
  - 2.1.1. Phases
- 2.2. SRIS
- 2.3. Infection from Burns
  - 2.3.1. Common Germs
  - 2.3.2. Local Treatment
- 2.4. Diagnosis of Sepsis in Burned Patients
- 2.5. Sepsis Indicators
  - 2.5.1. Classic
  - 2.5.2. NEW
  - 2.5.3. Future
- 2.6. Systemic Antibiotherapy
  - 2.6.1. Empirical
  - 2.6.2. Directed by Microbiological Screening
  - 2.6.3. Dose
- 2.7. Prophylactic Antibiotherapy
  - 2.7.1. Initial
  - 2.7.2. Periprocedures
- 2.8. Pneumonia Associated with Mechanical Ventilation
- 2.9. Other Infections
  - 2.9.1. Secondary Bacteremia associated with Catheters
  - 2.9.2. Transient Bacteremia
  - 2.9.3. Others
- 2.10. Most Frequently Used Antibiotics



### Module 3. Complications

- 3.1. ARDS
- 3.2. Hematologic Dysfunction
  - 3.2.1. Red Blood Cells
  - 3.2.2. White Blood Cells
  - 3.2.3. Coagulation
- 3.3. Renal Dysfunction
  - 3.3.1. Early Onset
  - 3.3.2. Late Onset
- 3.4. Hepatic Dysfunction
- 3.5. Immunological Effects
- 3.6. Sympathetic and Adrenal Response
- 3.7. Multiorgan Failure
- 3.8. Compartment Syndrome in the Limbs
- 3.9. Intra-abdominal Hypertension
  - 3.9.1. Incidence
  - 3.9.2. Measurement
- 3.10. Abdominal Compartment Syndrome and Others



*A unique, key, and decisive educational 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.



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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 Diploma in Surgical Management, Pathophysiology and Complications in Major Burns guarantees you, in addition to the most rigorous and up-to-date training, access to a Postgraduate Diploma issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Diploma in Surgical Management, Pathophysiology and Complications in Major Burns** 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.

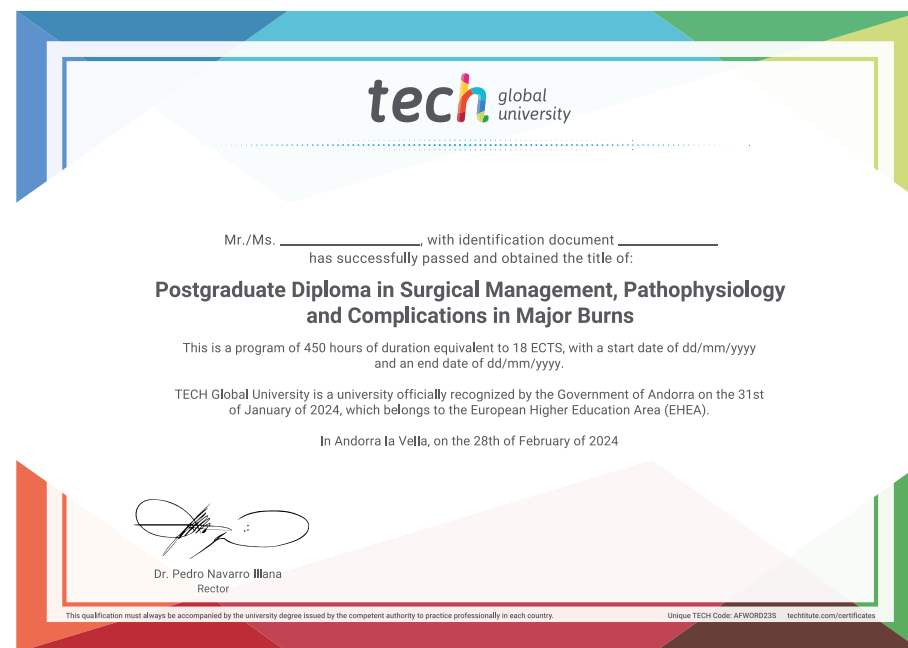
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Surgical Management, Pathophysiology and Complications in Major Burns**

Modality: **online**

Duration: **6 months**

Credits: **18 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

**tech** global  
university

personalized service

innovation

knowledge

**Professional Master's Degree**  
Surgical Management, Pathophysiology  
and Complications in Major Burns

development

online languages

virtual classroom

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Diploma

Surgical Management, Pathophysiology  
and Complications in Major Burns

