

# Postgraduate Certificate

## Pathophysiology and Infection in Major Burns



## Postgraduate Certificate Pathophysiology and Infection in Major Burns

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

Official N° of hours: 150 h.

Website: [www.techitute.com/us/medicine/postgraduate-certificate/pathophysiology-infection-major-burns](http://www.techitute.com/us/medicine/postgraduate-certificate/pathophysiology-infection-major-burns)

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# 01

# Introduction

Specializing in the pathophysiology and infections of patients with major burns will avoid potential complications when applying the most appropriate treatments for each individual. For this reason, at TECH Technology University we offer this higher specialization to increase your knowledge in this field and take a boost to your profession, improving the care of your patients and, therefore, their quality of life.





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*Infections can cause serious consequences in burn patients, so it is imperative to have a high level of knowledge in this field"*

The Postgraduate Certificate in Pathophysiology and Infection in Major Burns tries to clearly outline the complex pathophysiological relationships involved in burns and how they influence at the systemic level. To this end, the changes that occur in the two fundamental phases are described.

Based on this, the systemic inflammatory response syndrome is discussed, and infection is studied, which is the major cause of mortality in burn patients, and which presents extraordinary complications for its diagnosis in the burn patient, since most of its symptoms are comparable to those of SIRS.

The program includes the specific criteria that have been proposed for considering sepsis in burn patients. In addition, a detailed review is made of the usefulness of the classic markers of sepsis and, above all, of the new ones that seem to be somewhat more specific, but above all appear earlier. This early diagnosis would improve the prognosis by initiating antibiotic treatment earlier.

Likewise, it also collects the main information that can help to use antibiotherapy in an adequate way, avoiding above all the emergence of resistance.

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 training in them is scarce. As a main advantage, it is 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.

For this reason, this Postgraduate Certificate is the most intensive and effective program on the market in this field. A high-level program that will allow you to become one of the most up-to-date professionals in the sector, in a field with a high demand for professionals.

This **Postgraduate Certificate in Pathophysiology and Infection in Major Burns** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ Practical cases 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
- ◆ News on Pathophysiology and Infection in Major Burns
- ◆ Practical exercises where self-assessment can be used to improve learning
- ◆ Emphasis on innovative methodologies in International Cooperation
- ◆ 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



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

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

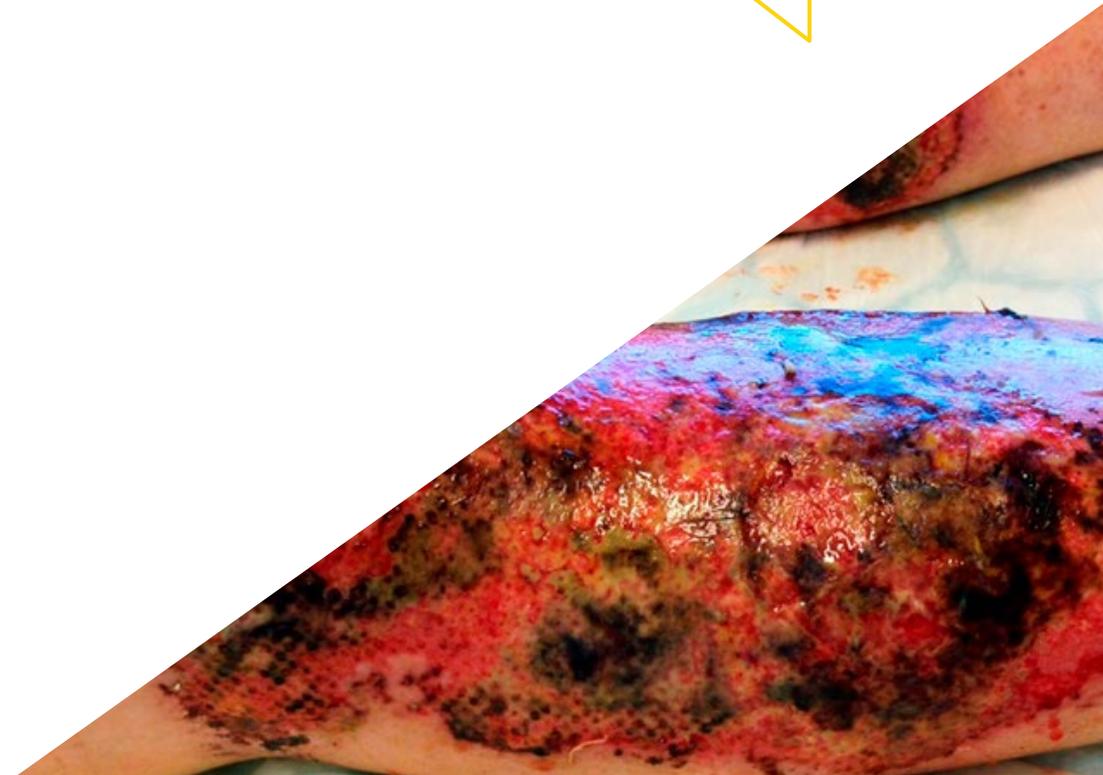
The teaching staff includes a team of prestigious urologists, who bring their experience to this program, as well as renowned specialists from leading scientific societies.

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. This will be done with the help of an innovative interactive video system developed by renowned experts in pathophysiology and infection in major burn patients, with extensive teaching experience.

*This Postgraduate Certificate 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 Postgraduate Certificate in Pathophysiology and Infection in Major Burns is aimed at facilitating the performance of the professional dedicated to health with the latest advances and newest 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 specialization that enables the care of patients with severe burns and that, through a multidisciplinary knowledge, facilitates the collaboration with other specialists





## Specific objectives

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- ◆ 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



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



03

# Course Management

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





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*The best professionals in this area  
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 Calpifilaxis 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

04

# Structure and Content

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





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

## Module 1. Pathophysiology and Infection

- 1.1. Pathophysiology of Burns
  - 1.1.1. Phases
- 1.2. SRIS
- 1.3. Infection from Burns
  - 1.3.1. Common Germs
  - 1.3.2. Local Treatment
- 1.4. Diagnosis of Sepsis in Burned Patients
- 1.5. Sepsis Indicators
  - 1.5.1. Classic
  - 1.5.2. NEW
  - 1.5.3. Future
- 1.6. Systemic Antibiotherapy
  - 1.6.1. Empirical
  - 1.6.2. Directed by Microbiological Screening
  - 1.6.3. Dose
- 1.7. Prophylactic Antibiotherapy
  - 1.7.1. Initial
  - 1.7.2. Periprocedures
- 1.8. Pneumonia Associated with Mechanical Ventilation
- 1.9. Other Infections
  - 1.9.1. Secondary Bacteremia associated with Catheters
  - 1.9.2. Transient Bacteremia
  - 1.9.3. Others
- 1.10. Most Frequently Used Antibiotics





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*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.

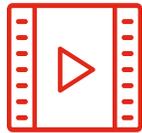
*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

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

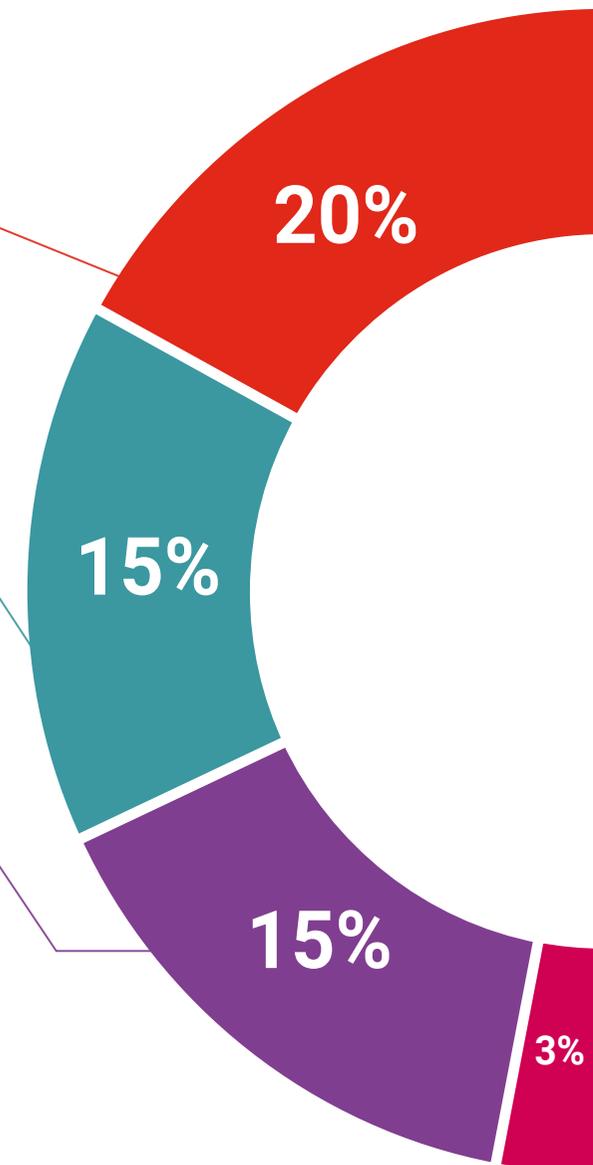
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

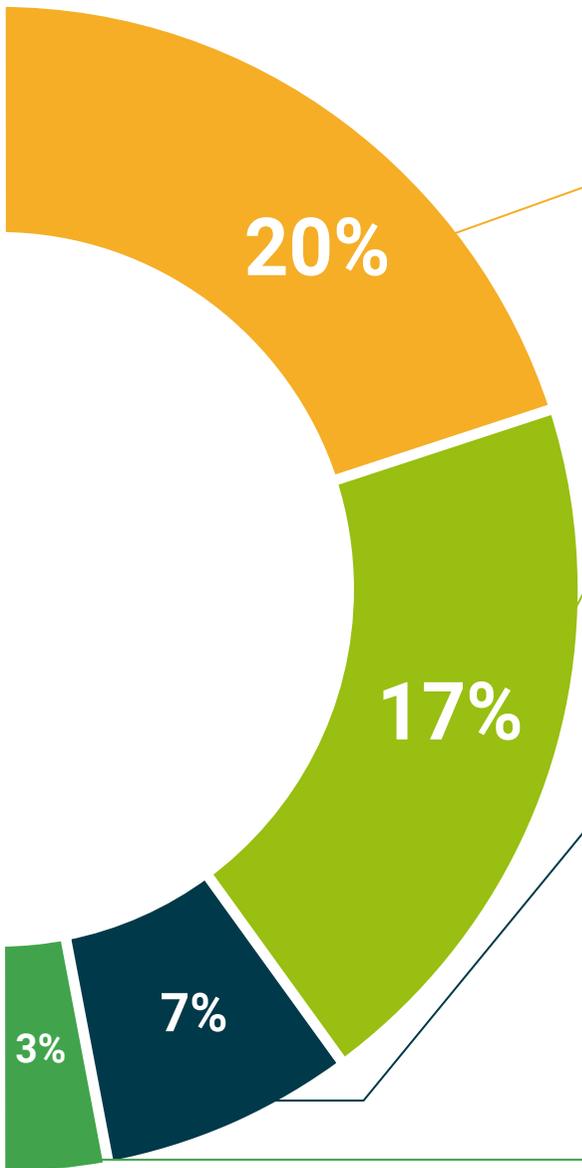
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 Certificate in Pathophysiology and infection in Major Burns guarantees you, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate issued by TECH Technological University.





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

This **Postgraduate Certificate in Pathophysiology and Infection in Major Burns** 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 Certificate** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Postgraduate Certificate in Pathophysiology and Infection in Major Burns**

Official N° of hours: **150 h.**



\*Apostille Convention. In the event that the student wishes to have their paper diploma 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

online training

development language

virtual classroom

**tech** technological  
university

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