

# Professional Master's Degree Emergency Toxicology for Nursing





## Professional Master's Degree Emergency Toxicology for Nursing

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

Website: [www.techtitute.com/in/nursing/professional-master-degree/master-emergency-toxicology-nursing](http://www.techtitute.com/in/nursing/professional-master-degree/master-emergency-toxicology-nursing)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Skills

---

*p. 16*

04

Course Management

---

*p. 20*

05

Structure and Content

---

*p. 26*

06

Methodology

---

*p. 40*

07

Certificate

---

*p. 48*

# 01

# Introduction

The availability and use of toxic substances has increased in recent years due to their increased use in industrial, agricultural or pharmaceutical sectors. These products are also easily accessible to the general population, with the added danger of being within the reach of children. In addition, the increase in suicide attempts due to drug abuse has made toxicological emergencies even more frequent.

Faced with this scenario, the nursing professional must be continuously up to date on the main adverse effects, as well as the origin of the intoxication in order to deal effectively with the poisoning. For this reason, this 100% online degree was created, which seeks to offer the latest scientific information on the management of intoxicated patients in the emergency department through enriched multimedia content developed by specialists in this field.



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*Thanks to this online program, you will be up to date on Emergency Toxicology for Nurses, and you will be able to integrate this current knowledge into your daily clinical practice"*

Pesticides, medicines, alcoholic beverages or poisonous plants are just some of the main causes of poisoning for which patients are treated in the emergency department. Their increased use or consumption, as well as the ease with which they can be acquired and consumed, makes this type of situation frequent in emergency department patient care.

Despite the safety measures and warning messages from the manufacturers of the products, poisonings continue to occur, so the nursing professional must be aware of the latest advances in the management of this type of patient, as well as the substances that can cause effects as serious as death. Thus, to offer the latest information and scientific rigor in this area, TECH has designed this Professional Master's Degree, which has brought together medical specialists and police officers knowledgeable about the main substances and situations in which poisoning can occur.

Thus, over the course of 12 months, the professional will be able to deepen, through multimedia resources, the assessment of the intoxicated patient, the management of the intoxicated patient, the latest treatments used, as well as the toxicology produced by the ingestion of drugs, pharmaceuticals or natural products. In addition, students will be provided with simulations of clinical cases that will bring them closer to situations they may face in their daily practice.

The professional is, therefore, before an excellent opportunity to deepen in Toxicology in Emergency through a program in 100% online format, which can be accessed whenever and wherever you want. All you need is an electronic device with an Internet connection to access the virtual platform where the multimedia content of this degree is hosted. A syllabus, moreover, whose teaching load can be distributed according to your interests. An ideal academic option for those professionals seeking to combine a quality Professional Master's Degree with their personal and/or work responsibilities.

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

- ◆ The development of practical cases presented by experts in Toxicology
- ◆ 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



*A specialized team will take you to learn about the intoxications produced by the latest trends in the consumption of drugs of abuse"*

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*Check 24 hours a day the multimedia resource library of this program and its most current content on the assessment of the intoxicated patient in the Emergency Department”*

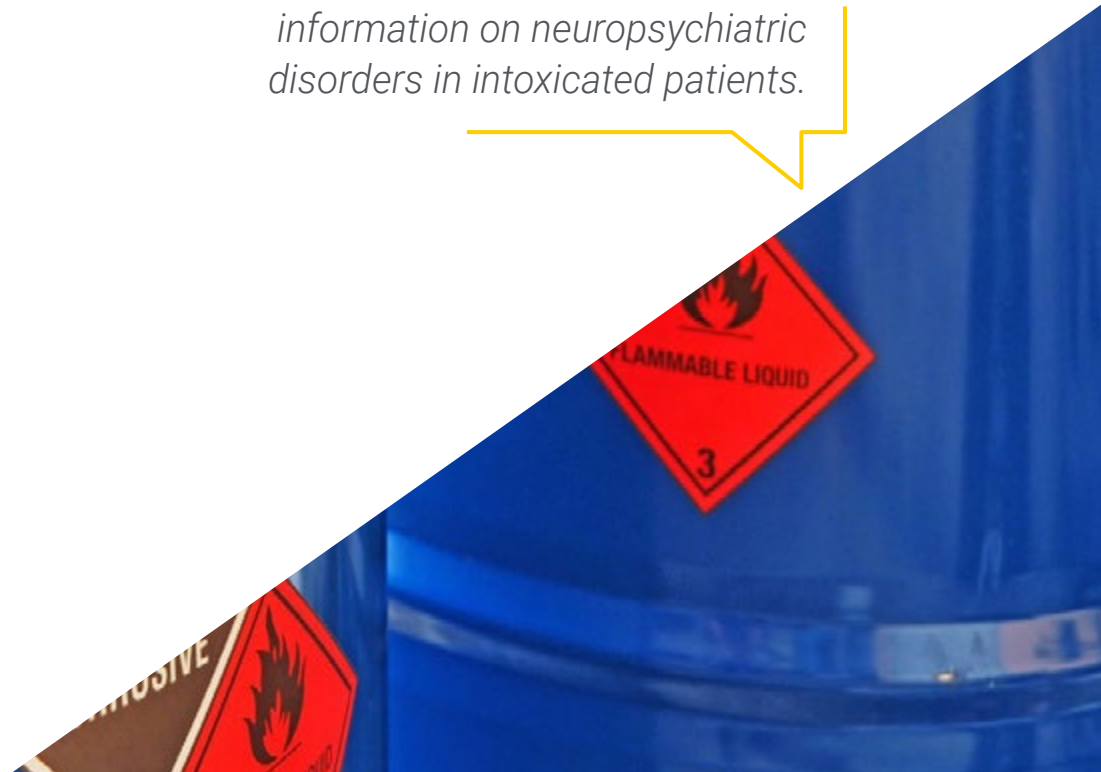
The program’s teaching staff includes professionals from the sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

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

*Take the step and access a Professional Master's Degree that you can access comfortably from your computer at any time of the day. Flexibility designed for professionals like you.*

*Expand your knowledge in Emergency Toxicology for Nurses through this program, where you will find the most comprehensive information on neuropsychiatric disorders in intoxicated patients.*



# 02 Objectives

TECH's main goal in this program is to offer the nursing professional the most updated content in the field of Emergency Toxicology. To this end, it provides students with the most innovative pedagogical tools that will allow them to be up to date in the different therapeutic approaches in the elderly with acute poisoning, in pediatric patients or in people who have natural agents.





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*TECH provides you with video summaries, detailed videos and clinical cases so that you can easily keep up to date on the main toxics in our environment”*



## General Objectives

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- ♦ Define the basic and general principles of care for the severely poisoned patient
- ♦ Identify the main toxics available in our environment
- ♦ Describe the main signs and symptoms related to severe acute poisoning and its organ involvement
- ♦ Implement mechanisms to protect the severely poisoned patients and those around them
- ♦ Detect complications related to the related toxicant or to the patient's health status
- ♦ Explain the process of care, diagnosis and treatment of the severely poisoned patient in all its dimensions





## Specific Objectives

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### Module 1. Introduction

- ♦ Explain the proper way to assess the acutely poisoned patient
- ♦ Explain the process of applying life support in the acutely poisoned patient
- ♦ Apply preventive techniques for gastrointestinal absorption
- ♦ Explain the alterations of the water and electrolyte balance in the acutely poisoned patient
- ♦ Describe toxicokinetics and its implication for emergency treatment

### Module 2. Assessment of the Poisoned Patient

- ♦ Explain the decontamination procedures in acute dermal intoxication
- ♦ Define the toxicity mechanisms in the male genitourinary tract
- ♦ Define the toxicity mechanisms in the female genitourinary tract
- ♦ Explain the effects of xenobiotics
- ♦ Describe the ECG alterations in poisonings that produce cardiac involvement
- ♦ Describe the possible arrhythmias to be detected in acute poisonings
- ♦ Explain the hematological involvement that occurs in acute poisonings

### Module 3. Therapeutic Management of the Poisoned Patient: Life Support

- ♦ Explain the procedure for examination of the patient with fumes inhalation poisoning
- ♦ Define the therapeutic approach to be carried out in the patient poisoned by inhalation of fumes or other respiratory agents
- ♦ Establish the differential diagnosis between the different toxic renal syndromes
- ♦ Identify the clinical pictures that can occur in poisoning with neurological involvement
- ♦ Describe the systemic repercussion of eye poisoning
- ♦ Identify those toxics that cause hepatic affectation and their repercussion at the organic level
- ♦ Identify violent and self-injurious behaviors in relation to psychiatric toxicology

### Module 4. Therapeutic Management of the Poisoned Patient: Specific Treatment

- ♦ Describe the organic repercussions of toxicology in athletes and the different products used
- ♦ Identify poisoning related to possible pharmacological errors in the pediatric patient
- ♦ Describe the action to be taken in case of overdose in pregnant women
- ♦ Explain the principles of teratogenesis and all those products that can produce it
- ♦ Identify products that may pose a risk of poisoning to both the mother and the newborn during breastfeeding
- ♦ Explain the procedure for decontamination of the gastrointestinal tract in acutely poisoned children
- ♦ Describe the epidemiology, etiology and repercussions of acute poisonings in pediatric and neonatal age
- ♦ Define the characteristics of intentional and unintentional poisoning in the elderly
- ♦ Explain the different therapeutic approaches in the acutely poisoned elderly person
- ♦ Describe the specific xenobiotics that can be used in the pediatric and neonatal age group

### Module 5. Therapeutic Management of the Poisoned Patient: Additional Aspects

- ♦ Identify the toxicokinetics of paracetamol and its treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of antimycotics and their treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of anti-inflammatory drugs and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of opioids and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of antiepileptics and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of antihistamines and their treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of antidiabetic and hypoglycemic agents and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of bisphosphonates and antineoplastics and their treatment in case of acute poisoning

### Module 6. Toxicology of Drugs of Abuse

- ♦ Identify the toxicokinetics of selective  $\beta_2$ -adrenergic agonists and their treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of cardioactive steroids and their treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of antiarrhythmic drugs and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of  $\beta$ -adrenergic antagonists and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of antibiotics, antifungals and antivirals and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of antimalarials and antiparasitics and their treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of thyroid and antithyroid drugs and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of antithrombotics, anticoagulants, thrombolytics and antifibrinolytics and their treatment in case of acute poisoning

### Module 7. Toxicology and Pharmacology

- ♦ Identify the toxicokinetics of SSRI and other atypical antidepressants and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of sedative hypnotics and barbiturates and their treatment in case of acute intoxication
- ♦ Identify the toxicokinetics of benzodiazepines and muscle relaxants and their treatment in case of acute poisoning

- ♦ Explain the toxicokinetics of MAOIs and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of local and general anesthetics and their treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of antipsychotics and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of lithium and its treatment in case of acute poisoning
- ♦ Explain phytotherapeutic and vitamin poisoning
- ♦ Identify the toxicokinetics of antiarrhythmic drugs and their treatment in case of acute poisoning

### Module 8. Industrial Poisoning from Fumes

- ♦ Identify the toxicokinetics of phencyclidine and ketamine and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of pyrethroids and insect repellents and how to treat cases of acute intoxication
- ♦ Identify the toxicokinetics of amphetamines and designer drugs and how to treat cases of acute intoxication
- ♦ Explain the toxicokinetics of inhalants and how to treat cases of acute intoxication
- ♦ Explain the toxicokinetics of ethanol and how to treat cases of acute intoxication
- ♦ Identify the toxicokinetics of cannabinoids and marijuana and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of cocaine and its treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of hallucinogens and their treatment in case of acute poisoning



### **Module 9. Industrial Poisoning by Solvents**

- ◆ Identify the toxicokinetics of arsenic and its treatment in case of acute poisoning
- ◆ Explain the toxicokinetics of lead and its treatment in case of acute poisoning
- ◆ Identify the toxicokinetics of iron and its treatment in case of acute poisoning
- ◆ Explain the toxicokinetics of mercury and its treatment in case of acute poisoning
- ◆ Explain the toxicokinetics of cyanides and their treatment in case of acute poisoning

### **Module 10. Industrial Poisoning by Heavy Metal**

- ◆ Identify the toxicokinetics of petroleum derivatives and their treatment in case of acute poisoning
- ◆ Explain the toxicokinetics of asphyxiants and pulmonary irritants and their treatment in case of acute poisoning
- ◆ Identify the toxicokinetics of antiseptics, disinfectants and sterilants and their treatment in case of acute poisoning
- ◆ Explain the toxicokinetics of fluorine and hydrofluoride and their treatment in case of acute poisoning
- ◆ Explain the toxicokinetics of methanol, ethylene glycol and other toxic alcohols and their treatment in case of acute poisoning

### **Module 11. Pesticide or Phytosanitary Product Poisoning in Rural Areas**

- ◆ Identify the toxicokinetics of herbicides and how to treat cases of acute intoxication
- ◆ Explain the toxicokinetics of pyrethroids and insect repellents and how to treat cases of acute intoxication
- ◆ Identify the toxicokinetics of organochlorines and how to treat cases of acute intoxication
- ◆ Explain the toxicokinetics of organophosphates and carbamates and how to treat cases of acute intoxication

**Module 12. Household Poisoning from Cleaning Products, Personal Hygiene Products and Caustic Poisons**

- ♦ Describe the possible serious intoxications caused by cleaning products
- ♦ Identify intoxications produced by personal hygiene products
- ♦ Explain the general measures used and the existing controversies
- ♦ Classify types of caustic poisoning

**Module 13. Poisoning from Natural Agents: Plants, Mushrooms and Animals**

- ♦ Describe the possible serious poisonings caused by marine animals and their treatment
- ♦ Identify and classify poisonous mushrooms and their possible antidotes
- ♦ Describe the possible serious poisonings caused by arthropods, arachnids, tarantulas, scorpions, ants, hymenoptera, butterflies, termites, beetles, etc., and their treatment
- ♦ Identify and classify plants with poisonous potential and their possible antidotes
- ♦ Describe the possible serious poisonings caused by snakes and their treatment





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*With this Professional Master's Degree, you will update your knowledge on intoxications caused by cleaning products or personal hygiene products”*

# 03 Skills

The syllabus of this university degree has been designed with the objective of broadening the competencies of the nursing professional in the diagnosis and management of the intoxicated patient attended in the Emergency Department. In addition to enhancing their skills in the application of the most commonly used antidotes in acute intoxications. To do so, you will also be accompanied by the specialized faculty of this program, who will help you at all times to successfully achieve the knowledge update you are looking for.







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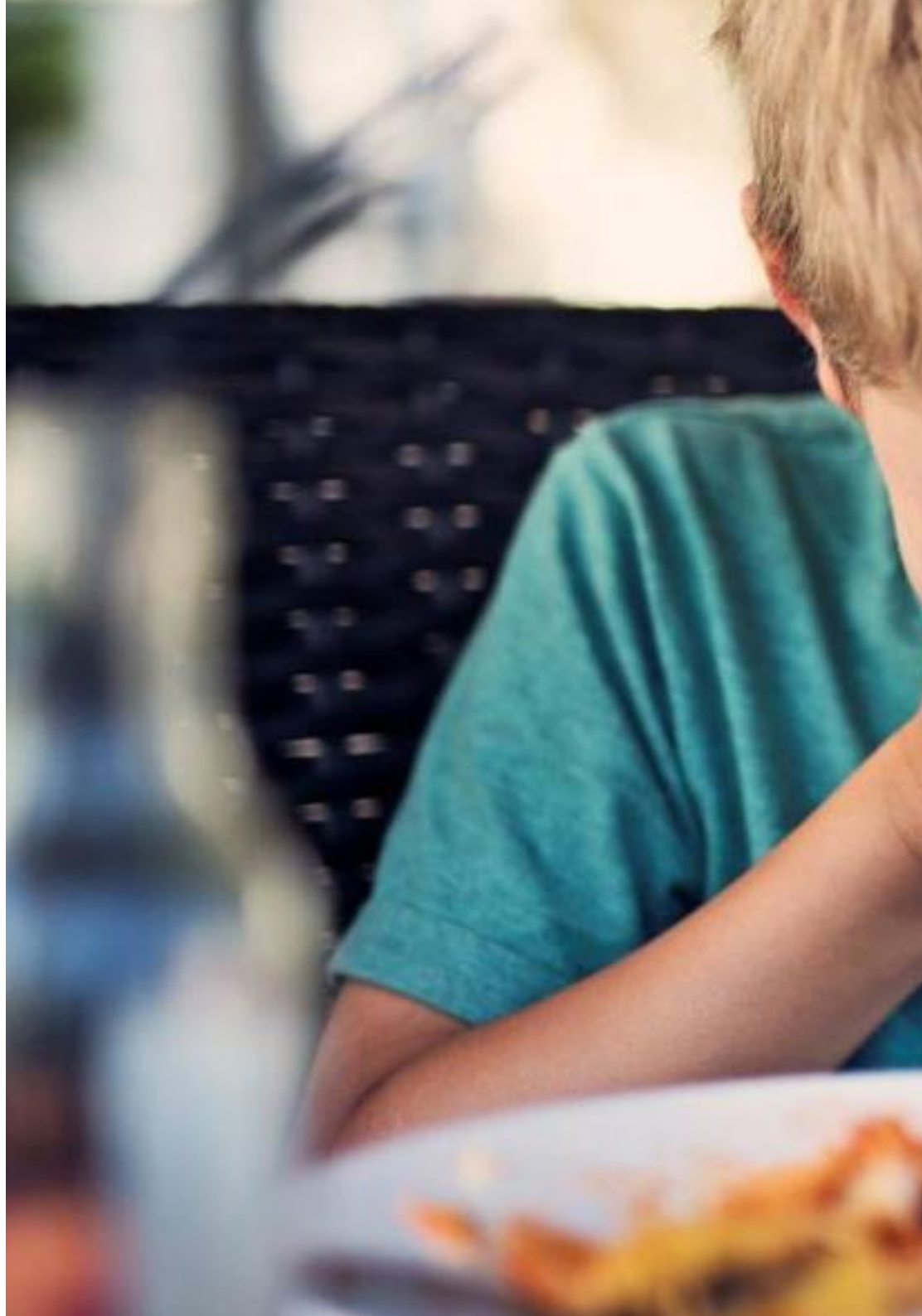
*Enhance your skills for the diagnosis  
of suspected poisoning cases  
thanks to this university degree”*



## General Skills

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- ♦ Understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- ♦ Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study
- ♦ Be able to 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 them to continue studying in a manner that will be largely self-directed or autonomous





## Specific Skills

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- ♦ Identify the clinical pictures that can occur in acute poisoning in order to anticipate serious organ involvement and prevent its complications
- ♦ Describe the toxicokinetics of the most commonly used drugs and other frequently used chemicals in order to establish an appropriate early treatment in each case
- ♦ Identify the most commonly used antidotes and their mechanism of action in order to apply them safely in acute poisonings
- ♦ Apply the most specific and up-to-date care for intoxicated patients
- ♦ Address hallucinogen and synthetic drug intoxications based on the latest scientific evidence

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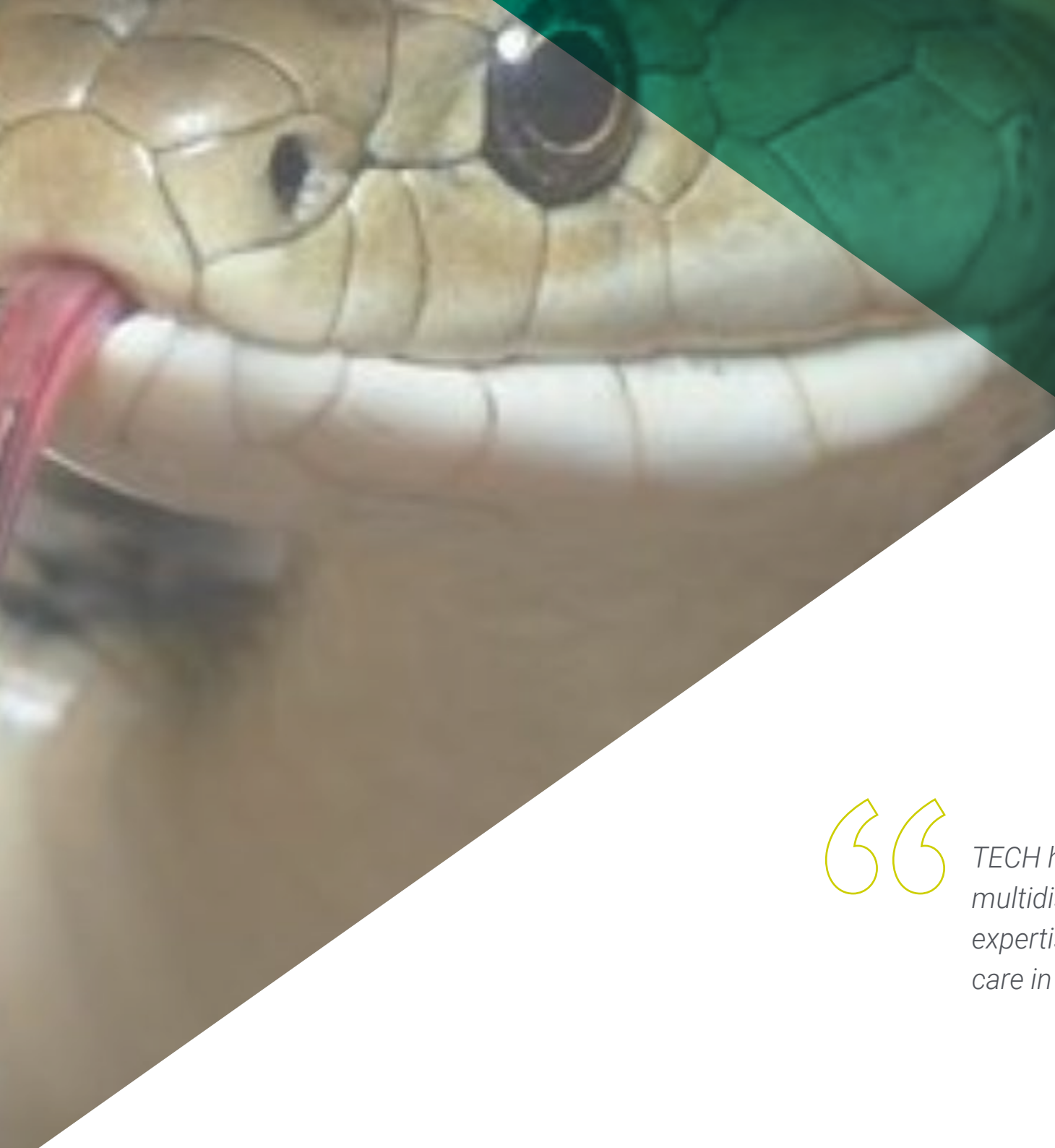
*With this university program you will be up to date in the treatments applied to patients with acute intoxications due to the ingestion of drugs”*

04

# Course Management

TECH has brought together in this Professional Master's Degree a multidisciplinary teaching staff specialized in Emergency Toxicology. His extensive knowledge in this field, as well as his extensive professional experience are guarantees for the students who attend this program in order to keep abreast of the latest scientific information in this field. In addition, thanks to the proximity of the teaching staff, you will be able to resolve any doubts that may arise about the content of this degree.





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*TECH has selected a team of multidisciplinary professionals with expertise in Toxicology and patient care in emergency situations”*

## Management



### Dr. Álvarez Rodríguez, Cesáreo

- ♦ Emergency Physician. Head of the Emergency Unit of Verín Hospital
- ♦ Research Sufficiency by the University of Salamanca
- ♦ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Director of Doctoral Thesis in the area of Clinical Toxicology (Extraordinary Award)
- ♦ Member of the Editorial Board of the journal "Emergencias"
- ♦ Specialist in Family and Community Medicine
- ♦ University Expert in Health Promotion
- ♦ Advanced Life Support Instructor (American Heart Association Accredited)
- ♦ Coordinator of the Toxicology Working Group of SEMES Galicia
- ♦ Scientific Secretary of the Galician Society of Emergency Medicine (SEMES Galicia)
- ♦ Vice-Secretary for Training of the Spanish Society of Emergency Medicine (SEMES)
- ♦ Scientific Committee of the XXI Conference on Glycinic Toxicology and XI Conference on Toxicovigilance (October 2017)
- ♦ President of the Scientific Committee of the XXV Congress of the Spanish Society of Emergency Medicine (SEMES)
- ♦ Degree in Medicine and Surgery from the University of Santiago de Compostela

## Professors

### Dr. Burillo-Putze, Guillermo

- ♦ Emergency Coordinator of the University Hospital Complex of the Canary Islands
- ♦ Specialist in Family and Community Medicine
- ♦ PhD in Medicine from the University of La Laguna
- ♦ Master's Degree in Emergency Medicine
- ♦ University Expert in Toxicology by the University of Sevilla
- ♦ Instructor Advanced Hazardous Materials Life Support (AHLS), American College of Clinical Toxicology, Washington, USA
- ♦ Associate Professor of Emergency Medicine at the Faculty of Medicine of the University of La Laguna
- ♦ Director of the Official University Master's Degree in Urgencies, Emergencies and Critical Care in Nursing of the European University of the Canary Islands
- ♦ Founding trustee of the Spanish Foundation of Clinical Toxicology (FETOC)
- ♦ Member of the Toxicology Group of the Spanish Society of Emergency Medicine (SEMESTOX)
- ♦ Stays at the Clinical Toxicology Unit of the Emergency Department, Clinical Hospital, Barcelona; at the New York City Poison Center- Bellevue Hospital Center, New York; and at the Trauma and Surgical Critical Care Section, Yale-New Haven Hospital, Yale University
- ♦ Degree in Medicine from the University of La Laguna

### Mr. Carnero Fernandez, César Antonio

- ♦ Deputy Inspector of National Police
- ♦ TEDAX-NRBQ Specialist in the TEDAX-NRBQ Unit of the National Police
- ♦ Teacher in TEDAX-NRBQ for national agencies and Security Forces and Corps

### Dr. Bajo Bajo, Angel Ascensiano

- ♦ Specialist in Family and Community Medicine
- ♦ Hospital Emergency Physician at the University Health Care Complex of Salamanca
- ♦ Associate Professor of Emergency Medicine at the University of Salamanca
- ♦ PhD in Medicine from the University of Salamanca
- ♦ Certified in Emergency Medicine by the Spanish Society of Emergency Medicine (SEMES)
- ♦ Member of the Clinical Toxicology Section of the Spanish Association of Toxicology (AETOX)
- ♦ Member of the Clinical Toxicology Working Group of the Spanish Society of Emergency Medicine (SEMETOX)
- ♦ Member of the European Association of Poison Control Centres and Clinical Toxicology (EAPCCT)
- ♦ Founding Member of the Spanish Foundation of Toxicology (FETOC)
- ♦ Degree in Medicine and Surgery from the University of Salamanca

### Ms. Giralde Martínez, Patricia

- ♦ Prehospital Emergency Physician in the Galician 061 Health Emergency Service
- ♦ Professional experience in Hospital Emergency Medicine at Montecelo Hospital
- ♦ Specialist in Family and Community Medicine
- ♦ Master's Degree in Urgencies, Emergencies and Catastrophes by CEU San Pablo University
- ♦ Postgraduate University Professor in the course "Postgraduate Diploma in Urgencies and Emergencies" of the School of Health Sciences of the Complutense University of Madrid
- ♦ General Vice-Secretary of the Galician Society of Emergency Medicine (SEMES Galicia)
- ♦ Degree in Medicine and Surgery from the University of Santiago de Compostela

**Dr. Miguéns Blanco, Iria**

- ◆ Hospital Emergency Physician at the Gregorio Marañón General University Hospital in Madrid
- ◆ Specialist in Family and Community Medicine
- ◆ Professional experience in Pre-Hospital Emergency Medicine in the Emergency Service of the Community of Madrid-SUMMA
- ◆ Master's Degree in Emergency Medicine from the Complutense University of Madrid
- ◆ Master's Degree in Teaching and Digital Competencies in Health Sciences by CEU Cardenal Herrera
- ◆ Master's Degree in University Law and Bioethics from the University of Castilla La Mancha
- ◆ Member of the National Board of Directors of the Spanish Society of Emergency Medicine (SEMES)
- ◆ Degree in Medicine and Surgery from the University of Santiago de Compostela

**Dr. Mayan Conesa, Plácido**

- ◆ Emergency Physician at the University Hospital Complex of A Coruña
- ◆ Specialist in Family and Community Medicine
- ◆ Diploma of Advanced Studies from the University of A Coruña
- ◆ Emergency Physician at the University Hospital Complex of A Coruña
- ◆ Advanced Life Support Teacher
- ◆ Member of the Toxicology Working Group of SEMES Galicia
- ◆ Member of the Board of Directors of the Spanish Society of Urgencies and Emergency Medicine
- ◆ Graduate in Medicine and Surgery from the Universidad de Navarra







**Dr. Maza Vera, María Teresa**

- ◆ Specialist in Family and Community Medicine
- ◆ Member of the Toxicology Working Group of SEMES Galicia
- ◆ Hospital Emergency Physician at the Álvaro Cunqueiro Hospital in Vigo
- ◆ Specialist in Family and Community Medicine
- ◆ Diploma of Advanced Studies in Health Sciences from the University of Vigo
- ◆ Coordinator of the Scientific Committee XXIV Autonomous Congress SEMES Galicia

**Mr. Rodríguez Domínguez, José María**

- ◆ National Police Officer
- ◆ TEDAX-NRBQ Specialist in the TEDAX-NRBQ Unit of the National Police
- ◆ TEDAX-NRBQ teacher for national and international organizations
- ◆ Degree in Biology from the University of Santiago de Compostela

**Dr. Suárez Gago, María del Mar**

- ◆ Assistant Physician of the Emergency Department of the Verín Hospital
- ◆ Specialist in Internal Medicine
- ◆ Member of the Toxicology Working Group of SEMES Galicia
- ◆ Assistant Physician of the Emergency Department of the Verín Hospital
- ◆ Professional experience in out-of-hospital emergency medicine in Portugal
- ◆ VMER (Medical Emergency and Resuscitation Vehicle) accreditation of the Training Center of the National Institute of Medical Emergencies of Oporto (INEM)
- ◆ Degree in Medicine and Surgery University of the Basque Country

05

# Structure and Content

The curriculum of this university degree has been developed by a specialized teaching team, which seeks to offer the professional the most comprehensive and relevant knowledge on Toxicology in Emergencies. Thus, through a theoretical-practical approach, students will delve into the diagnosis of suspected poisoning, life support, the phases of specific treatment of poisoning or hemodynamic stability and instability of the patient. In addition, the Relearning system will lead you to go through this syllabus in a much more natural and progressive way, reducing even the long hours of study.





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*The Relearning system will take you through Medical Toxicology and patient management in the Emergency Department in a much more agile way"*

## Module 1. Introduction

- 1.1. Introduction
- 1.2. Basic Concepts of Toxicology
  - 1.2.1. Concepts of Toxicology, Intoxication, Toxicants and Toxicity
  - 1.2.2. Clinical Toxicology
    - 1.2.2.1. Types of Toxicity
    - 1.2.2.2. Types of Intoxication
    - 1.2.2.3. Dose-Response
    - 1.2.2.4. Causes of Intoxication
    - 1.2.2.5. Toxicity Mechanisms
      - 1.2.2.5.1. Toxicokinetics
      - 1.2.2.5.2. Toxicodynamics
- 1.3. Toxicology in its Historical Context
  - 1.3.1. The Use of Poisons in the Bronze Age
  - 1.3.2. Poisoning in Ancient Times
  - 1.3.3. The Middle Ages
  - 1.3.4. The Modern Age
  - 1.3.5. Contemporary Era
- 1.4. Chemistry as a Weapon: The History of Criminal Toxicology
- 1.5. Radiation as a Crime

## Module 2. Assessment of the Poisoned Patient

- 2.1. Introduction to the Module
  - 2.1.1. Medical History
    - 2.1.1.1. Medical History
    - 2.1.1.2. Physical Examination
    - 2.1.1.3. Complementary Evaluations
  - 2.1.2. Toxic Syndromes
    - 2.1.2.1. Sympathomimetics
    - 2.1.2.2. Cholinergic Drugs
    - 2.1.2.3. Anticholinergics
    - 2.1.2.4. Serotonergic Drugs
    - 2.1.2.5. Opioids
    - 2.1.2.6. Sedative-Hypnotic Drugs
    - 2.1.2.7. Hallucinatory Drugs
  - 2.1.3. Metabolic Acidosis in Toxicology
  - 2.1.4. Diagnosis of Suspected Poisoning and Diagnostic Hypotheses
  - 2.1.5. The Toxicological Information Service (SIT) of the National Institute of Toxicology as a diagnostic and therapeutic assistance. BORRAR
  - 2.1.6. Conclusions and Key Points
- 2.2. Initial Assessment of Patients Suffering from Intoxication
  - 2.2.1. Preliminary
    - 2.2.1.1. Introduction
    - 2.2.1.2. Index
    - 2.2.1.3. Objectives
  - 2.2.2. Hepatic Toxicology
  - 2.2.3. Renal Toxicology
  - 2.2.4. Hematological Toxicity
  - 2.2.5. Neurological and Psychiatric Toxicology
  - 2.2.6. Conclusions and Key Points
  - 2.2.7. Cardiovascular and Respiratory Toxicology

- 2.3. Toxic Organ Involvement
  - 2.3.1. Preliminary
    - 2.3.1.1. Introduction
    - 2.3.1.2. Index
    - 2.3.1.3. Objectives
  - 2.3.2. Reproductive and Perinatal Toxicology
  - 2.3.3. Neonatal and Pediatric Toxicology
  - 2.3.4. Geriatric Toxicology
- 2.4. Group Toxicology

### Module 3. Therapeutic Management of the Poisoned Patient: Life Support

- 3.1. A Complete Overview of Poisoning Treatment
- 3.2. Life Support for Poisoned Patients: Cardiopulmonary Arrest
  - 3.2.1. The Fundamental Pillars of Life Support in Cardiopulmonary Arrest
  - 3.2.2. Respiratory Arrest and Ventilatory Support
  - 3.2.3. Cardiorespiratory Arrest in Poisoned Patients
  - 3.2.4. Conclusions and Key Points
- 3.3. Acute Respiratory Failure in Poisoned Patients and Therapeutic Management
  - 3.3.1. Preliminary
  - 3.3.2. Acute Respiratory Failure due to Airway Obstruction
  - 3.3.3. Acute Respiratory Failure due to Hypoventilation
  - 3.3.4. Acute Respiratory Failure due to Decrease in Inspiratory Oxygen Fraction
  - 3.3.5. Acute Respiratory Failure due to Alveolocapillary Diffusion Impairment
  - 3.3.6. Acute Respiratory Failure due to Altered Oxygen Transport or Tissue Oxygen Utilization
  - 3.3.7. Acute Mixed Respiratory Failure
  - 3.3.8. Conclusions and Key Points
- 3.4. Hemodynamic Stability and Instability in Poisoned Patients
  - 3.4.1. Shock and its Different Types in Poisoned Patients
  - 3.4.2. Therapeutic Management of Shock in Poisoned Patients
  - 3.4.3. Hypotension and Hypertension in Poisoned Patients
  - 3.4.4. Cardiac Arrhythmias in Acute Poisoning
  - 3.4.5. Acute Coronary Syndrome in Poisoned Patients
  - 3.4.6. Conclusions and Key Points

- 3.5. Neuropsychiatric Disorders Associated with Poisoning
  - 3.5.1. Disorders of Consciousness Toxic Coma
  - 3.5.2. Seizures.
  - 3.5.3. Behavioral Disorder: Agitated Patient Management
    - 3.5.3.1. Etiology of Psychomotor Agitation: Toxicology-Related Causes
    - 3.5.3.2. Protective Measures for Healthcare Personnel
    - 3.5.3.3. Verbal, Mechanical and Pharmacological Restraint Measures
  - 3.5.4. Conclusions and Key Points

### Module 4. Therapeutic Management of the Poisoned Patient: Specific Treatment

- 4.1. The Three Phases of the Specific Treatment of Poisoning
- 4.2. Decrease Toxin Absorption
  - 4.2.1. Digestive Decontamination:
    - 4.2.1.1. Emetics
    - 4.2.1.2. Gastric lavage
    - 4.2.1.3. Activated Carbon
    - 4.2.1.4. Cathartics
    - 4.2.1.5. Whole Bowel Irrigation
  - 4.2.2. Skin Decontamination
  - 4.2.3. Ocular Decontamination
  - 4.2.4. Prevention of Parenteral Absorption
  - 4.2.5. Prevention of Pulmonary Absorption
  - 4.2.6. Endoscopy and Surgery
  - 4.2.7. Dilution
  - 4.2.8. Conclusions and Key Points
- 4.3. Increasing Toxicant Elimination
  - 4.3.1. Kidney Cleanse
    - 4.3.1.1. Forced Diuresis
    - 4.3.1.2. Alkaline Diuresis
  - 4.3.2. Extrarenal Purification
    - 4.3.2.1. Dialysis
    - 4.3.2.2. Hemoperfusion, Hemofiltration, Hemodiafiltration
    - 4.3.2.3. Plasmapheresis and Exchange Transfusion
    - 4.3.2.4. Conclusions and Key Points

- 4.4. Antidotes
  - 4.4.1. Main Antidotes
    - 4.4.1.1. Indications, Contraindications, Side Effects and Precautions
    - 4.4.1.2. Dose
  - 4.4.2. Minimum Stock of Antidotes Depending on the Type of Hospital or Health Center
  - 4.4.3. Conclusions and Key Points
- 4.5. Antidotes
  - 4.5.1. Nasogastric or Orogastric Tube Placement Technique and Gastric Lavage
  - 4.5.2. Skin and Ocular Decontamination Techniques

## Module 5. Therapeutic Management of the Poisoned Patient: Additional Aspects

- 5.1. General Outline of Additional Aspects to Consider
- 5.2. The Suicidal Patient and Toxicology. Psychiatric Assessment
  - 5.2.1. Introduction
  - 5.2.2. Risk Factors for Self-Harming Behavior
  - 5.2.3. Determining the Severity of Self-Harm Attempts
  - 5.2.4. Suicidal Patient Management
  - 5.2.5. Conclusions and Key Points
- 5.3. Medical and Legal Aspects of Toxicological Care
  - 5.3.1. Introduction
  - 5.3.2. Report to the Court
  - 5.3.3. Medical and Legal Autopsy
  - 5.3.4. Sampling of the Patient Corpse
  - 5.3.5. Informed Consent and Voluntary Discharge of the Poisoned Patient
  - 5.3.6. The Extraction of Blood Samples for Toxicological Studies in the Emergency Room
  - 5.3.7. Conclusions and Key Points
- 5.4. Protective Measures for Healthcare Personnel
  - 5.4.1. Introduction
  - 5.4.2. Personal Protective Equipment (PPE)
  - 5.4.3. Poison Prevention Measures for Healthcare Personnel
  - 5.4.4. Conclusions and Key Points

- 5.5. General Criteria for Admission to an Intensive Care Unit
  - 5.5.1. Introduction
  - 5.5.2. Criteria Table
  - 5.5.3. Conclusions and Key Points
- 5.6. Toxicant-Induced Rhabdomyolysis
  - 5.6.1. Introduction
  - 5.6.2. Definition and Pathophysiology
  - 5.6.3. General Etiology and Toxicological Causes of Rhabdomyolysis
  - 5.6.4. Clinical Manifestations, Laboratory Tests and Complications
  - 5.6.5. Treatment
  - 5.6.6. Conclusions and Key Points
- 5.7. Toxicant-Induced Methemoglobinemia
  - 5.7.1. Introduction
  - 5.7.2. Pathophysiology
  - 5.7.3. Etiology of Methemoglobinemia
  - 5.7.4. Clinical Manifestations
  - 5.7.5. Suspected, Differential and Confirmatory Diagnosis
  - 5.7.6. Treatment
- 5.8. Hypersensitivity and Anaphylaxis Secondary to Poisonings by Animal Stings or Bites
  - 5.8.1. Introduction
  - 5.8.2. Etiology
  - 5.8.3. Hypersensitivity Types
  - 5.8.4. Clinical Manifestations
  - 5.8.5. Diagnosis
  - 5.8.6. Treatment Management
  - 5.8.7. Conclusions and Key Points
- 5.9. Emergencies Associated with Psychotropic Drugs
  - 5.9.1. Introduction
  - 5.9.2. Neuroleptic Malignant Syndrome
    - 5.9.2.1. Definition and Risk Factors
    - 5.9.2.2. Clinical Manifestations and Differential Diagnosis
    - 5.9.2.3. Treatment

- 5.9.3. Serotonin Syndrome
  - 5.9.3.1. Causes
  - 5.9.3.2. Clinical Manifestations and Differential Diagnosis
  - 5.9.3.3. Treatment
- 5.9.4. Acute Dystonia
- 5.9.5. Drug-Induced Parkinsonism
- 5.9.6. Conclusions and Key Points

## Module 6. Toxicology of Drugs of Abuse

- 6.1. Drug Addiction, Intoxication, Withdrawal Syndromes, Sexual Offenses, Drug Traffickers, Reintegration
- 6.2. Epidemiology of Drugs of Abuse
- 6.3. CNS Depressant Poisoning
  - 6.3.1. Preliminary
    - 6.3.1.1. Introduction
    - 6.3.1.2. Index
    - 6.3.1.3. Objective
      - 6.3.1.3.1. Opiates (Heroin; Methadone; Oxycodone)
      - 6.3.1.3.2. Alcohol Poisoning
      - 6.3.1.3.3. Volatile Inhalable Substances
      - 6.3.1.3.4. Conclusions and Key Points
- 6.4. Psychostimulant Poisoning
  - 6.4.1. Preliminary
    - 6.4.1.1. Introduction
    - 6.4.1.2. Index
    - 6.4.1.3. Objectives
      - 6.4.1.3.1. Cocaine.
      - 6.4.1.3.2. Amphetamines
      - 6.4.1.3.3. Others: (Ephedrine and Pseudoephedrine, Khat, Energy Drinks, Guarana)
      - 6.4.1.3.4. Conclusions and Key Points
- 6.5. Hallucinogen Poisoning
  - 6.5.1. Hallucinogenic Mushrooms (LSD, Amanita Muscaria, Psilocybe)
  - 6.5.2. Hallucinogenic Plants
    - 6.5.2.1. Cannabis
    - 6.5.2.2. Mescaline
    - 6.5.2.3. Stramonium
    - 6.5.2.4. Belladonna
    - 6.5.2.5. Scopolamine (Burundanga)
    - 6.5.2.6. Vegetable Ecstasy
  - 6.5.3. DMT and AMT
  - 6.5.4. Dextromethorphan
  - 6.5.5. Conclusions and Key Points
- 6.6. Poisoning by Synthetic Drugs
  - 6.6.1. Synthetic Opiates (Fentanyl and Meperidine Derivatives)
  - 6.6.2. Dissociative
    - 6.6.2.1. Phencyclidine and Ketamine
  - 6.6.3. Methaqualone Derivatives
  - 6.6.4. Synthetic Phenylethylamines
    - 6.6.4.1. DOM, BOB, 2C-B, MDA
    - 6.6.4.2. Ecstasy (MDMA)
    - 6.6.4.3. Liquid Ecstasy (GHB)
    - 6.6.4.4. Conclusions and Key Points
- 6.7. Psychosocial Component of Drugs of Abuse
- 6.8. Sex and Drugs: Chemsex (Chemical Sex)
  - 6.8.1. What is Meant by Chemsex?
  - 6.8.2. Historical Background and Epidemiologic Profile of Consumers
  - 6.8.3. Risks Associated with the Practice of Chemsex
  - 6.8.4. Most Commonly Used Drugs
  - 6.8.5. Conclusions and Key Points
- 6.9. Language and Drugs
  - 6.9.1. A Language that Emergency Physicians Must Know
  - 6.9.2. Drug Slang
  - 6.9.3. The Slang of Drugs of Abuse
  - 6.9.4. Conclusions and Key Points

- 6.10. A Society Besieged by Drugs
  - 6.10.1. Introduction
  - 6.10.2. The "Botellón", a Toxic Social Phenomenon
  - 6.10.3. Electronic Parties and Drugs of Abuse
  - 6.10.4. The "Jarra Loca"
  - 6.10.5. Conclusions and Key Points
- 6.11. Bodypackers and Bodystuffers in the Emergency Department
  - 6.11.1. Definition
  - 6.11.2. Clinical Manifestations
  - 6.11.3. Diagnosis
  - 6.11.4. Treatment Management
  - 6.11.5. Conclusions and Key Points
- 6.12. Chemical Submission
  - 6.12.1. Concept
  - 6.12.2. Epidemiology
  - 6.12.3. Keys to Diagnosis
  - 6.12.4. Crimes Related to Chemical Submission
  - 6.12.5. Drugs Most Commonly Used in Chemical Submission
  - 6.12.6. Conclusions and Key Points
- 6.13. Withdrawal Syndromes
  - 6.13.1. Introduction and Objectives
  - 6.13.2. Alcohol Withdrawal Syndrome
    - 6.13.2.1. Concept
    - 6.13.2.2. Clinical Manifestations and Criteria Diagnosis
    - 6.13.2.3. Delirium Tremens
    - 6.13.2.4. Alcohol Withdrawal Syndrome Treatment
    - 6.13.2.5. Conclusions and Key Points
  - 6.13.3. Opioid Withdrawal Syndrome
    - 6.13.3.1. Concept
    - 6.13.3.2. Opioid Dependence and Tolerance
    - 6.13.3.3. Clinical Manifestations and Diagnosis of the Withdrawal Syndrome
    - 6.13.3.4. Treatment of Drug Addicts with Withdrawal Syndrome
  - 6.13.4. Detoxification Treatment
  - 6.13.5. Conclusions and Key Points
- 6.14. Addictive Behavior Unit

## Module 7. Toxicology and Pharmacology

- 7.1. Poisoning by Analgesics and Anti-Inflammatory Drugs
  - 7.1.1. Preliminary
    - 7.1.1.1. Introduction
    - 7.1.1.2. Index
    - 7.1.1.3. Objectives
  - 7.1.2. Paracetamol
  - 7.1.3. NSAIDS
  - 7.1.4. Salicylates
  - 7.1.5. Colchicine
  - 7.1.6. Conclusions and Key Points
- 7.2. Psychotropic Drug Poisoning
  - 7.2.1. Preliminary
    - 7.2.1.1. Introduction
    - 7.2.1.2. Index
    - 7.2.1.3. Objectives
  - 7.2.2. Antidepressants
    - 7.2.2.1. Tricyclics
    - 7.2.2.2. Selective Serotonin Reuptake Inhibitors (SSRIs)
    - 7.2.2.3. Monoamine Oxidase Inhibitors (MAOIs)
  - 7.2.3. Lithium
  - 7.2.4. Sedative-Hypnotic Drugs
    - 7.2.4.1. Benzodiazepines
    - 7.2.4.2. Barbiturates
    - 7.2.4.3. Non-Benzodiazepine and Non-Barbiturate Sedative-Hypnotic Drugs
  - 7.2.5. Antipsychotics
  - 7.2.6. Anticonvulsants
  - 7.2.7. Conclusions and Key Points
- 7.3. Antiarrhythmic and Antihypertensive Drug Poisoning
  - 7.3.1. Preliminary
    - 7.3.1.1. Introduction
    - 7.3.1.2. Index
    - 7.3.1.3. Objectives



- 7.3.2. Digoxin
- 7.3.3. Beta-Blockers
- 7.3.4. Calcium Antagonists
- 7.3.5. Conclusions and Key Points
- 7.4. Poisoning by Other Drugs
  - 7.4.1. Preliminary
    - 7.4.1.1. Introduction
    - 7.4.1.2. Index
    - 7.4.1.3. Objectives
  - 7.4.2. Antihistamines
  - 7.4.3. Anticoagulants
  - 7.4.4. Metoclopramide
  - 7.4.5. Hypoglycemics
  - 7.4.6. Conclusions and Key Points

## Module 8. Industrial Poisoning from Fumes

- 8.1. Effect of Different Types of Gases on the Respiratory System
- 8.2. Poisoning due to Inhalation of Fumes
  - 8.2.1. Preliminary
    - 8.2.1.1. Introduction
    - 8.2.1.2. Index
    - 8.2.1.3. Objective
  - 8.2.2. Mechanisms of Toxicity Production and Airway Damage
  - 8.2.3. Clinical Manifestations
  - 8.2.4. Medical History, Examination and Suspected Diagnosis
  - 8.2.5. Treatment Management
  - 8.2.6. Conclusions and Key Points
- 8.3. Irritant Fume Poisoning
  - 8.3.1. Preliminary
    - 8.3.1.1. Introduction
    - 8.3.1.2. Index
    - 8.3.1.3. Objective

- 8.3.2. Hydrogen Sulfide Poisoning
  - 8.3.2.1. Sources of Exposure
  - 8.3.2.2. Toxicokinetics and Pathophysiology
  - 8.3.2.3. Clinical Manifestations and Diagnosis
  - 8.3.2.4. Treatment
- 8.3.3. Fluorine Derivative Poisoning
  - 8.3.3.1. Sources of Exposure
  - 8.3.3.2. Pathophysiology
  - 8.3.3.3. Clinical Manifestations
  - 8.3.3.4. Diagnosis and Treatment
- 8.3.4. Chlorine Derivative Poisoning
  - 8.3.4.1. General Aspects of Poisoning
- 8.3.5. Nitrogen Derivative Poisoning
  - 8.3.5.1. Ammonia Poisoning
  - 8.3.5.2. Other Intoxications
- 8.4. Poisoning by Asphyxiating Fumes: Carbon Monoxide
  - 8.4.1. Preliminary
    - 8.4.1.1. Introduction
    - 8.4.1.2. Index
    - 8.4.1.3. Objective
  - 8.4.2. Definition and Causes of Carbon Monoxide Hazards
  - 8.4.3. Epidemiology of Carbon Monoxide Poisoning: A Known and a Hidden Epidemiology
  - 8.4.4. Sources of Carbon Monoxide Exposure and Medical and Legal Causes of Poisoning
  - 8.4.5. Pathophysiology of Carbon Monoxide Poisoning
  - 8.4.6. Clinical Manifestations
  - 8.4.7. Diagnosis of Suspicion and Diagnostic Confirmation. Pulse Oximetry in the Prehospital Setting
  - 8.4.8. Poisoning Severity Criteria
  - 8.4.9. Treatment of Poisoning
  - 8.4.10. Observation, Admission and Discharge Criteria
  - 8.4.11. Conclusions and Key Points

- 8.5. Chemical Asphyxia: Cyanide
  - 8.5.1. Preliminary
    - 8.5.1.1. Introduction
    - 8.5.1.2. Index
    - 8.5.1.3. Objective
  - 8.5.2. Sources of Exposure
  - 8.5.3. Toxicokinetics and Pathophysiology
  - 8.5.4. Clinical Manifestations, Suspicion and Confirmation Diagnosis
  - 8.5.5. Treatment
  - 8.5.6. Conclusions and Key Points

## Module 9. Industrial Poisoning by Solvents

- 9.1. Introduction to the Module
- 9.2. Hydrocarbon Poisoning
  - 9.2.1. Preliminary
    - 9.2.1.1. Introduction
    - 9.2.1.2. Index
    - 9.2.1.3. Objective
  - 9.2.2. Aliphatic or Linear
    - 9.2.2.1. Short Chain Hydrocarbons: Butane, Propane, Ethane and Methane
    - 9.2.2.2. Long-Chain Hydrocarbons: Pentanes, Hexanes, Heptanes and Octanes
    - 9.2.2.3. Petroleum Distillates: Gasoline, Kerosene, and Others
    - 9.2.2.4. Halogenated Products
    - 9.2.2.5. Carbon Tetrachloride
    - 9.2.2.6. Chloroform
    - 9.2.2.7. Dichloromethane
    - 9.2.2.8. Trichloroethylene
    - 9.2.2.9. Tetrachloroethylene
    - 9.2.2.10. Trichloroethane
  - 9.2.3. Aromatic or Cyclic
    - 9.2.3.1. Benzene
    - 9.2.3.2. Toluene
    - 9.2.3.3. Conclusions and Key Points

- 9.3. Aliphatic Alcohols Poisoning
  - 9.3.1. Preliminary
    - 9.3.1.1. Introduction
    - 9.3.1.2. Index
    - 9.3.1.3. Objective
  - 9.3.2. Methyl Alcohol
  - 9.3.3. Isopropyl Alcohol
  - 9.3.4. Conclusions and Key Points
- 9.4. Glycol Poisoning
  - 9.4.1. Preliminary
    - 9.4.1.1. Introduction
    - 9.4.1.2. Index
    - 9.4.1.3. Objective
  - 9.4.2. Ethylene Glycol
  - 9.4.3. Diethylene Glycol
  - 9.4.4. Propylene Glycol
  - 9.4.5. Conclusions and Key Points
- 9.5. Nitrogen Derivative Poisoning
  - 9.5.1. Preliminary
    - 9.5.1.1. Introduction
    - 9.5.1.2. Index
    - 9.5.1.3. Objective
  - 9.5.2. Aniline
  - 9.5.3. Toluidine
  - 9.5.4. Nitrobenzene
  - 9.5.5. Conclusions and Key Points
- 9.6. Acetone Poisoning
  - 9.6.1. Preliminary
    - 9.6.1.1. Introduction
    - 9.6.1.2. Index
    - 9.6.1.3. Objective
  - 9.6.2. Conclusions and Key Points

## Module 10. Industrial Poisoning by Heavy Metal

- 10.1. Introduction: General Aspects of Heavy Metals and their Main Chelating Agents
- 10.2. Iron Poisoning
  - 10.2.1. Definition, General Aspects
  - 10.2.2. Sources of Exposure
  - 10.2.3. Toxicokinetics and Mechanism of Action
  - 10.2.4. Clinical Manifestations
  - 10.2.5. Diagnosis
  - 10.2.6. Treatment
  - 10.2.7. Conclusions and Key Points
- 10.3. Phosphorus Poisoning
  - 10.3.1. Definition, General Aspects
  - 10.3.2. Sources of Exposure
  - 10.3.3. Toxicokinetics and Mechanism of Action
  - 10.3.4. Clinical Manifestations
  - 10.3.5. Diagnosis
  - 10.3.6. Treatment
  - 10.3.7. Conclusions and Key Points
- 10.4. Lead Poisoning
  - 10.4.1. Definition, General Aspects
  - 10.4.2. Sources of Exposure
  - 10.4.3. Toxicokinetics and Mechanism of Action
  - 10.4.4. Clinical Manifestations
  - 10.4.5. Diagnosis
  - 10.4.6. Treatment
  - 10.4.7. Conclusions and Key Points
- 10.5. Mercury Poisoning
  - 10.5.1. Definition, General Aspects
  - 10.5.2. Sources of Exposure
  - 10.5.3. Toxicokinetics and Mechanism of Action
  - 10.5.4. Clinical Manifestations
  - 10.5.5. Diagnosis
  - 10.5.6. Treatment
  - 10.5.7. Conclusions and Key Points

- 10.6. Arsenic Poisoning
  - 10.6.1. Definition, General Aspects
  - 10.6.2. Sources of Exposure
  - 10.6.3. Toxicokinetics and Mechanism of Action
  - 10.6.4. Clinical Manifestations
  - 10.6.5. Diagnosis
  - 10.6.6. Treatment
  - 10.6.7. Conclusions and Key Points
- 10.7. Cadmium Poisoning
  - 10.7.1. Definition, General Aspects
  - 10.7.2. Sources of Exposure
  - 10.7.3. Toxicokinetics and Mechanism of Action
  - 10.7.4. Clinical Manifestations
  - 10.7.5. Diagnosis
  - 10.7.6. Treatment
  - 10.7.7. Conclusions and Key Points

## Module 11. Pesticide or Phytosanitary Product Poisoning in Rural Areas

- 11.1. Introduction to the Module: General Aspects of Pesticide Poisoning
  - 11.1.1. Concept of Pesticides
  - 11.1.2. Classification of Pesticides
  - 11.1.3. Preventive and Protective Measures for Workers
  - 11.1.4. First Aid at the Poisoning Site
- 11.2. Insecticide Poisoning
  - 11.2.1. Preliminary
    - 11.2.1.1. Introduction
    - 11.2.1.2. Index
    - 11.2.1.3. Objective
  - 11.2.2. Organochlorines
  - 11.2.3. Organophosphates
  - 11.2.4. Carbamates
  - 11.2.5. Pyrethroids
  - 11.2.6. Conclusions and Key Points

- 11.3. Herbicide Poisoning
  - 11.3.1. Preliminary
    - 11.3.1.1. Introduction
    - 11.3.1.2. Index
    - 11.3.1.3. Objective
  - 11.3.2. Diquat
  - 11.3.3. Paraquat
  - 11.3.4. Conclusions and Key Points
- 11.4. Fungicide Poisoning
  - 11.4.1. Conclusions and Key Points
- 11.5. Rodenticide Poisoning
  - 11.5.1. Conclusions and Key Points

## Module 12. Household Poisoning from Cleaning Products, Personal Hygiene Products and Caustic Poisons

- 12.1. Introduction to the Module
- 12.2. Poisoning from Cleaning, Personal Hygiene and Cosmetic Products
  - 12.2.1. Classification According to Toxicity
  - 12.2.2. Specific Poisonings
    - 12.2.2.1. Soaps and Shampoos
    - 12.2.2.2. Nail Polish and Nail Polish Remover
    - 12.2.2.3. Hair Substances: Hair Dyes, Hairsprays, Hair Softeners, etc.
    - 12.2.2.4. Others
  - 12.2.3. General Therapeutic Measures and Controversies
  - 12.2.4. Conclusions and Key Points
- 12.3. Caustic Poisoning
  - 12.3.1. Introduction
  - 12.3.2. Main Caustic Substances
  - 12.3.3. Pathophysiology
  - 12.3.4. Clinical Symptoms
  - 12.3.5. Diagnosis
  - 12.3.6. Acute and Late Complications
  - 12.3.7. Treatment and Attitude to be Followed
  - 12.3.8. Conclusions and Key Points



**Module 13. Poisoning from Natural Agents: Plants, Mushrooms and Animals**

- 13.1. Plant Poisoning
  - 13.1.1. Classification According to Target Organ, Apparatus or System
    - 13.1.1.1. Gastrointestinal
    - 13.1.1.2. Cardiovascular
    - 13.1.1.3. Central Nervous System
    - 13.1.1.4. Others
  - 13.1.2. Conclusions and Key Points
- 13.2. Mushroom Poisoning
  - 13.2.1. Epidemiology of Mushroom Poisoning
  - 13.2.2. Pathophysiology
  - 13.2.3. The Clinical History as a Fundamental Element for Diagnosis
  - 13.2.4. Classification According to the Latency Period of Onset of Clinical Manifestations and Clinical Syndromes
    - 13.2.4.1. Brief-Latency Syndromes
      - 13.2.4.1.1. Acute Mushroom Gastroenteritis (Gastroenteritic, Resinoid or Lividian Syndrome)
      - 13.2.4.1.2. Intolerance Syndrome
      - 13.2.4.1.3. Delirium Syndrome (Mycoatropinic or Anticholinergic)
      - 13.2.4.1.4. Muscarinic Syndrome (Mycocholinergic or Sweat Syndrome)
      - 13.2.4.1.5. Hallucinatory Syndrome (Psychotropic or Narcotic)
      - 13.2.4.1.6. Nitritoid Syndrome (Coprinic or Antabus Effect Syndrome)
      - 13.2.4.1.7. Hemolytic Syndrome
    - 13.2.4.2. Long-Latency Syndromes
      - 13.2.4.2.1. Giromitrile Syndrome (Ogiromitrile)
      - 13.2.4.2.2. Orellanic Syndrome (Cortinaric or Nephrotoxic)
      - 13.2.4.2.3. Phalloid, Hepatotoxic or Cyclopeptide Syndrome
        - 13.2.4.2.3.1. Etiology
        - 13.2.4.2.3.2. Pathophysiology and Toxicokinetics
        - 13.2.4.2.3.3. Clinical Symptoms
        - 13.2.4.2.3.4. Diagnosis
        - 13.2.4.2.3.5. Treatment
        - 13.2.4.2.3.6. Prognosis
  - 13.2.4.3. New Syndromes
    - 13.2.4.3.1. Proximal Syndrome
    - 13.2.4.3.2. Erythromelalgia or Achromelalgia
    - 13.2.4.3.3. Rhabdomyolysis
    - 13.2.4.3.4. Hemorrhagic Syndrome (or Szechwan's Syndrome)
    - 13.2.4.3.5. Neurotoxic Poisoning
    - 13.2.4.3.6. Encephalopathy
  - 13.2.4.4. Conclusions and Key Points
- 13.3. Animal Poisoning: Snakes
  - 13.3.1. Preliminary
    - 13.3.1.1. Introduction
    - 13.3.1.2. Index
    - 13.3.1.3. Objectives
  - 13.3.2. Epidemiology of Snake Bites
  - 13.3.3. Classification of Snakes
  - 13.3.4. Differences between Vipers and Snakes
  - 13.3.5. The Poison Apparatus of Snakes
  - 13.3.6. The Effect of Snake Venoms on Humans
  - 13.3.7. Clinical Symptoms
    - 13.3.7.1. Clinical Syndromes
      - 13.3.7.1.1. Neurological Syndrome
      - 13.3.7.1.2. Hemotoxic-Cytotoxic Syndrome
      - 13.3.7.1.3. Cardiotoxic and Myotoxic Syndromes
      - 13.3.7.1.4. Hypersensitivity Syndromes
    - 13.3.7.2. Clinical Grading of the Intensity of the Poisoning
  - 13.3.8. Treatment
    - 13.3.8.1. Symptoms
    - 13.3.8.2. Specific
  - 13.3.9. Conclusions and Key Points

- 13.4. Animal Bites: Mammals
  - 13.4.1. Preliminary
    - 13.4.1.1. Introduction
    - 13.4.1.2. Index
    - 13.4.1.3. Objectives
  - 13.4.2. Epidemiological Aspects
  - 13.4.3. Clinical-Diagnostic Aspects
  - 13.4.4. Therapeutic Aspects
    - 13.4.4.1. Initial Management
    - 13.4.4.2. Surgical Management: Suture
    - 13.4.4.3. Antibiotic Prophylaxis
    - 13.4.4.4. Tetanus Prophylaxis
    - 13.4.4.5. Rabies Prophylaxis
    - 13.4.4.6. Antiviral Prophylaxis: Anti-Hepatitis B and Anti-HIV
  - 13.4.5. Conclusions and Key Points
- 13.5. Marine Animals
  - 13.5.1. Fish Poisoning
    - 13.5.1.1. Stonefish
    - 13.5.1.2. Viperfish
    - 13.5.1.3. Stingray
  - 13.5.2. Food Poisoning from Fish and Shellfish
    - 13.5.2.1. Paralytic Shellfish Poisoning
    - 13.5.2.2. Scombroidosis: Histamine Poisoning
    - 13.5.2.3. Pufferfish Poisoning
  - 13.5.3. Coelenterate Poisoning
    - 13.5.3.1. Jellyfish Stings
    - 13.5.3.2. Physalia Physalis or the Portuguese Man o' War Sting
    - 13.5.3.3. Treatment
  - 13.5.4. Conclusions and Key Points





- 13.6. Invertebrates
  - 13.6.1. Preliminary
    - 13.6.1.1. Introduction
    - 13.6.1.2. Index
    - 13.6.1.3. Objectives
  - 13.6.2. Insects: Wasps, Bees and Bumblebees
  - 13.6.3. Arachnids
    - 13.6.3.1. Spiders
    - 13.6.3.2. Scorpions
    - 13.6.3.3. Ticks
  - 13.6.4. Conclusions and Key Points
- 13.7. Everything Has an End

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*A 100% online university program that will bring you up to date on the treatments applied to patients with animal bite poisoning"*

06

# 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 Nursing School we use the Case Method

In a given situation, what should a professional do? 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. Nurses learn better, faster, and more sustainably over time.

*With TECH, nurses can experience a learning methodology 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, in an attempt to recreate the real conditions in professional nursing 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. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
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 case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.



*The nurse will learn through real cases and by solving 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 we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. 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 really 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.



### Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, 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 them as many times as you want.



### 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 suggesting that observing third-party experts can be useful.

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.



07

# Certificate

The Professional Master's Degree in Emergency Toxicology for Nursing guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree diploma issued by TECH Technological University.





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

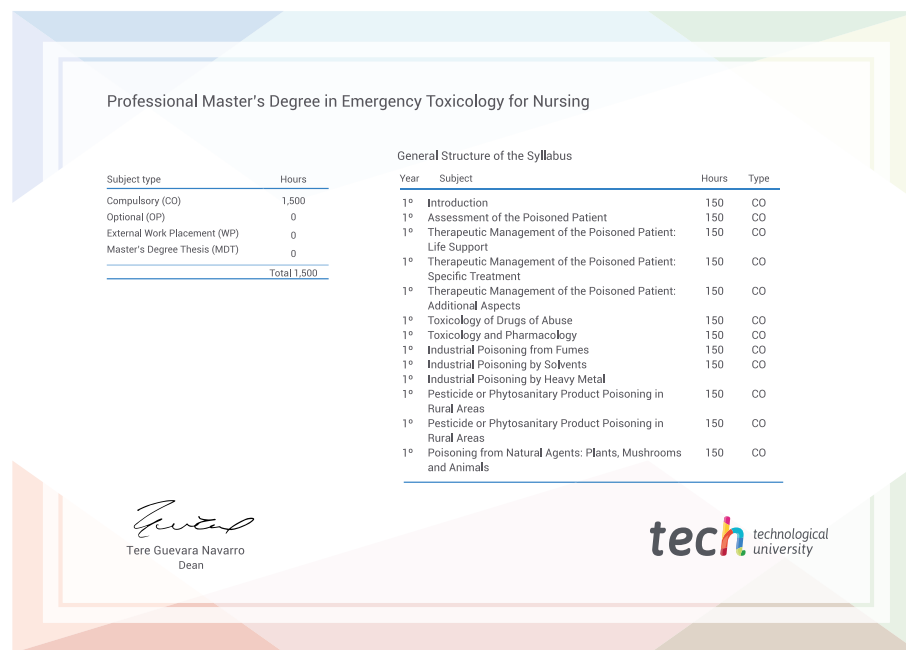
This **Professional Master's Degree in Emergency Toxicology** for Nursing contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Professional Master's Degree** diploma issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH 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 Emergency Toxicology for Nursing**

Official N° of Hours: **1,500 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



**Professional Master's Degree**  
Emergency Toxicology  
for Nursing

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

# Professional Master's Degree

## Emergency Toxicology for Nursing