Professional Master's Degree

Update on Intensive Care Medicine

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Professional Master's Degree

Update on Intensive Care Medicine

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/medicine/professional-master-degree/master-update-intensive-care-medicine**

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01

Introduction

Intensive Care Medicine is the specialty that takes on the challenge of treating critically ill patients. To achieve this, it is essential to use cutting-edge technology, have effective drugs and a team of professionals who make decisions based on evidence. This program is oriented to respond to the needs of updating specialists for a correct development of medical practice. Therefore, it is a very complete program, nourished with audiovisual material, practical exercises and complementary readings, so that the professional will improve in their professional life.

With the Professional Master's Degree in Update on Intensive Care Medicine you have the opportunity to update your knowledge in a practical way and without sacrificing scientific accuracy, in order to incorporate the latest advances in patient management in the Intensive Care Unit"

To treat critically ill patients, the professional must update their knowledge in order to identify, diagnose and execute a rapid action plan for any emergency that may arise. It is of vital importance to know the procedures and protocols to follow in cases of extreme emergency.

This Professional Master's Degree aims to respond to the educational needs of physicians who work in an Intensive Care Unit based on three fundamental pillars.

The first of these is the constant need for physicians specializing in Intensive Care Medicine to update their knowledge, always in a continuous learning process. It is important to make the most of the time spent studying and updating. Second, a practical and useful approach for daily clinical practice. When treating critically ill patients, decisions need to be made quickly and in accordance with specific criteria. And, last but not least, an interactive and enjoyable teaching methodology that facilitates learning. The use of audiovisual resources, interactive graphics, enriched texts and online platforms that allow to receive the information and have a real learning experience.

This Professional Master's Degree is not intended to be a program on Intensive Care Medicine that makes a systematic and exhaustive review of the entire body of knowledge of the specialty, but rather, one that seeks to select the most relevant topics for clinical practice and offer a useful update on each of them.

This **Professional Master's Degree in Update on Intensive Care Medicine** contains the most complete and up-to-date scientific program on the market. The most important features include:

- More than 80 clinical cases presented by experts in the different specialities
- The graphic, schematic, and practical contents with which they are created, provide provide scientific and healthcare information on those medical disciplines that are essential to professional practice
- Diagnostic and therapeutic novelties on the management of patients in the Intensive Care Unit
- Presentation of practical workshops on procedures, diagnosis, and treatment techniques
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Clinical practice guidelines on the different pathologies. These guides follow the scientific and pedagogical criteria of the main scientific reference
- All of this will be complemented by 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

Improve your patient care with the knowledge offered by the Professional Master's Degree in Update on Intensive Care Medicine"

This Professional Master's Degree is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge in Intensive Care Medicine, you will obtain a qualification endorsed by TECH Technological University"

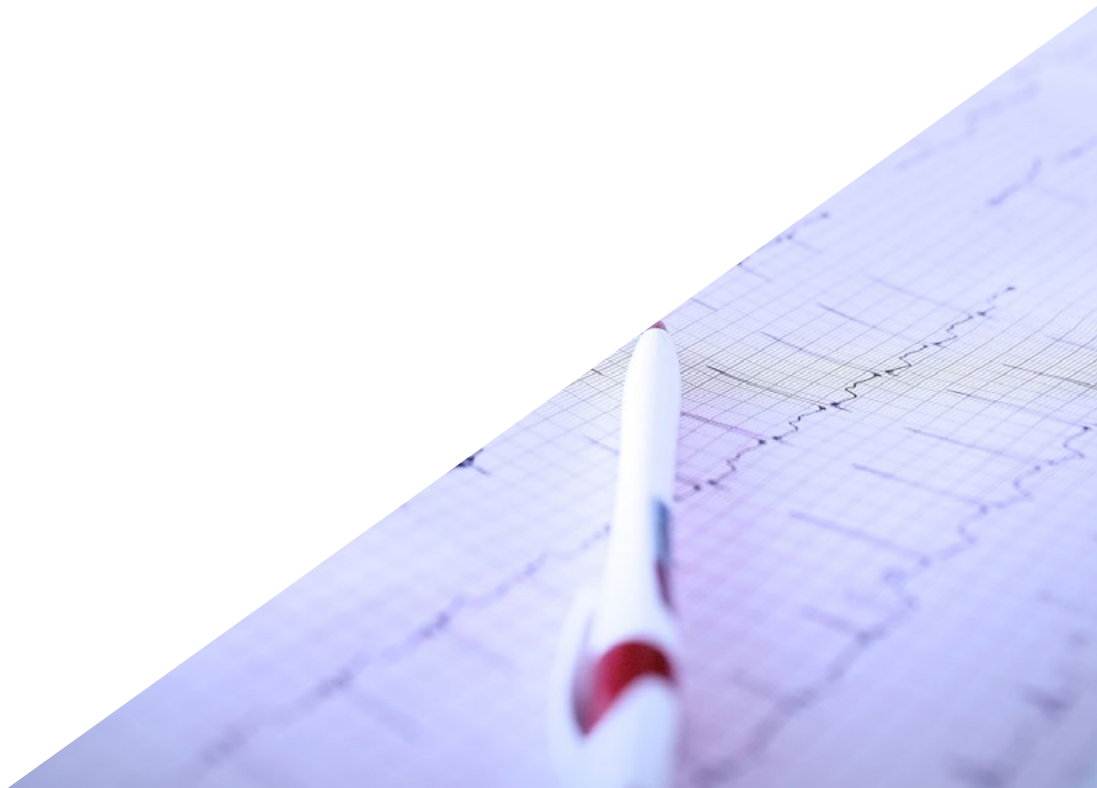
Increase your decision-making confidence by updating your knowledge through this Professional Master's Degree.

Don't miss the opportunity to incorporate the latest advances in critical patient care into your daily medical practice.

Its teaching staff includes specialists of recognized prestige in the field of Intensive Care Medicine, who bring to this program the experience of their work.

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 training, programmed for training in real situations.

This program is focused on Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the specialist will be assisted by an innovative interactive video system, created by renowned and experienced experts in treating critical patients.



02

Objectives

This program is oriented to achieve an effective update of the specialist's knowledge in order to provide quality care based on the latest scientific evidence that guarantees patient safety.

This refresher program will generate a sense of confidence when practising medicine, which will help you grow both personally and professionally"

General objectives

- Ensure optimal care for the critically ill patient
- Address the stabilization, diagnosis and treatment of patients who routinely require intensive care, with a current and evidence-based approach

Make the most of this opportunity and take the step to get up to date with the latest trends in Update on Intensive Care Medicine"

Specific objectives

Module 1. Management in the Intensive Care Unit

- Describe a patient safety program
- Define the usefulness of the electronic medical record in the ICU
- Explain the ICU without walls project for early detection of patients at risk
- Update the principles of ICU humanization and incorporate them into daily practice
- Describe keys to achieving greater quality and excellence in ICU service delivery
- Identify prognostic indicators in the ICU
- Point out and incorporate processes to improve communication, relationship and participation in the care of the family of the critically ill patient
- Explain the different special situations that the intensivist may face in relation to the limitation of therapeutic effort, the decision not to resuscitate or to rule out admission to the ICU

Module 2. Cardiovascular Disorders in the Patient

- Describe the procedure for cardiovascular monitoring of the critically ill patients in order to assess their hemodynamic status
- Address the current management of cardiogenic shock
- Describe the role of echocardiography in the hemodynamic management of the critically ill patient
- Point out the key points in the current postoperative period of cardiac surgery
- Address the current management of acute coronary syndrome
- Indicate the treatment of arrhythmias in the ICU
- Point out the key points in acute aortic pathology
- Analyze the use of blood products in the critically ill patient
- Point out the indications, advantages, disadvantages and reversal of the new anticoagulants
- Explain the prevention and treatment of thromboembolic disease in the ICU
- Describe the current use of extracorporeal membrane oxygenation

Module 3. Update on Cardiopulmonary Resuscitation (CPR) in Intensive Care Medicine and Management of Critically Ill Respiratory Patients

- Explain the procedure for performing excellent cardiopulmonary resuscitation according to current criteria
- Address the management of post-resuscitation syndrome: hypothermia, hemodynamic and respiratory management
- Explain the management of the diagnostic and therapeutic means of the most frequent and relevant pathologies that affect the hemodynamic status of the patient
- Analyze the neurological prognosis after resuscitation
- Describe current strategies for difficult airway management
- Explain the current management of Acute Respiratory Distress Syndrome (ARDS)
- Point out alternatives to conventional mechanical ventilation in ARDS
- Address strategies and monitoring of recruitment maneuvers in mechanical ventilation
- Analyze the key points of weaning from mechanical ventilation and extubation
- Describe the function and indications of high flow glasses and noninvasive mechanical ventilation
- Address the prevention of ventilator-associated pneumonia

Module 4. Infectious Pathology in Intensive Care Medicine

- Update the procedures in the management of severe sepsis
- Analyze antibiotic policy in the ICU and resistance management
- Describe bacteremia, catheter sepsis and endocarditis in ICU
- Analyze the role of procalcitonin in the management of infection in the ICU
- Point out the key points in the management of fungal infection in the ICU
- Define severe pneumonia: community-acquired, nosocomial and ventilator-associated
- Describe the signs and symptoms of meningoencephalitis

Module 5. Neurologic Management of Critically Ill Patients

- Update procedures for sedation, analgesia and patient relaxation in the ICU
- Explain the situations that most frequently complicate the evolution of critically ill patients, such as delirium and polyneuropathy in critically ill patients
- Describe the monitoring procedure in the neurocritical patient
- Explain the process of assessing the comatose patient
- Update in the management procedures for hemispheric ischemic stroke, subarachnoid and intraparenchymal hemorrhage
- Define status epilepticus and update management procedures
- Address the prevention and treatment of polyneuropathy in critically ill patients

Module 6. Trauma in Intensive Care Medicine

- Describe the process of initial assessment and stabilization of the severe trauma patient
- Update in the procedures for approaching severe traumatic brain injury
- Explain the role, indications and importance of fluids, transfusion and vasoactive support in the severe trauma patient
- Point out the approach to coagulopathy in the severe trauma patient
- Define and approach the management of the thoracic trauma patient
- Define and approach the management of the patient with abdominal trauma

Module 7. Digestive Critical Care, Nutrition and Metabolism in Critically Ill Patients

- Update procedures for the management of severe pancreatitis
- Describe the admission, prognosis and complications of the cirrhotic patient in the ICU
- Update in the procedures for the management of acute liver failure in the critically ill patient
- Define the current management of acute mesenteric ischemia
- Establish the prevention and management of acute non-variceal upper gastrointestinal bleeding
- Update in the ICU blood glucose management procedures
- Describe hyperglycemic crises: ketoacidosis and hyperosmolar coma
- Update in the procedures for the management of enteral nutrition complications
- Define thyrotoxicosis and myxedema coma and explain their diagnostic and therapeutic management

Module 8. Renal Management of Critically Ill Patients and Organ Donation and Transplantation in Intensive Care Medicine

- Update in the management procedures for renal management of the critically ill patient
- Describe the signs and symptoms of Renal Pathology
- Incorporate up-to-date therapeutic procedures in renal pathology into clinical practice
- Identify the key points in the use of continuous extrarenal depuration techniques in the ICU
- Analyze the use of citrate in continuous techniques
- Describe the process of diagnosing brain death
- Update in the organ donor management procedures
- Explain the process of donation to a stopped heart
- Update the procedures for the management of heart transplant recipient patients
- Gain an up-to-date understanding of the procedures for dealing with the recipient of liver transplantation patients
- Gain an up-to-date understanding of the procedures for dealing with the recipient of lung transplantation patients

Module 9. Water, Electrolyte and Acid-Base Balance Disorders

- Define the physiology of water-electrolyte and acid-base equilibrium
- Delve into the alterations of water, potassium, chlorine, calcium, phosphorus and magnesium balance
- Delve into respiratory and metabolic acidosis and alkalosis

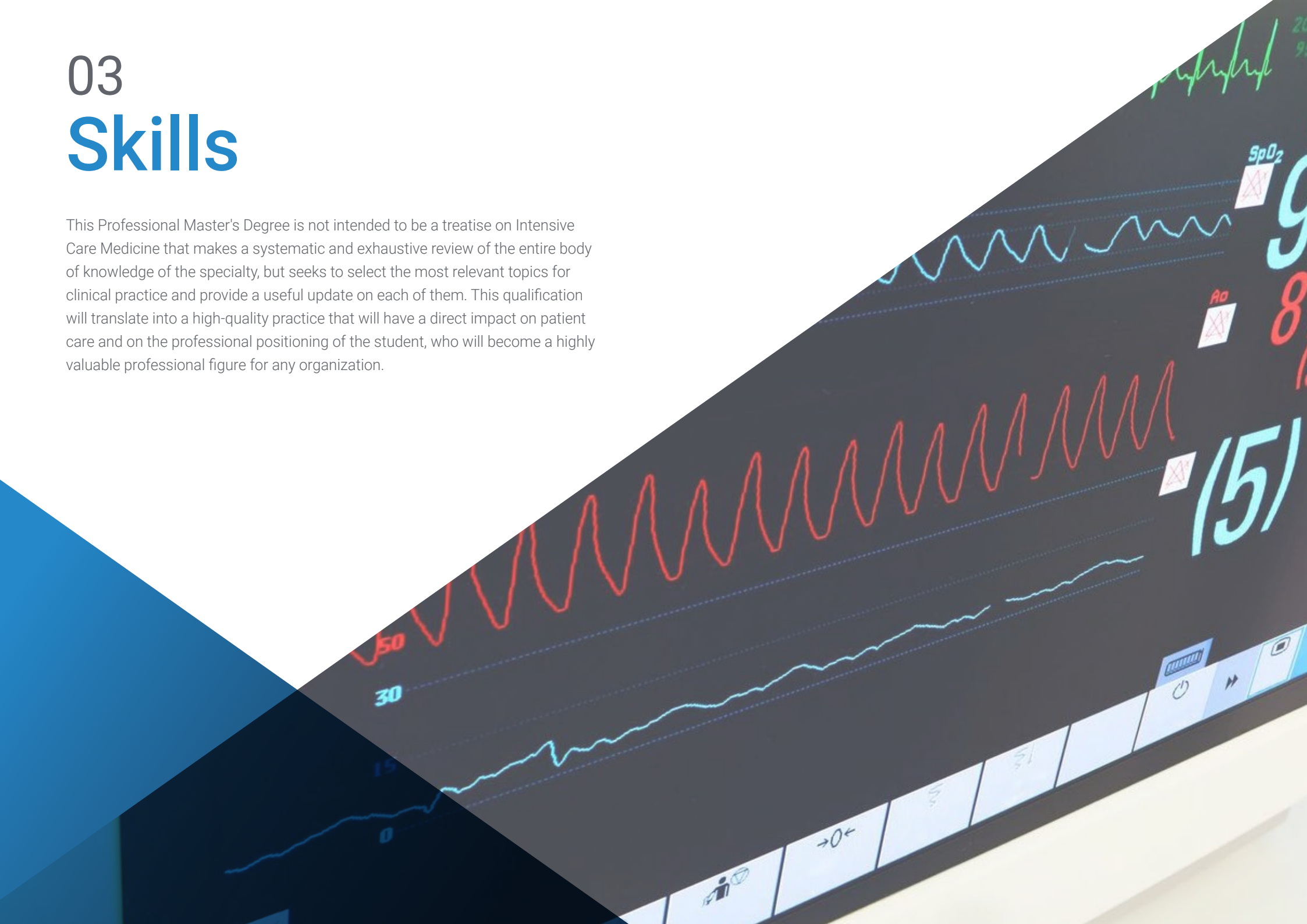
Module 10. Other Pathologies of Interest in Critically Ill Patients

- Analyze the key points of pharmacology in the critical patient and update the procedures for use in different pathologies
- Describe the key points in the management of preeclampsia and hemorrhage in the seriously pregnant and postpartum patient
- Identify the diagnostic role of ultrasound in the ICU and incorporate it into clinical practice
- Update procedures in the initial management of the patient with suspected severe poisoning
- Describe the diagnostic and therapeutic procedures of intoxication in the critically ill patient
- Assess the diagnostic use of ultrasound in the intensive care unit
- Develop the most important aspects of in-hospital and inter-hospital transport of critically ill patients
- Describe the complications of rheumatic pathology in the intensive care unit
- Explain the most relevant aspects in the approach to the oncologic patient in the ICU

03

Skills

This Professional Master's Degree is not intended to be a treatise on Intensive Care Medicine that makes a systematic and exhaustive review of the entire body of knowledge of the specialty, but seeks to select the most relevant topics for clinical practice and provide a useful update on each of them. This qualification will translate into a high-quality practice that will have a direct impact on patient care and on the professional positioning of the student, who will become a highly valuable professional figure for any organization.



At the end of this program, you will be able to integrate the latest scientific findings and technological innovations in Intensive Care Medicine into your work"

General skills

- Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- Know how to apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to the area of study
- Integrate knowledge and face the complexity of making judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments
- Know how to communicate conclusions, knowledge, and supporting arguments to specialized and non-specialized audiences in a clear and unambiguous way
- Acquire the learning skills that will enable further studying in a largely self-directed or autonomous manner

Get up to date with a 100% online program that will help you grow in your profession without neglecting the rest of your daily tasks"

Specific skills

- Describe the procedure for cardiovascular monitoring of the critically ill patient
- Use the diagnostic and therapeutic means of the most frequent and relevant pathologies that affect the hemodynamic status of the patient
- Respond to therapeutic problems of special relevance at the present time
- Perform excellent cardiopulmonary resuscitation, according to current criteria, and take into account the new developments introduced in the latest clinical guidelines
- Manage the patient requiring respiratory support and apply measures to prevent ventilator-associated pneumonia
- Manage the patient with severe infection, with special attention to severe sepsis and infectious pathologies, which most frequently require admission to the ICU
- Manage the patient requiring extrarenal depuration techniques in ICU, with special attention to the use of citrate in continuous techniques
- Describe the process of monitoring the neurocritical patient and the management of some of the severe neurological pathologies that are most frequently admitted to the ICU
- Explain those situations that most frequently complicate the evolution of critically ill patients
- Manage the severe trauma patient and describe more specific situations, such as head, thoracic and abdominal trauma
- Address the management of some of the most frequent and relevant digestive pathologies admitted to the ICU
- Provide the critically ill patient with adequate nutritional support
- Control of glycemia in the critically ill patient and management of metabolic endocrine pathologies, which most frequently require admission to the ICU
- Describe the phases of the organ donation and transplantation process in which the physician specialized in Intensive Care Medicine is involved
- Participate in the management of an ICU, to improve the care of critically ill patients
- Approach the management of the pregnant woman in the ICU, the patient with suspected intoxication
- Define the role of ultrasound as a bedside diagnostic tool
- Use web resources and ICT for personal and professional use
- Perform a documentary search through the electronic tools available on the web, in order to locate quality information
- Conduct a critical and in-depth study on a topic of scientific interest in the field of intensive care
- Communicate result findings after having analyzed, evaluated, and synthesized the data
- Identify the most important documentary databases in the health sciences, in order to perform adequate and reliable searches
- Describe the process of critical reading of scientific publications
- Write material to be published or presented at conferences

04

Structure and Content

The structure of the contents has been designed by a team of professionals, knowledgeable about the implications of medical training in daily practice in the Intensive Care Unit, aware of the current relevance of specialization in the professional, ensuring that the main issues in the current development of critical patient care are addressed.

This Professional Master's Degree in Update in Intensive Care Medicine contains the most complete and up-to-date scientific program on the market"

Module 1. Management in the Intensive Care Unit

1.1. Patient Safety
- 1.1.1. Concept
- 1.1.2. Evolution of Patient Safety
- 1.1.3. Medical Errors
- 1.1.4. Various Definitions
- 1.1.5. Security Culture
- 1.1.6. Risk Management
- 1.1.7. Where Are We?
- 1.1.8. Patient Safety in Intensive Care Units

1.2. Information Systems

1.3. ICU Without Walls
- 1.3.1. Problem: Why Did the ICU Without Walls Model Emerge?
- 1.3.2. Solution: Early Detection of Severity
- 1.3.3. ICU Without Walls Project

1.4. Humanization in the Care of Critically Ill Patients
- 1.4.1. Introduction. HU-CI Project
- 1.4.2. Involvement of Family Members in the Care and Presence in Certain Proceedings
- 1.4.3. Perceived Quality. Satisfaction Surveys
- 1.4.4. Communication Between Professionals
- 1.4.5. Professional Needs. Professional Burnout
- 1.4.6. Post-ICU Syndrome. Psychological Results
- 1.4.7. Humanized Architecture

1.5. Quality and Excellence in the ICU
- 1.5.1. Quality Models
- 1.5.2. EFQM Excellence Model
- 1.5.3. Quality Group in the ICU

1.6. Prognosis in ICU
- 1.6.1. History of Severity Scales
- 1.6.2. Prognosis Scales
- 1.6.3. Comparison of Scales
- 1.6.4. Unresolved Issues

1.7. The Family of the Critically Ill Patient
- 1.7.1. Communicating Bad News
- 1.7.2. Family in the ICU
- 1.7.3. Participation in Care

1.8. Open Door ICU
- 1.8.1. Family, Relatives and Visitors
- 1.8.2. About the Visits and their Organization
- 1.8.3. Why Are they Organized This Way?
- 1.8.4. What Do Patients and Families Want?
- 1.8.5. Is a Change Possible?
- 1.8.6. Proposals for the Future

1.9. The ICU at the End of Life
- 1.9.1. Ethical Principles of Limitation of Life-Sustaining Treatments (LST)
- 1.9.2. Limitation of Life-Sustaining Treatments and Patient's Autonomy
- 1.9.3. Decision-Making Process at Limitation of LST
- 1.9.4. Palliative Care Plan
- 1.9.5. Conflict Management
- 1.9.6. Support to Professionals
- 1.9.7. Decision Not to Resuscitate
- 1.9.8. Organ Donation Considerations
- 1.9.9. Rule Out ICU Admission

1.10. Mortality Stratification Systems in the ICU

Module 2. Cardiovascular Disorders in the Patient

2.1. Hemodynamic Monitoring
- 2.1.1. Basics of Hemodynamic Monitoring
- 2.1.2. Current Utility of the Swan Ganz in Intensive Care Medicine
- 2.1.3. Minimally Invasive Monitoring
- 2.1.4. Non-invasive Monitoring
- 2.1.5. Practical Approach to Hemodynamic Monitoring

2.2. Current Management of Acute Heart Failure and Cardiogenic Shock
- 2.2.1. Prehospital Management
- 2.2.2. Initial Management of AHF without Cardiogenic Shock
- 2.2.3. Cardiogenic Shock

2.3. Role of Echocardiography in the Hemodynamic Management of the Critically Ill Patient
- 2.3.1. Obtaining an Echocardiogram
- 2.3.2. Detection of Structural Alterations
- 2.3.3. Global Cardiac Assessment
- 2.3.4. Preload Assessment
- 2.3.5. Contractility Assessment
- 2.3.6. Afterload Assessment
- 2.3.7. Echocardiogram in the Severe Cardiological and Non-Cardiological Patient

2.4. Key Points in the Current Cardiac Surgery Postoperative Period
- 2.4.1. Patient Reception
- 2.4.2. Uncomplicated Postoperative Period
- 2.4.3. Complications
- 2.4.4. Specific Considerations

2.5. Current Management of Acute Coronary Syndrome (ACS)
- 2 .5.1. Introduction. Epidemiology
- 2.5.2. Concept: Definition and Classification
- 2.5.3. Risk Factors. Precipitating Factors
- 2.5.4. Clinical Presentation
- 2.5.5. Diagnosis. ECG, Biomarkers, Non-invasive Imaging Techniques
- 2.5.6. Risk Stratification
- 2.5.7. ACS Treatment: Pharmacological Strategy, Reperfusion Strategy (Coronary Intervention, Fibrinolysis, Coronary Artery Revascularization Surgery)
- 2.5.8. Systemic Complications of ACS
- 2.5.9. Cardiological Complications of ACS
- 2.5.10. Mechanical Complications of ACS

2.6. Arrhythmias in ICU
- 2.6.1. Bradyarrhythmias
- 2.6.2. Tachyarrhythmias

2.7. Acute Aortic Disease

2.8. Use of Blood Products in the Critically Ill Patient

2.9. New Anticoagulants

2.10. Venous Thromboembolic Disease
- 2.10.1. Pathophysiology
- 2.10.2. Deep Vein Thrombosis
- 2.10.3. Acute Pulmonary Embolism

2.11. Extracorporeal Membrane Oxygenation in Adults (ECMO)

Module 3. Update on Cardiopulmonary Resuscitation (CPR) in Intensive Care Medicine and Management of Critically Ill Respiratory Patients

3.1. Cardiopulmonary Resuscitation Algorithm
- 3.1.1. Basic Life Support (BLS)
- 3.1.2. Advanced Life Support (ALS)
- 3.1.3. Post-Resuscitation Care (PRC)
- 3.1.4. PRC Training

3.2. Management of Post-Resuscitation Syndrome
- 3.2.1. Post-Cardiac Arrest Syndrome
- 3.2.2. Airway and Breathing
- 3.2.3. Circulation
- 3.2.4. Disability: Measures for Neurological Recovery

3.3. Neurological Damage After Cardiopulmonary Resuscitation. Management and Prognostic Assessment
- 3.3.1. Pathophysiology of Brain Damage
- 3.3.2. Therapeutic Measures aimed at the Control of the Brain Injury
- 3.3.3. Prognosis

3.4. Difficult Airway in the Intensive Care Unit: Assessment and Management

3.5. Acute Respiratory Distress Syndrome

3.6. Alternatives to Conventional Mechanical Ventilation in ARDS

3.7. Recruitment Strategies Based on Increasing Airway Pressure

3.8. Disconnection of Mechanical Ventilation

3.9. Non-Invasive Mechanical Ventilation (NIMV): Indications

3.10. Prevention of Ventilator-Associated Pneumonia

3.11. Electrical Impedance Tomography for Respiratory Monitoring

Module 4. Infectious Pathology in Intensive Care Medicine

4.1. Current Management of Sepsis
- 4.1.1. Definitions of Sepsis
- 4.1.2. Septic Shock
- 4.1.3. Epidemiology of Sepsis
- 4.1.4. Surviving Sepsis Campaign
- 4.1.5. Sepsis Code
- 4.1.6. Treatment of Sepsis
- 4.1.7. Diagnosis and Treatment of Infection

4.2. Antibiotherapy in Intensive Care Units
- 4.2.1. Impact of Antibiotic Use
- 4.2.2. Antibiotic Use Policy at the Individual Level
- 4.2.3. Quality Indicators
- 4.2.4. Resistance Management
- 4.2.5. Zero Resistance Project

4.3. Severe Abdominal Infections in ICU
- 4.3.1. Acute Abdomen and Peritonitis
- 4.3.2. Infectious Complications in the Abdominal Postoperative Period
- 4.3.3. Tertiary Peritonitis

4.4. Intravascular Infections in the ICU
- 4.4.1. Bacteremia
- 4.4.2. Catheter-Related Bacteremia
- 4.4.3. Long-Term Central Venous Catheter-Related Infections
- 4.4.4. Infections Related to Cardiac Devices: Pacemakers and Defibrillators
- 4.4.5. Antibiotic Treatment

4.5. Procalcitonin as a Marker of Sepsis

4.6. Key Points in the Management of Invasive Fungal Infection in the ICU
- 4.6.1. Filamentous Hyphae
- 4.6.2. Invasive Aspergillosis (IA)
- 4.6.3. Mucormycosis
- 4.6.4. Other Filamentous Fungi
- 4.6.5. Yeast
- 4.6.6. Invasive Candidiasis (IC)
- 4.6.7. Cryptococcosis

4.7. Severe Pneumonia
4.8. Bacterial Meningitis, Viral Encephalitis and Other Encephalitis
  4.8.1. Bacterial Meningitis: Key Management Points
  4.8.2. Viral Encephalitis and Other Encephalitides
4.9. Endocarditis
  4.9.1. Classification and Definitions in Infective Endocarditis
  4.9.2. Diagnosis
  4.9.3. Modified Duke Criteria
  4.9.4. Clinical Manifestations of Infective Endocarditis
  4.9.5. Etiology of Infective Endocarditis
  4.9.6. Microbiological Diagnosis
  4.9.7. Echocardiographic Diagnosis
  4.9.8. Treatment
4.10. Multiresistant Bacteria
  4.10.1. The Challenge of Multidrug-Resistant Microorganisms
  4.10.2. Resistances of Gram-- Positive Bacteria
  4.10.3. Resistances of Gram-- Negative Bacteria

Module 5. Neurologic Management of Critically Ill Patients

5.1. Monitoring in the Neurocritical Patient
  5.1.1. Intracranial Pressure Monitoring
  5.1.2. Jugular Bulb Oxygen Saturation
  5.1.3. BIS and Continuous EEG
  5.1.4. Transcranial Doppler
  5.1.5. Role of Imaging Tests (CT and MRI)
5.2. Coma Management
  5.2.1. Definition
  5.2.2. Epidemiology
  5.2.3. Anatomy of Awakening
  5.2.4. Management of the Comatose Patient
  5.2.5. Complementary
5.3. Update on the Management of Ischemic Stroke

5.4. Current Management of Subarachnoid Hemorrhage in the Intensive Care Unit
- 5.4.1. Aneurysmal Subarachnoid Hemorrhage
- 5.4.2. Non-Aneurysmal Spontaneous Subarachnoid Hemorrhage

5.5. Current Management of Intraparenchymal Hemorrhage, Initial Treatment
- 5.5.1. Initial Treatment
- 5.5.2. Treatment of Hypertensive Emergency
- 5.5.3. Indication for surgery

5.6. Status Epilepticus
- 5.6.1. Medical treatment
- 5.6.2. Refractory Status Epilepticus

5.7. Sedation, Analgesia and Relaxation in the ICU: Current Management
- 5.7.1. Analgesia
- 5.7.2. Pain Classification
- 5.7.3. Sedation
- 5.7.4. Neuromuscular Blockade
- 5.7.5. Monitoring of Analgesia
- 5.7.6. Sedation Monitoring
- 5.7.7. Neuromuscular Blockade Monitoring
- 5.7.8. Delirium Monitoring

5.8. Mental Status Alterations in the Critically Ill Patient. Delirium, Agitation and Acute Confusional Syndrome
- 5.8.1. Alterations of the Mental State
- 5.8.2. Delirium
- 5.8.3. Final Considerations

5.9. Management of Cerebral Edema in the ICU

5.10. ICU-Acquired Weakness (ICU-AW)
- 5.10.1 Definition and Epidemiology of ICU-Acquired Weakness (ICU-AW)
- 5.10.2. Clinical Manifestations
- 5.10.3. Pathophysiology
- 5.10.4. Diagnosis
- 5.10.5. Risk Factors
- 5.10.6. Clinical and Prognostic Unraveling
- 5.10.7. Prevention and Treatment

Module 6. Trauma in Intensive Care Medicine

6.1. Initial Trauma Care

6.2. Fluids and Vasoactive Support in the Severe Trauma Patient
- 6.2.1. New Strategies for Trauma Resuscitation
  - 6.2.1.1. Ensuring Adequate Tissue Perfusion
  - 6.2.1.2. Rational Fluid Management
  - 6.2.1.3. Use of Vasopressors
  - 6.2.1.4. Avoidance of Trauma-Induced Coagulopathy
  - 6.2.1.5. Proportionate Transfusion of Blood Products
  - 6.2.1.6. Prohemostatic Drugs

6.3. Transfusion in Elderly Patients

6.4. Cranioencephalic Trauma

6.5. Thoracic Trauma.
- 6.5.1. General: Prehospital Management of Thoracic Trauma
- 6.5.2. General: Initial In-Hospital Management of Blunt Thoracic Trauma
- 6.5.3. General: Initial In-Hospital Management of Penetrating Thoracic Trauma
- 6.5.4. Thoracic Wall Injuries
- 6.5.5. Rib Injuries
- 6.5.6. Sternum and Scapula Injuries
- 6.5.7. Pulmonary Injury
- 6.5.8. Aortic Injury
- 6.5.9. Cardiac Injuries
- 6.5.10. Other Mediastinal Injuries

6.6. Abdominal Trauma.
- 6.6.1. General Aspects
- 6.6.2. Hepatic Trauma
- 6.6.3. Splenic Trauma
- 6.6.4. Genitourinary Trauma
- 6.6.5. Pelvic Trauma
- 6.6.6. Gastrointestinal Trauma

6.7. Spinal Cord Injury: Initial Care
- 6.7.1. Introduction and Epidemiology
- 6.7.2. Pathophysiology
- 6.7.3. Prehospital Management of MRT
- 6.7.4. Primary Assessment: Initial Evaluation and Resuscitation
- 6.7.5. Second Evaluation
- 6.7.6. Radiological Assessment
- 6.7.7. Acute Management of the MRT Patient

6.8. Trauma of Extremities with Vascular Injury
6.9. The Critically Ill Burned Patient
6.10. Mortality in the Polytraumatized Patient

Module 7. Digestive Critical Care, Nutrition and Metabolism in Critically Ill Patients

7.1. Current Management of Severe Pancreatitis
- 7.1.1. Diagnosis and Prognosis: Value of Imaging Tests
- 7.1.2. Complications of Pancreatitis
- 7.1.3. Therapeutic Approach

7.2. The Cirrhotic Patient in the ICU
- 7.2.1. Acute-On-Chronic Liver Failure Syndrome
- 7.2.2. Pathophysiological Bases
- 7.2.3. Organic Damage in the ACLF
- 7.2.4. Nutritional Support
- 7.2.5. Infection Management
- 7.2.6. Specific Aspects of Advanced Cirrhotic Management in the ICU

7.3. Current Management of Acute Liver Failure
- 7.3.1. Introduction, Definition and Etiology
- 7.3.2. Diagnosis
- 7.3.3. Extrahepatic Manifestations
- 7.3.4. Prognostic Severity Scales
- 7.3.5. Management of Acute Liver Failure

7.4. Acute Mesenteric Ischemia
- 7.4.1. General Mesenteric Ischemia
- 7.4.2. Occlusive Acute Mesenteric Ischemia
- 7.4.3. Mesenteric Ischemia Due to Venous Thrombosis
- 7.4.4. Colonic Ischemia or Ischemic Colitis

7.5. High Non-Varicose Digestive Hemorrhage
- 7.5.1. Causes of Upper Gastrointestinal Hemorrhage (UGH)
- 7.5.2. Initial Therapeutic Management
- 7.5.3. Risk Stratification
- 7.5.4. Management of Specific Causes of ADH Not Caused by Varicose Diseases
- 7.5.5. Endoscopic treatment
- 7.5.6. Angiographic Treatment
- 7.5.7. Surgical Management

7.6. Artificial Nutrition in the ICU
7.7. Hyperglycemic Crises: Ketoacidosis and Hyperosmolar Coma
7.8. Management of Complications Associated with Nutrition
7.9. Critical Thyroid Pathology

Module 8. Renal Management of the Critically Ill Patient and Organ Donation and Transplantation in Intensive Care Medicine

8.1. Key Points in the Use of Continuous Extrarenal Clearance Techniques in the ICU
- 8.1.1. Acute Renal Failure in the ICU
- 8.1.2. Continuous Renal Replacement Techniques (CRRT)
- 8.1.3. Indications for CRRT
- 8.1.4. Selection of Extrarenal Depuration Modality
- 8.1.5. Dose
- 8.1.6. Anticoagulation
- 8.1.7. Technique and Materials

8.2. Anticoagulation with Citrate in Continuous Extrarenal Clearance Techniques
- 8.2.1. Indications for Citrate Anticoagulation
- 8.2.2. Contraindications for Citrate Anticoagulation
- 8.2.3. Metabolic Aspects of Regional Anticoagulation with Citrate
- 8.2.4. Diagram of Calcium Contents and Ci-Ca Complexes Along the Extracorporeal and Blood Circuit
- 8.2.5. Dialysis Liquids
- 8.2.6. Indicative Initial Treatments
- 8.2.7. Anticoagulation and Calcium Replenishment Controls
- 8.2.8. Acid-Base Balance Controls
- 8.2.9. Recommended Laboratory Tests for Citrate Treatment

8.3. Diagnosis of Brain Death
8.4. Current Management of the Organ Donor
8.5. Non-Heart-Beating Donation
8.6. Management of the Cardiac Transplant Recipient Patient
8.7. Management of the Liver Transplant Recipient Patient
8.8. Management of the Lung Transplant Recipient Patient
8.9. Key Points in the Use of Continuous Extrarenal Clearance Techniques in the ICU

Module 9. Water, Electrolyte and Acid-Base Balance Disorders

9.1. Physiology of Water-Electrolyte and Acid-Base Balance
9.2. Use of Blood Gases and Ionograms in Critically Ill Patients
9.3. Alterations in Water Balance
9.4. Sodium Alterations
9.5. Potassium Alterations
9.6. Chlorine Alterations
9.7. Calcium, Phosphorus and Magnesium Alterations
9.8. Respiratory and Metabolic Acidosis
9.9. Respiratory and Metabolic Alkalosis

Module 10. Other Pathologies of Interest in Critically Ill Patients

10.1. Involvement of Pharmacokinetics in Optimizing Antimicrobial Treatment in Critical Patients
10.2. Critical Care in Pregnancy and Peripartum
- 10.2.1. Physiological Changes of Pregnancy
- 10.2.2. Cardiovascular Diseases and Peripartum Cardiomyopathy
- 10.2.3. Acute Respiratory Failure.
- 10.2.4. Preeclampsia
- 10.2.5. Pharmacological Considerations in Pregnant Women
- 10.2.6. Cardiopulmonary Resuscitation in Pregnant Patients
- 10.2.7. Trauma in the Pregnant Woman
- 10.2.8. Septic Shock

10.3. Patient with Acute Intoxication in the ICU
- 10.3.1. General Measures
- 10.3.2. Special Measures
- 10.3.3. Toxidrome

10.4. Ultrasound in the ICU: an Essential Tool for the Severe Patient
- 10.4.1. Ultrasound Imaging
- 10.4.2. Clinical Ultrasound in the ICU
- 10.4.3. Training in Clinical Ultrasound

10.5. Intrahospital Transport of the Critically Ill Patient
- 10.5.1. General Measures
- 10.5.2. Procedure
- 10.5.3. Annex 1: List of Material in the Carrying Case
- 10.5.4. Annex 2: Critical Patient In-Hospital Transport Checklist

10.6. Post-Intensive Care Syndrome
10.7. The Oncohematological Patient with Autoimmune Pathology in ICU
  10.7.1. Epidemiology of the Oncological Patient in ICU
  10.7.2. Admission of the Oncohematological Patient in ICU
  10.7.3. Prognosis of Oncological Patients in ICU
  10.7.4. Admission Criteria of Oncological Patients in ICU
  10.7.5. ICU Test
  10.7.6. Periodic Assessment and Transition to Palliative Treatment
  10.7.7. Patient with Autoimmune Pathology in ICU
  10.7.8. Prognosis
  10.7.9. Rheumatological Emergencies
  10.7.10. Diagnosis
10.8. The Critically Ill Patient with COVID-19 in the ICU
10.9. Abdominal CT in the Critically Ill Patient
10.10. Thoracic CT in the Critically Ill Patient

A unique, key, and decisive opportunity to boost your professional development"

05

Methodology

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

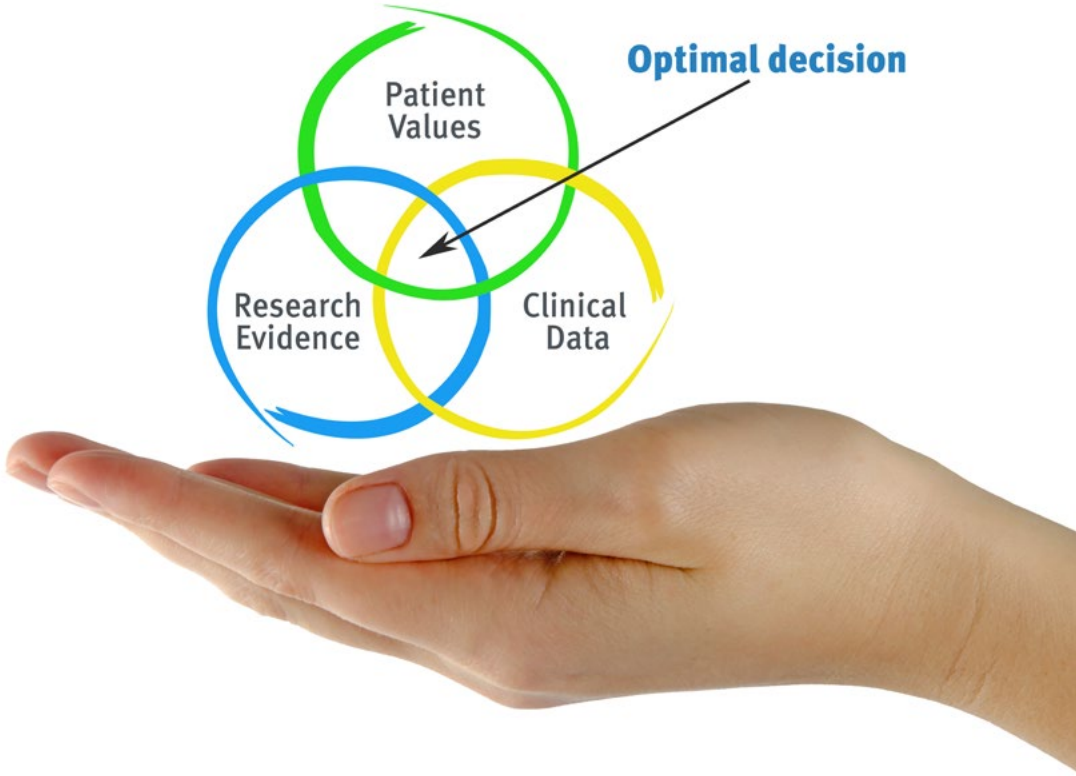
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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

At TECH we use the Case Method

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

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



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

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

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

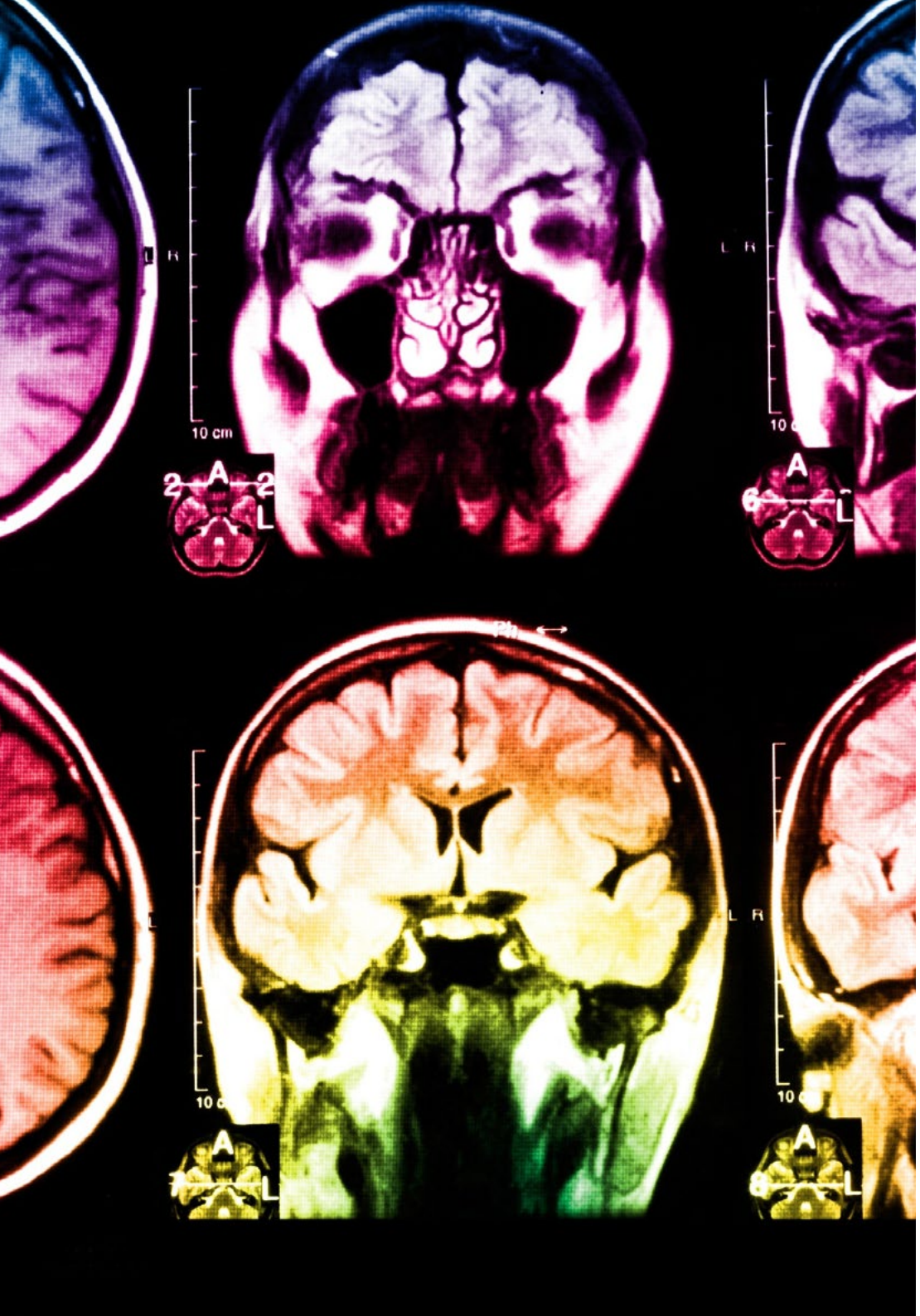
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better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

Relearning Methodology

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

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

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



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

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

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

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

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

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

Study Material

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

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

Surgical Techniques and Procedures on Video

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

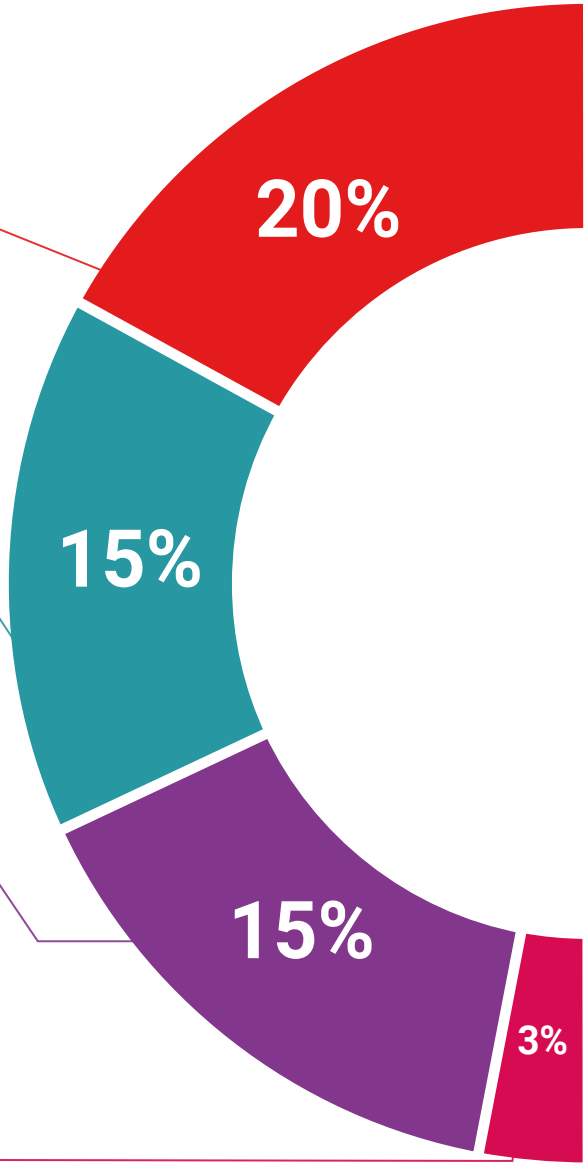
Interactive Summaries

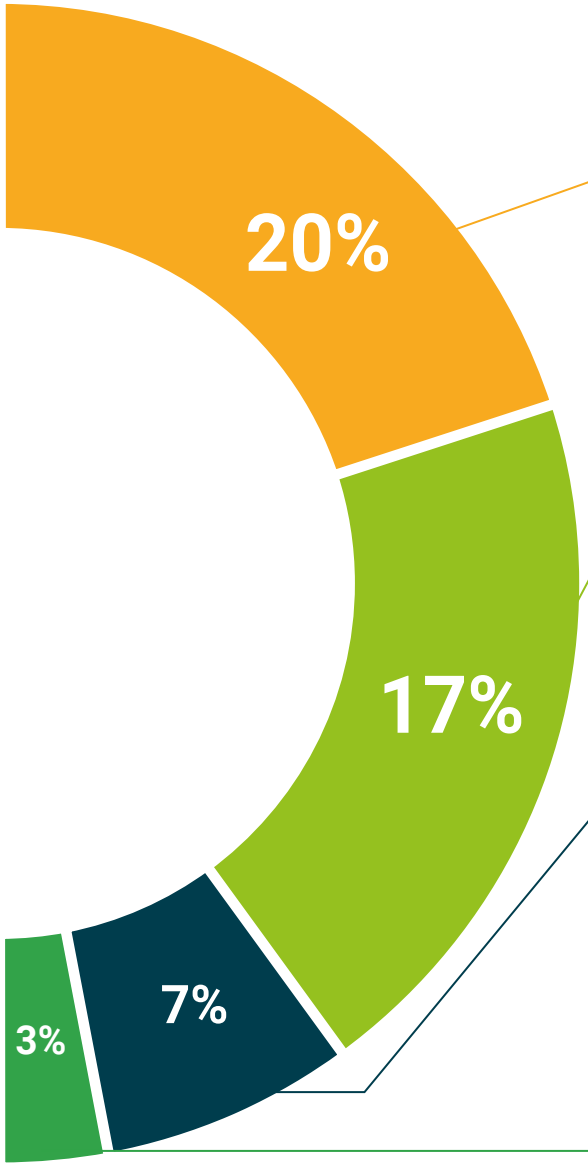
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

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





Expert-Led Case Studies and Case Analysis

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

Testing & Retesting

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

Classes

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

Quick Action Guides

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

06

Certificate

The Professional Master's Degree in Update on Intensive Medicine Care guarantees you, in addition to the most rigorous and updated training, access to a Professional Master's Degree issued by TECH Technological University.

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

This **Professional Master's Degree in Update on Intensive Care Medicine** 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 **Professional Master's Degree** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Professional Master's Degree in Update on Intensive Care Medicine**

Official Nº of hours: **1,500 h.**


tech technological university

Awards the following

DIPLOMA

to

Mr./Ms. _____, with identification number _____.

For having successfully passed and accredited the following program

PROFESSIONAL MASTER'S DEGREE

in

Update on Intensive Care Medicine

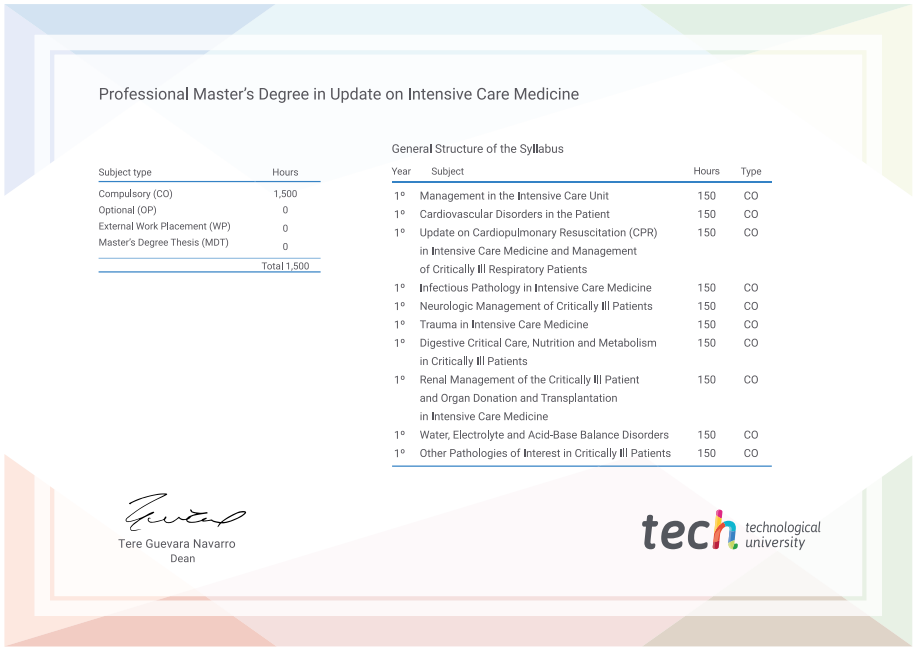
This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


Professional Master's Degree in Update on Intensive Care Medicine

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,500

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Management in the Intensive Care Unit	150	CO
1º	Cardiovascular Disorders in the Patient	150	CO
1º	Update on Cardiopulmonary Resuscitation (CPR) in Intensive Care Medicine and Management of Critically Ill Respiratory Patients	150	CO
1º	Infectious Pathology in Intensive Care Medicine	150	CO
1º	Neurologic Management of Critically Ill Patients	150	CO
1º	Trauma in Intensive Care Medicine	150	CO
1º	Digestive Critical Care, Nutrition and Metabolism in Critically Ill Patients	150	CO
1º	Renal Management of the Critically Ill Patient and Organ Donation and Transplantation in Intensive Care Medicine	150	CO
1º	Water, Electrolyte and Acid-Base Balance Disorders	150	CO
1º	Other Pathologies of Interest in Critically Ill Patients	150	CO

Tere Guevara Navarro
Dean

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*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.

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Professional Master's Degree

Update on Intensive Care Medicine

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree

Update on Intensive Care Medicine

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