

Postgraduate Diploma

Initial Care of the Severe Trauma Patient in the ICU



Postgraduate Diploma Initial Care of the Severe Trauma Patient in the ICU

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-initial-care-severetrauma-patient-icu

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01

Introduction

The growing demand for specialists in Traumatology is due to the continuous evolution in patient monitoring techniques, assessment devices and procedures for dealing with severe injuries in Intensive Care Units (ICU). In addition, new strategies for prevention and care in complex clinical situations require professionals whose skills are properly updated. That is why TECH offers this 100% online academic pathway, an effective update on the latest procedures, the most innovative diagnostic technology and current medical research. All this through a wide variety of multimedia educational resources of the latest generation, available from any electronic device with internet access.



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Get up-to-date with TECH! The most comprehensive content to get you up-to-date on the Initial Care of the Severe Trauma Patient in the ICU”

Medicine lives in a context in which its specialists are required to keep up-to-date and renew their skills by incorporating the latest therapeutic strategies. The notorious development in the Initial Care of Severe Trauma Patients in ICU has prevailed when it comes to recruiting professionals adapted to the new times.

This Postgraduate Diploma will address the immediate medical care of trauma patients prior to arrival at the hospital, as well as emergency response protocols, assessment of injury severity, stabilization techniques, immobilization and safe transport. The physician will be up-to-date on critical decision making, effective team communication and optimal prehospital management.

Likewise, students will delve into the immediate response and management of these injuries in the ICU, from rapid assessment, prioritization, stabilization and initial treatment of critical conditions. In this way, students will be able to interpret vital signs, perform essential interventions and coordinate multidisciplinary teams. In short, they will develop the necessary skills to take quick and accurate measures in acute trauma situations.

Finally, time will be dedicated to the diagnosis and integral treatment of shock, recognizing the different types that exist and evaluating vital signs, hemodynamic parameters and biomarkers. The graduate will be able to restore hemodynamic stability, including the use of fluids and vasoactive drugs. In addition, continuous monitoring and adaptation of treatments will be analyzed, depending on the patient's response.

The program will provide the graduate with a theoretical foundation, but will also allow them to adequately face practical situations. A Postgraduate Diploma that is supported by the extensive experience of TECH's outstanding teaching team, and which is supported by an innovative and cutting-edge teaching methodology. This is Relearning, based on the repetition of essential concepts to achieve a more effective acquisition of knowledge.

This **Postgraduate Diploma in Initial Care of the Severe Trauma Patient in the ICU** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- ♦ The development of case studies presented by experts in Initial Care of Severe Trauma Patients in the ICU
- ♦ 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 self-assessment can be used 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



Update your practice in the management of trauma patients before and after arrival at the hospital"

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Keep up-to-date in the care and evacuation of the injured outside the hospital thanks to this Postgraduate Diploma”

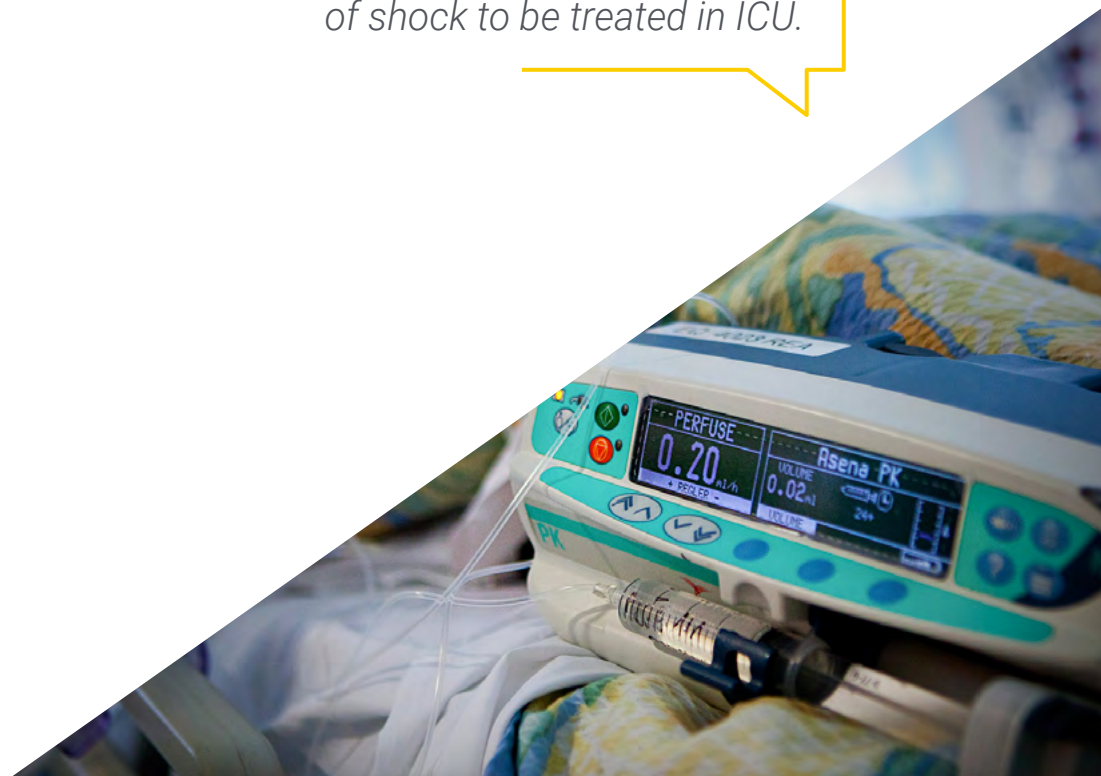
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, 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 during the academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

Perfect your skills in primary assessment and initial resuscitation of the patient with traumatic injuries in ICU.

Benefit from the best Traumatology program! Analyze the different types of shock to be treated in ICU.



02 Objectives

This program will provide students with the opportunity to acquire the necessary skills to keep up-to-date in their field, delving into the essential aspects of the Initial Care of the Severe Trauma Patient in the ICU. The knowledge acquired throughout the program will boost the professional's career, providing them with comprehensive and updated preparation. This university program will foster the development of solid competencies in a medical field that is increasingly in demand, with the confidence of obtaining the best results backed by TECH.



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Develop a professional profile and open the door to new job opportunities thanks to this Postgraduate Diploma”



General Objectives

- ♦ Delve into a thorough understanding of the anatomophysiological, pathophysiological, and clinical basis of severe traumatic injuries, as well as associated complications and comorbidities
- ♦ Effectively communicate injury prevention information to different audiences and utilize health promotion strategies
- ♦ Delve into protocols for the prehospital management of specific trauma, such as head, chest, and orthopedic trauma
- ♦ Integrate quality and safety practices in the management of trauma patients, minimizing risks and optimizing outcomes
- ♦ Be aware of the specific nutritional requirements of severe trauma patients and develop appropriate nutrition plans
- ♦ Implement triage protocols in mass trauma situations and prioritize care





Specific Objectives

Module 1. Prehospital Trauma Management

- Be aware of rapid and systematic assessments of trauma patients in prehospital settings
- Identify and prioritize prehospital management interventions according to patient severity and condition
- Establish strategies to ensure adequate ventilation
- Refresh techniques for controlling external and internal bleeding and minimizing blood loss in trauma situations
- Master safe immobilization techniques to prevent further damage and ensure adequate mobilization of trauma patients
- Update the medications used in prehospital management, their dosage and appropriate routes of administration

Module 2. Initial Trauma Care in the ICU Hospital

- Rapidly assess the severity and extent of traumatic injuries in patients admitted to the ICU
- Identify and prioritize medical and surgical interventions according to the urgency and stability of the patient
- Delve into techniques to restore hemodynamic stability and control shock in trauma patients
- Apply methods to control active bleeding and prevent excessive blood loss
- Interpret radiographs and other medical images to identify injuries and guide care
- Delve into strategies for pain management and sedation in trauma patients, considering their individual needs

Module 3. Management of shock in ICU trauma

- Delve into the different types of shock in trauma patients in the ICU
- Delve into the interpretation of vital signs and hemodynamic parameters to assess the severity and progression of shock
- Learn the principles of intravenous fluid administration and its proper use to maintain perfusion
- Update knowledge of vasoactive medications and their mechanisms of action to correct hemodynamic imbalance
- Identify and address coagulation disorders associated with traumatic shock
- Develop strategies for recognizing and treating septic shock, a common complication in trauma patients

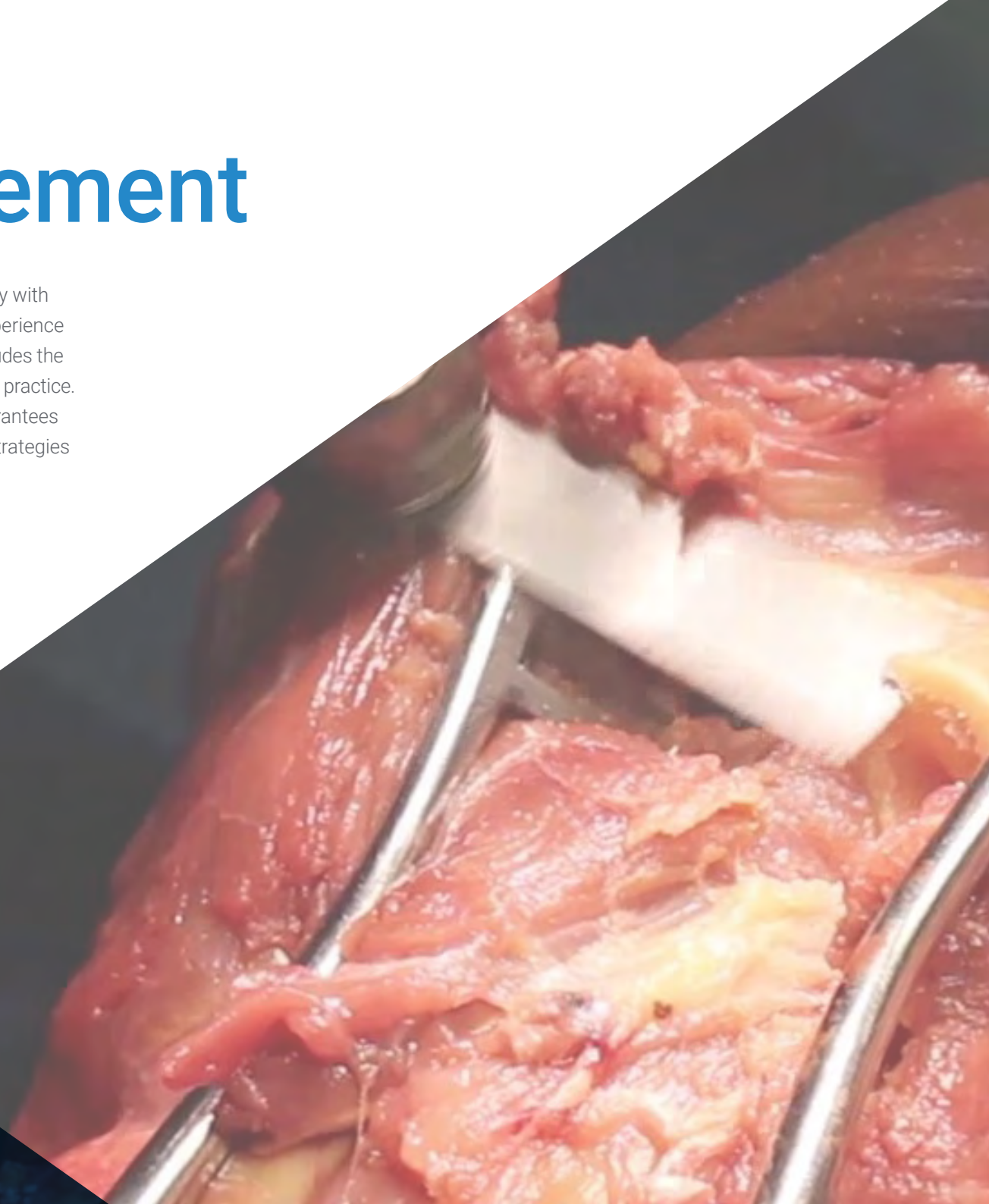


Delve into triage protocols in mass trauma situations, so that patient care is appropriately prioritized"

03

Course Management

This Postgraduate Diploma has a distinguished and highly qualified faculty with extensive experience in the field of Intensive Care Traumatology. Their experience in various leading hospitals is reflected throughout the program, which includes the most innovative procedures that they themselves apply in their daily clinical practice. Therefore, in its firm commitment to provide quality education, TECH guarantees students a deep and complete knowledge, as well as the most effective strategies for the full development of their capabilities.



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Thanks to this program, designed by specialists in Intensive Care Medicine, you will acquire exclusive and rigorous skills”

International Guest Director

Doctor George S. Dyer is an eminent orthopedic surgeon, specializing in Upper Limb Traumatology and Complex Post Traumatic Reconstructions of the Shoulder, Elbow, Wrist and Hand. In fact, he has served as an Upper Limb Surgeon at Brigham and Women's Hospital in Boston, where he has also held the prestigious Barry P. Simmons Chair in Orthopedic Surgery.

Therefore, one of his most significant contributions has been his work in Haiti, where he has had a lasting impact. After the devastating earthquake of 2010, he was one of the first surgeons to arrive in the country, providing assistance at a critical time. In doing so, he has worked closely with local surgeons and other health professionals to strengthen Haiti's capacity to manage medical emergencies. As such, his efforts have been instrumental in training a new generation of Haitian orthopedic surgeons, who demonstrated their skill and preparedness during the 2021 earthquake, handling the situation with great efficiency and professionalism.

Likewise, during his time as Director of the Harvard Combined Orthopedic Residency Program, he has strived to improve the working and educational conditions of the residents, fostering a more balanced and healthy work environment. This focus on resident well-being reflects his commitment to preparing future physicians and his concern for the mental and professional health of his colleagues.

As such, Doctor George S. Dyer's impact on his field has been recognized through various honors, such as the Humanitarian Award given by the Hippocrates Society at Brigham and Women's Hospital, as well as being named a Top Doctor in Massachusetts. These awards have underscored his influence and significant contribution to global Orthopedic Surgery, reflecting his dedication and commitment to all aspects of his career.



Dr. Dyer, George S.

- Upper Limb Surgeon at Brigham and Women's Hospital, Boston, United States
- Barry P. Simmons Chair in Orthopedic Surgery at Brigham and Women's Hospital, Boston, United States
- Commandant Surgeon in the Medical Corps of the U.S. Navy
- Director of the Harvard Combined Orthopedic Residency Program
- Fellowship in Upper Limb Fellowship at Brigham and Women's Hospital and Children's Hospital
- Doctor of Medicine from Harvard Medical School
- B.A. in Political Science and Government from Harvard University
- Humanitarian Award from the Hippocratic Society of Brigham and Women's Hospital
- Massachusetts Top Doctor

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

Management



Dr. Bustamante Munguira, Elena

- ♦ Head of the Intensive Care Medicine Department of the Hospital Clínico de Valladolid
- ♦ Medical Director of the Health Area of Ibiza and Formentera
- ♦ Specialist in Intensive Care Medicine
- ♦ Teacher of refresher courses and workshops
- ♦ Illustrious Official College of Physicians of Salamanca Award.
- ♦ Ramón Llul Award of the Patient Safety Unit
- ♦ PhD in Medicine and Surgery
- ♦ Master's Degree in Management
- ♦ Medical and Healthcare Management
- ♦ Master in Patient Safety

Professors

Dr. De la Torre Vélez, Paula

- ♦ Intensive Care Physician at the Hospital Clínico Universitario de Valladolid
- ♦ Emergency Physician in the Emergency Service of 112 of Castilla y León
- ♦ Cooperating with Medicos sin Fronteras (Doctors without Borders)
- ♦ Specialist in Intensive Care Medicine at the University Hospital of Burgos
- ♦ Degree in Medicine from the University of Valladolid

Dr. Alcalde Susi, Roberto

- ♦ Doctor of the Extrahospital Emergency Service at the Miranda del Ebro Base
- ♦ Specialist. In Intensive Care Medicine in the ICU of the Hospital Clínico de Valladolid
- ♦ Intensive Care Physician in the Intensive Care Unit of the University Hospital of Burgos
- ♦ Precursor, director and coordinator of the Project "El gorro Solidario"
- ♦ Expert in HEMS (Helicopter Emergency Medical Service)
- ♦ Degree in Medicine from the University of Navarra
- ♦ Member of the Board of Directors of doctors in training of the Colegio Oficial de Médicos de Burgos and Semicycuc



Dr. Bueno González, Ana María

- ◆ Specialist in Intensive Care Medicine at the Hospital Clínico Universitario de Valladolid, Spain
- ◆ Graduate in Medicine and Surgery from the University of Valladolid
- ◆ Collaborating teacher at the Faculty of Medicine of Ciudad Real
- ◆ Teacher of Advanced Life Support in HGUCR and Faculty of Medicine of Ciudad Real
- ◆ Collaborating researcher in CRASH-3 trial and SEMICYUC project
- ◆ Diploma in Statistics in Health Sciences, Universitat Autònoma de Barcelona
- ◆ Master in Research Methodology in Health Sciences, Universitat Autònoma de Barcelona
- ◆ Master's Degree in Updating in Intensive Care Medicine from the CEU University

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Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice”

04

Structure and Content

The content of this university program has been designed taking into account the specific requirements of the subject in question, which in this case is the Initial Care of Severe Trauma Patients in the ICU. Therefore, a syllabus has been developed that offers a complete vision of this area, always with the idea of applying what has been studied to the international environment. From pre-hospital management to diagnosis and treatment in the ICU, students will expand their knowledge and keep their professional profile up-to-date, with the support of a teaching team made up of high-level specialists.





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Take a step forward in your career and delve into prehospital patient management and Intensive Care Units”

Module 1. Prehospital Trauma Management

- 1.1. General activation recommendations
 - 1.1.1. Recommendations
 - 1.1.2. What should I do?
 - 1.1.3. Golden rules for a polytraumatized patient
 - 1.1.4. Useful recommendations in case of traveling
- 1.2. Care priorities in *on-site* care and in medical transport
 - 1.2.1. Scene assessment
 - 1.2.1.1. Approach to the scene of intervention
 - 1.2.1.2. Scene management and handling
 - 1.2.1.3. Triage
 - 1.2.1.4. Management of additional resources
 - 1.2.2. Primary assessment and urgent actions
 - 1.2.2.1. Initial estimate (General impression)
 - 1.2.2.2. Control of exsanguinating hemorrhages
 - 1.2.2.3. Airway and Ventilation
 - 1.2.2.4. Circulatory status
 - 1.2.2.5. Neurological Status
 - 1.2.2.6. Exposure and transition to secondary assessment
- 1.3. Life support and integral coordination in traffic accidents
 - 1.3.1. Definitions
 - 1.3.2. Objectives of life support
 - 1.3.3. Basic and advanced life support sequences in adults
 - 1.3.4. Analysis of the main changes in the recommendations
 - 1.3.5. Risk of disease transmission for the resuscitator during CPR
 - 1.3.6. Lateral Safety Position
 - 1.3.7. Algorithm of BLS/AVS in adults
- 1.4. General self-protection and safety measures
 - 1.4.1. Scope
 - 1.4.2. Identification of the licensees and the site of the activity
 - 1.4.3. Description of the activity and physical environment
 - 1.4.3.1. Description of the activity that is the subject of the self-protection plan
 - 1.4.3.2. Description of the establishment, premises and facilities
 - 1.4.3.3. Description of the surroundings
 - 1.4.3.4. Description of accesses





- 1.4.4. Inventory, analysis and risk assessment
 - 1.4.4.1. Description and location of risks
 - 1.4.4.2. Analysis and evaluation of risks specific to the activity and external risks
- 1.5. Wound Classification
 - 1.5.1. Classification
 - 1.5.2. Skin Anatomy
 - 1.5.3. Concept, classification and clinic of wounds
 - 1.5.4. Treatment of Wounds
 - 1.5.5. Wounds caused by stab wounds and firearms
 - 1.5.5.1. Stab Wounds
 - 1.5.5.1.1. Definition and classification of stabbing weapons
 - 1.5.5.1.1.1. Stab wounds
 - 1.5.5.1.1.2. Sharp stab wounds
 - 1.5.5.1.1.3. Stab wounds due to a sharp stabbing weapon
 - 1.5.5.1.1.4. Wounds due to sharp and blunt stab wounds
 - 1.5.5.1.2. Gunshot Wounds
 - 1.5.5.1.2.1. Morphology of firearm wounds
 - 1.5.5.1.2.2. Clinical aspects and treatment
- 1.6. Activation of rescue teams
 - 1.6.1. Activation
 - 1.6.2. Traffic Accident Victims Unit
 - 1.6.3. Emergency coordinating center
 - 1.6.3.1. Reception and control phase of the warning call
 - 1.6.3.2. Phase of assessment or medical regulation of data
 - 1.6.3.3. Phase of assistance response, follow-up and control
 - 1.6.3.4. Health action phase
 - 1.6.3.4.1. Arrival and assessment of the incident
 - 1.6.3.4.2. Organization of the scene and its environment
 - 1.6.3.4.3. Location of affected persons and triage (classification)
 - 1.6.3.4.4. Assistance and evacuation of the injured
- 1.7. Techniques of deescarceration and extrication
 - 1.7.1. Preparation
 - 1.7.2. Response and recognition
 - 1.7.3. Control
 - 1.7.4. Vehicle stabilization
 - 1.7.5. Boarding: access to the victim

- 1.7.6. Stabilization of the victim and de-escarceration
- 1.7.7. Extraction and termination
- 1.7.8. Necessary Material
- 1.7.9. The airbag
- 1.8. Immobilization of the severely traumatized patient
 - 1.8.1. Extrication
 - 1.8.2. Who should we perform RME?
 - 1.8.3. With what means do we perform the RME?
 - 1.8.4. How do we perform the EMR?
- 1.9. Assessment of the injured patient in the out-of-hospital setting
 - 1.9.1. Patients
 - 1.9.2. Initial Assessment
 - 1.9.2.1. Airway, cervical spine control
 - 1.9.2.2. Ventilation
 - 1.9.2.3. Circulation
 - 1.9.2.4. Neurological Status
 - 1.9.2.5. Patient exposure
 - 1.9.3. Second Evaluation
- 1.10. Pathophysiology of medical transport and recommendations during patient transport
 - 1.10.1. Concept
 - 1.10.2. History
 - 1.10.3. Classification
 - 1.10.3.1. Transporte aéreo
 - 1.10.3.3. Transporte terrestre
 - 1.10.4. Pathophysiology of out-of-hospital transport
 - 1.10.4.1. Accelerations
 - 1.10.4.2. Mechanical and acoustic vibrations
 - 1.10.5. Indications and contraindications of the helicopter
 - 1.10.6. Prevention of disturbances due to transport
 - 1.10.7. Destination
 - 1.10.8. Means of transport
 - 1.10.9. Assistance during transfer
 - 1.10.10. Transfer
 - 1.10.11. Assistance material

Module 2. Initial Trauma Care in the ICU Hospital

- 2.1. Indications for transfer to a trauma center
 - 2.1.1. Indications
 - 2.1.2. Determine the need to transfer the patient
 - 2.1.2.1. Relocation factors
 - 2.1.2.1.1. Primary screening: Airway
 - 2.1.2.1.2. Primary screening: Breathing
 - 2.1.2.1.3. Primary screening: Circulation
 - 2.1.2.1.4. Primary screening: Neurological Deficit
 - 2.1.2.1.5. Primary screening: Exhibition
 - 2.1.2.1.6. Secondary review: Head and Neck
 - 2.1.2.1.7. Maxillofacial
 - 2.1.2.2. Timing of transfer
 - 2.1.2.2.1. Evaluate anatomy of the injury
 - 2.1.2.2.2. Evaluate mechanisms of injury and evidence of high energy impact
 - 2.1.2.2.3. Evaluate special patients, pediatrics, elderly, obese, pregnant women
- 2.2. Assistance in the Vital Box of the hospital. Organization and care team
 - 2.2.1. Objectives
 - 2.2.2. Organization of the care team
 - 2.2.3. Characteristics of the Vital Trauma Care Box
 - 2.2.4. Recommended protective measures
- 2.3. Primary assessment and initial resuscitation
 - 2.3.1. Primary screening with simultaneous resuscitation
 - 2.3.1.1. Airway with restriction of cervical spine motion
 - 2.3.1.2. Breathing and ventilation
 - 2.3.1.3. Circulation with hemorrhage control
 - 2.2.1.3.1. Blood volume and cardiac output
 - 2.2.1.3.2. Bleeding
 - 2.3.1.4. Neurological evaluation (deficit)
 - 2.3.1.5. Exposure and environmental monitoring
 - 2.3.2. Life threatening injuries
 - 2.3.2.1. Airway problems
 - 2.3.2.1.1. Airway obstruction
 - 2.3.2.1.2. Bronchial tree injury

- 2.3.2.2. Respiratory Problems
 - 2.3.2.2.1. Hypertensive pneumo
 - 2.3.2.2.2. Open pneumothorax
 - 2.3.2.2.3. Massive hemothorax
 - 2.3.2.3. Circulatory problems
 - 2.3.2.3.1. Massive hemothorax
 - 2.3.2.3.2. Cardiac Tamponade
 - 2.3.2.3.3. Traumatic circulatory arrest
- 2.4. Second Evaluation
 - 2.4.1. History
 - 2.4.1.1. Mechanism of injury and suspected patterns
 - 2.4.1.2. Environment
 - 2.4.1.3. Previous state of injury and predisposing factors
 - 2.4.1.4. Pre-hospital care observations
 - 2.4.2. Physical Examination
 - 2.4.2.1. Introduction
 - 2.4.2.2. Look and ask
 - 2.4.2.3. Assess head, neck, thorax, abdomen and pelvis
 - 2.4.2.4. Circulatory evaluation
 - 2.4.2.5. Radiological Examination
- 2.5. Anti-tetanus and antibiotic prophylaxis
 - 2.5.1. Indications
 - 2.5.2. Guidelines
 - 2.5.3. Dosage
- 2.6. Airway and ventilatory management
 - 2.6.1. First Steps
 - 2.6.2. Recognition of the Problem
 - 2.6.2.1. Maxillofacial trauma
 - 2.6.2.2. Laryngeal trauma
 - 2.6.3. Objective signs of airway obstruction
 - 2.6.4. Ventilation
 - 2.6.4.1. Recognition of the Problem
 - 2.6.4.2. Objective signs of inadequate ventilation
- 2.7. Prediction of difficult airway management
 - 2.7.1. Airway
 - 2.7.2. Potential difficulties
 - 2.7.3. LEMON evaluation for difficult intubation
 - 2.7.3.1. External look
 - 2.7.3.2. Evaluates the 3-3-2 rule
 - 2.7.3.3. Mallampati
 - 2.7.3.4. Obstruction
 - 2.7.3.5. Neck mobility
- 2.8. Airway Management
 - 2.8.1. Airway Management
 - 2.8.1.1. Predict the management of a difficult airway
 - 2.8.1.2. Airway decision scheme
 - 2.8.2. Airway maintenance techniques
 - 2.8.2.1. Chin lift maneuver
 - 2.8.2.2. Mandibular traction maneuver
 - 2.8.2.3. Nasopharyngeal airway
 - 2.8.2.4. Oropharyngeal airway
 - 2.8.2.5. Extra glottic or supraglottic devices
 - 2.8.2.5.1. Laryngeal mask and laryngeal mask for intubation
 - 2.8.2.5.2. Laryngeal tube and laryngeal tube for intubation
 - 2.8.2.5.3. Multilumen esophageal airway
 - 2.8.3. Definitive airways
 - 2.8.3.1. Orotracheal Intubation
 - 2.8.3.2. Surgical airway
 - 2.8.3.2.1. Needle cricothyroidotomy
 - 2.8.3.2.2. Surgical cricothyroidotomy
- 2.9. Errors and occult injuries in trauma. Tertiary recognition
 - 2.9.1. Tertiary recognition
 - 2.9.1.1. Indicators of Quality of Care
 - 2.9.2. Errors in initial care
 - 2.9.2.1. Most frequent errors in the different phases of initial care
 - 2.9.2.2. Types of Error

- 2.9.3. Occult injury or undiagnosed injury (NLI)
 - 2.9.3.1. Definition. Incidence
 - 2.9.3.2. Confounding variables contributing to the occurrence of NLD
 - 2.9.3.2.1. Unavoidable factors
 - 2.9.3.2.2. Potentially avoidable factors
 - 2.9.3.3. Most frequent NLD
- 2.9.4. Tertiary recognition
 - 2.9.4.1. Definition
 - 2.9.4.2. Importance of continuous revaluation
- 2.10. Registration and transfer
 - 2.10.1. Referring physician
 - 2.10.2. ABC-SBAR for trauma patient transfer
 - 2.10.3. Receiving Physician
 - 2.10.4. Mode of transport
 - 2.10.5. Transfer protocol
 - 2.10.5.1. Referring physician information
 - 2.10.5.2. Information for transfer personnel
 - 2.10.5.3. Documentation
 - 2.10.5.4. Treatment during transfer
 - 2.10.5.5. Data for relocation





Module 3. Management of shock in ICU trauma

- 3.1. Objectives end points of trauma resuscitation
 - 3.1.1. Resuscitation
 - 3.1.2. Pathophysiology
 - 3.1.3. Global parameters
 - 3.1.3.1. Clinical parameters, physical examination, vital signs
 - 3.1.3.2. Hemodynamic parameters: Optimization of volemia
 - 3.1.3.3. Hemodynamic parameters: Cardiac work
 - 3.1.3.4. End-expiratory CO₂ values (End-tidal CO₂)
 - 3.1.3.5. Oximetric values
 - 3.1.3.6. Measurement of tissue metabolism anaerobiosis
 - 3.1.4. Regional parameters
 - 3.1.4.1. Gastric mucosal tonometry
 - 3.1.4.2. Sublingual capnography
 - 3.1.4.3. Tissue oximetry and capnometry
 - 3.1.4.4. Near Infrared Spectrometry (NIRS)
 - 3.1.5. Conclusions
- 3.2. Multi-organ dysfunction in trauma
 - 3.2.1. Dysfunction
 - 3.2.2. Pathophysiology
 - 3.2.3. Classification
 - 3.2.3.1. Early Onset
 - 3.2.3.2. Late Onset
 - 3.2.4. Diagnosis
 - 3.2.4.1. Scales
 - 3.2.4.2. Risk Factors
 - 3.2.5. Therapeutic Approach
 - 3.2.5.1. Cardiorespiratory support
 - 3.2.5.2. Damage control surgeries
 - 3.2.5.3. Surgeries for debridement of infectious foci
 - 3.2.5.4. Blood volume and blood products supply
 - 3.2.5.5. Others: Protective mechanical ventilation and nutrition
 - 3.2.6. Conclusions

- 3.3. Hemorrhagic shock
 - 3.3.1. Recognition of the state of shock
 - 3.3.2. Clinical differentiation of shock etiology
 - 3.3.2.1. General description of hemorrhagic shock
 - 3.3.3. Physiological classification
 - 3.3.3.1. Grade I hemorrhage >15% blood volume loss
 - 3.3.3.2. Hemorrhage grade II 15-30% of blood volume loss
 - 3.3.3.3. Hemorrhage grade III 31-40% of blood volume loss
 - 3.3.3.4. Hemorrhage grade IV >40% blood volume loss
 - 3.3.4. Initial management of hemorrhagic shock
 - 3.3.4.1. Physical Examination
 - 3.3.4.1.1. Airway and Breathing
 - 3.3.4.1.2. Circulation, hemorrhage control
 - 3.3.4.1.3. Neurological Deficit
 - 3.3.4.1.4. Exposure: complete examination
 - 3.3.4.2. Vascular Access
 - 3.3.4.3. Initial treatment with liquids
 - 3.3.4.4. Blood restitution
 - 3.3.4.4.1. Crossmatching tests
 - 3.3.4.4.2. Prevention of hypothermia
 - 3.3.4.4.3. Autotransfusion
 - 3.3.4.4.4. Massive transfusion
 - 3.3.4.4.5. Coagulopathy
 - 3.3.4.4.6. Calcium administration
- 3.4. Systemic inflammatory response syndrome and sepsis in severe trauma
 - 3.4.1. Systemic inflammatory response
 - 3.4.2. CNS
 - 3.4.2.1. Common infections
 - 3.4.2.2. Treatment
 - 3.4.2.3. Antibiotic prophylaxis for CNS infections
 - 3.4.3. Pneumonia
 - 3.4.4. Infections related to fractures
 - 3.4.4.1. Introduction
 - 3.4.4.2. Factors associated with infection
 - 3.4.4.3. Diagnosis of fracture-related infection
 - 3.4.4.4. Infection-related treatment
- 3.5. Coagulation disorders in trauma
 - 3.5.1. Coagulation
 - 3.5.2. Coagulopathy associated with trauma
 - 3.5.2.1. Trauma-associated coagulopathy (TAC)
 - 3.5.2.1.1. Tissue damage and inflammation
 - 3.5.2.1.2. Endothelial Dysfunction
 - 3.5.2.1.3. Shock and hypoperfusion
 - 3.5.2.1.4. Platelet dysfunction
 - 3.5.2.1.5. Coagulation factor consumption and dysfunction
 - 3.5.2.1.6. Hyperfibrinolysis
 - 3.5.2.2. Coagulopathy Secondary to Trauma (CST)
 - 3.5.2.2.1. Associated with the patient's situation
 - 3.5.2.2.1.1. Hypothermia
 - 3.5.2.2.1.2. Acidosis
 - 3.5.2.2.2. Dilutional
 - 3.5.2.2.3. Added
 - 3.5.2.2.3.1. Comorbidities
 - 3.5.2.2.3.2. Concomitant Drug
 - 3.5.3. Diagnosis
 - 3.5.3.1. Conventional tests
 - 3.5.3.1.1. Conventional coagulation tests
 - 3.5.3.1.1.1. Platelet count
 - 3.5.3.1.1.2. Fibrinogen levels
 - 3.5.3.1.2. Viscoelastic test
 - 3.5.3.1.2.1. Reactions and parameters
 - 3.5.3.1.2.2. Interpretation
 - 3.5.3.1.2.3. Advantages and Limitations
 - 3.5.3.2. Evaluation of CIT and prediction of massive transfusion

- 3.5.4. Management of coagulopathy
 - 3.5.4.1. Management of CIT/HECTRA
 - 3.5.4.1.1. Red blood Cell Concentrates
 - 3.5.4.1.2. Fresh frozen plasma
 - 3.5.4.1.3. Platelets
 - 3.5.4.1.4. Fibrinogen
 - 3.5.4.1.5. Protombinic Concentrate Complexes (PCC)
 - 3.5.4.1.6. Tranexamic Acid
 - 3.5.4.1.7. Other hemostatic drugs
 - 3.5.4.1.8. Other Measures
 - 3.5.4.2. Management of hypercoagulability
- 3.6. Massive transfusion
 - 3.6.1. Transfusion
 - 3.6.2. Definition
 - 3.6.3. Transfusion management guidelines in severely traumatized patients
 - 3.6.4. Associated risks
 - 3.6.4.1. Coagulopathy
 - 3.6.4.2. TRALI
 - 3.6.4.3. Infections
- 3.7. Cardiac arrest in trauma
 - 3.7.1. Stop
 - 3.7.2. Etiopathogenesis of traumatic CRA
 - 3.7.3. Cardiopulmonary resuscitation algorithm in traumatic CRA
 - 3.7.4. Prognosis of traumatic CRA
 - 3.7.5. Emergency thoracotomy
 - 3.7.5.1. Indications and Contraindications
 - 3.7.5.2. Role of ultrasound
 - 3.7.5.3. Objectives
 - 3.7.6. Surgical Technique
 - 3.7.6.1. Emergency sternotomy
 - 3.7.6.2. Left thoracotomy
 - 3.7.7. Material and monitoring
- 3.8. Neurogenic shock in trauma
 - 3.8.1. Shock
 - 3.8.2. Memory Clinical differentiation of shock etiology
 - 3.8.2.1. General description of hemorrhagic shock
 - 3.8.3. Classification of spinal cord injury
 - 3.8.3.1. Level
 - 3.8.3.2. Severity of neurological deficit
 - 3.8.3.3. Spinal Cord Syndromes
- 3.9. Thromboembolic disease in trauma and post-traumatic fat embolism syndrome
 - 3.9.1. Thrombo
 - 3.9.2. Venous Thromboembolic Disease
 - 3.9.2.1. Pathophysiology
 - 3.9.2.2. Prophylaxis and pharmacology
 - 3.9.2.2.1. Start
 - 3.9.2.2.2. Anticoagulation and posology
 - 3.9.2.3. Mechanical Prophylaxis
 - 3.9.2.4. Diagnosis
 - 3.9.2.5. Treatment of venous thromboembolic disease
 - 3.9.2.6. Prognosis
 - 3.9.3. Fat Embolism Syndrome
 - 3.9.3.1. Pathophysiology
 - 3.9.3.2. Clinical Symptoms
 - 3.9.3.3. Diagnosis
 - 3.9.3.4. Treatment
 - 3.9.3.5. Prevention
- 3.10. Compartment syndrome and crushing
 - 3.10.1. Compartment Syndrome
 - 3.10.1.1. Definition and localizations
 - 3.10.1.2. Etiology and Clinic
 - 3.10.1.3. Treatment and Prophylaxis
 - 3.10.2. Crush Syndrome
 - 3.10.2.1. Introduction
 - 3.10.2.2. Pathophysiology
 - 3.10.2.3. Evolution
 - 3.10.2.4. Clinical Management

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. Gervas, 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).

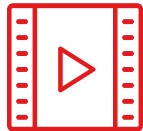
With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and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

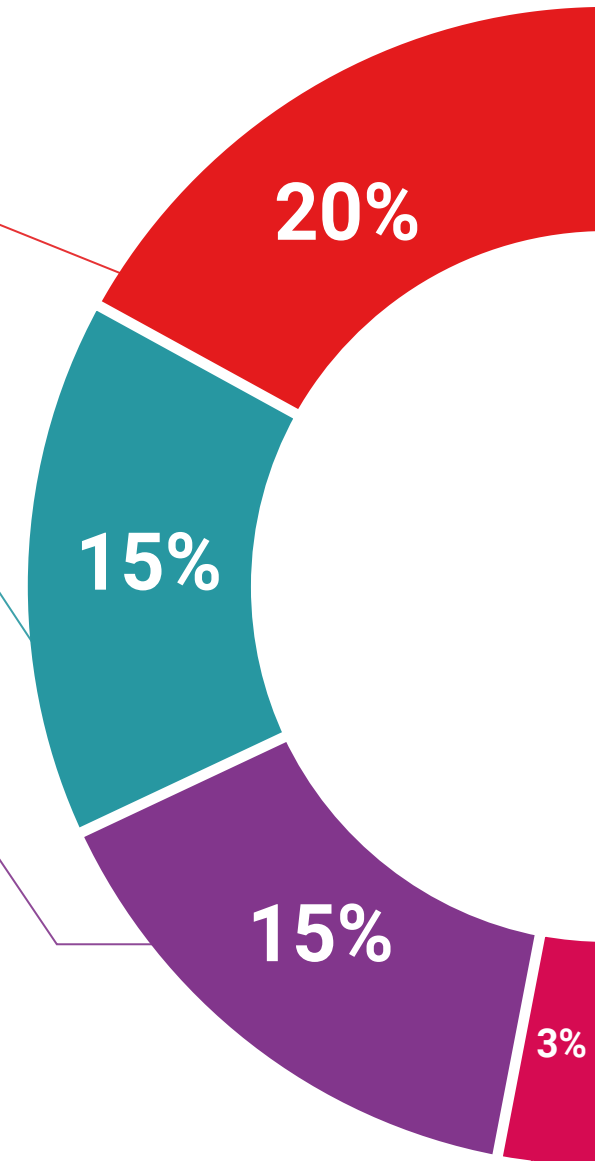
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

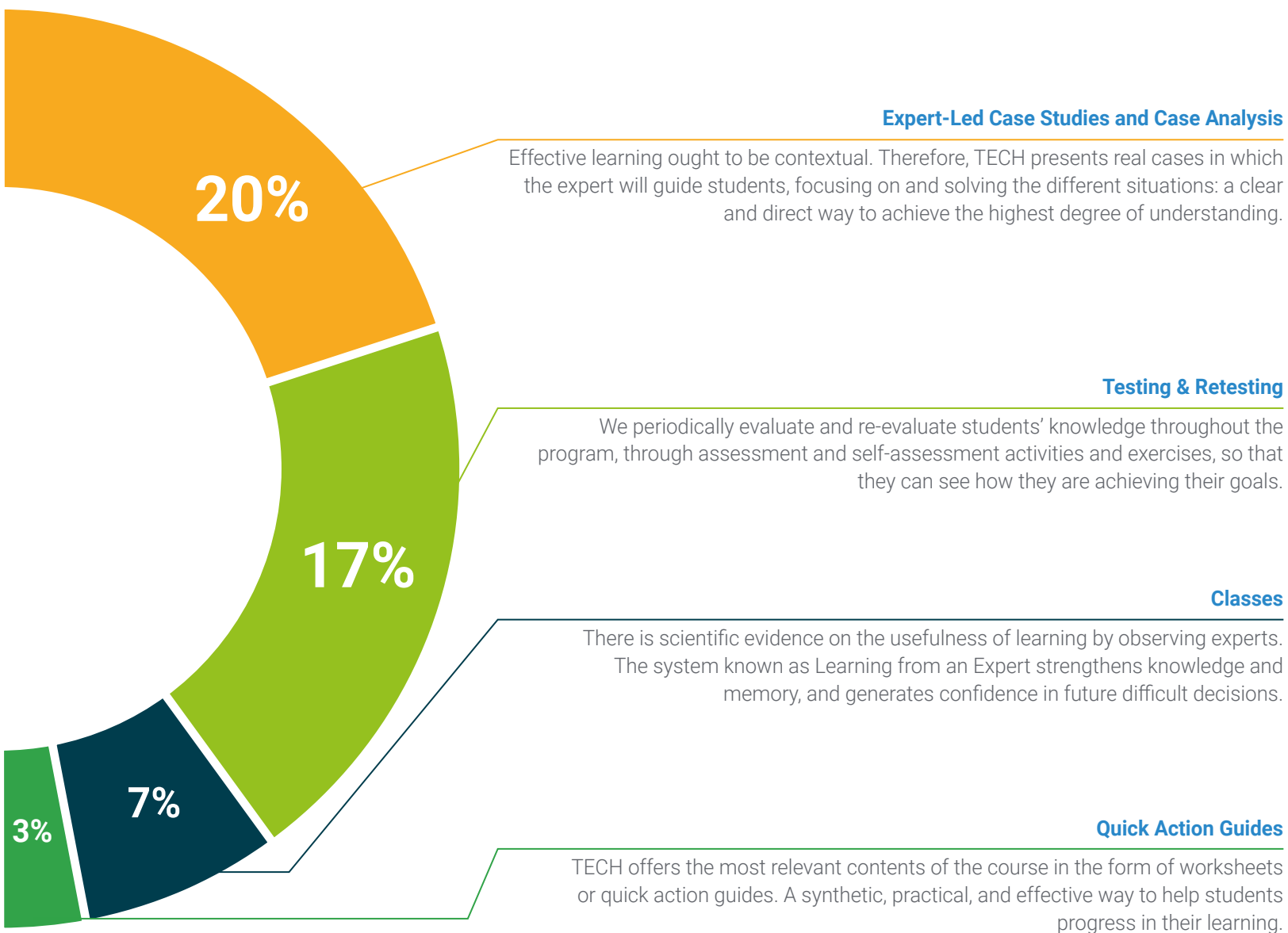
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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.





06 Program

The Postgraduate Diploma in Initial Care of the Severe Trauma Patient in the ICU guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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*Successfully complete this program
and receive your university certification
without traveling or complex paperwork”.*

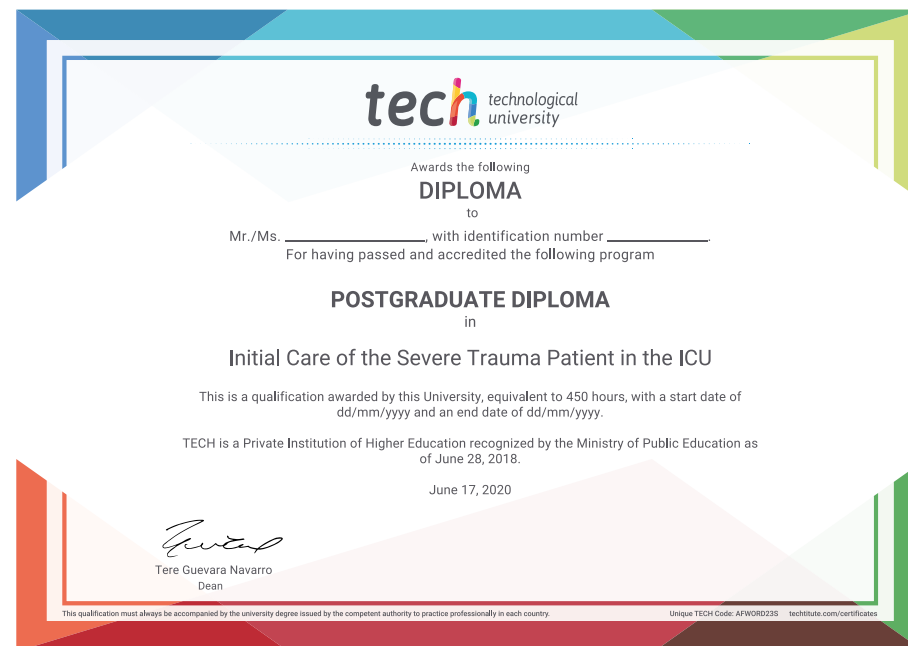
This **Postgraduate Diploma in Initial Care of the Severe Trauma Patient in the ICU** contains the most complete and up-to-date scientific program on the market.

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

The diploma 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 Initial Care of the Severe Trauma Patient in the ICU**

Official N° of Hours: **450 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.



Postgraduate Diploma
Initial Care of the Severe
Trauma Patient in the ICU

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma

Initial Care of the Severe Trauma Patient in the ICU

