

Hybrid Master's Degree

Emergency Toxicology for Nursing



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Emergency Toxicology for Nursing

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 ECTS Credits

Website: www.techtute.com/us/nursing/hybrid-master-degree/hybrid-master-degree-emergency-toxicology-nursing

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01

Introduction

Adverse reactions from various exposures to chemicals, drugs or xenobiotics can be irreparable. Toxicology experts are now more concerned than ever about illicit drug use, which is one of the leading causes of overdose deaths. This obliges today's healthcare professionals to know how to act in various toxicology cases and to expand their knowledge in order to deal with increasingly severe emergency cases. This program responds to professional requirements, offering a complete and rigorous syllabus that is complemented by a practical stay in a renowned and prestigious medical center. This is a unique opportunity for nursing graduates who are not only interested to up-to-date their knowledge in the toxicological area, but also wish to go deeper into the real scenario to acquire first-hand the most up to date competencies in this health field.



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Delve into the most up-to-date issues in toxicology for pediatric and adult patients with acute poisoning from a theoretical and practical perspective"

With regard to toxicology cases, there are many people directly and indirectly affected by the effects of its use, such as victims of sexual assault. This last case is becoming more and more frequent, which has set off alarm bells in the health area. In order to respond quickly and effectively to the therapeutic management of the intoxicated patient, specialists must be equipped with up-to-date knowledge and practice skills to perform a correct clinical action.

In line with its academic rigor, TECH offers a Hybrid Master's Degree in Emergency Toxicology for Nursing aimed at nurses who are looking for a complete theoretical and practical training on intoxicated patients. The syllabus of this program ranges from patient assessment, therapeutic management, toxicology of drugs of abuse and pharmacology, to poisoning by gases, solvents, heavy metals, pesticides or phytosanitary products, caustic products, and by natural agents of the environment such as mushrooms or animals.

In addition, TECH's 100% online teaching methodology allows students total flexibility so that they can combine the program with all kinds of professional or personal responsibilities. In this theoretical-practical degree, a study without fixed schedules is proposed, with an online content that can be enjoyed at any time. Likewise, all the content provided in the first instance will also be developed in practice with the 3-week clinical stay that the nurse will be able to enjoy.

The Hybrid Master's Degree, as well as the theoretical period, will be guided at all times by a specific tutor with high competence in Toxicology in Emergencies for Nursing and attached to the hospital center where the nurse's internship will take place. This provides students with the opportunity to apply up-to-dated knowledge and techniques in a real environment, where they can contextualize all the theoretical information acquired and have the support of professionals with years of experience in the sector.

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

- ♦ Development of more than 100 clinical cases presented by nursing professionals with extensive experience in the treatment and management of all types of oncology patients
- ♦ 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
- ♦ Assessment in La Cardiac Arrest
- ♦ Psychiatric evaluation of the suicidal patient in toxicology
- ♦ Examination for intoxication by drugs of abuse such as CNS depressants, psychostimulants, hallucinogens and synthetic drugs
- ♦ Analysis of intoxication by drugs such as analgesics and anti-inflammatory drugs, psychotropic drugs, antiarrhythmics and antihypertensives
- ♦ Evaluation of intoxications in rural areas such as insecticide, herbicide and fungicide intoxications
- ♦ 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
- ♦ Furthermore, you will be able to carry out a clinical internship in one of the best hospital centers

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Be part of the technological evolution in medicine, applying the most effective new therapies after up-to-date your skills with 13 high quality theoretical modules"

In this Hybrid Master's Degree proposal, of a professionalizing nature and blended learning modality, the program is aimed at updating nursing professionals. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge in nursing practice, and the theoretical-practical elements will facilitate the updating of knowledge and will allow decision making in patient management.

Thanks to the multimedia content, developed with the latest educational technology, nursing professionals will benefit from situated and contextual learning, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

Incorporate into your daily practice the basics of animal bite poisoning and manage the surgical field.

Applies knowledge in the respiratory system intoxicated in real clinical settings with emergency patients.



02

Why Study this Hybrid Master's Degree?

Undoubtedly, up-to-date knowledge is an essential factor in the professional improvement of people. Nowadays, with the high level of competition in the labor market, training is a relevant point on the agenda. For this reason, TECH has developed this unique model of theoretical-practical academic program that applies a unique study methodology so that the nursing professional can access the knowledge without complications, since it has a 100% online study system. But you also have the opportunity to broaden your perspective in an on-site internship at a prestigious clinical center. Therefore, you will expand your vision and will be trained in the most differentiating cases of Toxicology in Emergency Medicine. All this, thanks to the perspective of the expert team that participates in the entire development of the program and that will accompany the professional in his or her training goal.



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TECH, at the forefront of higher education, offers you the opportunity to enter into real clinical environments and maximum demand to deepen, with the help of the best specialists, in the latest advances in Emergency Toxicology”

1. Updating from the Latest Technology Available

The area of clinical emergencies requires high-tech equipment and quality materials for the treatment of patients, and even more so in the case of patients affected by toxic substances, since the immediacy of care and its effectiveness will save the patient's life. In this sense, TECH has chosen the most reputable clinical centers where the nursing specialist can be trained to deal with toxicological emergencies.

2. Gaining In-depth Knowledge from the Experience of Top Specialists

The nursing professional will be accompanied and supported by a team of specialists throughout the entire practical period, which is a first-class endorsement and a guarantee of unprecedented up-to-date. Your designated tutor will provide you with the tools to successfully advance in the evaluation and learning process; in addition, you will be able to share experiences with other high-level professionals.

3. Entering First-Class Clinical Environments

For this Practical Training process, TECH has carefully selected all available centers. This is so that the nursing professional can obtain the best knowledge in an agile and dynamic way. As a result, they will be able to experience how to act in the day-to-day work in a demanding, rigorous and exhaustive area.



4. Combining the Best Theory with State-of-the-Art Practice

The modern professional is in search of high-level training that offers diversity and innovation. TECH, aware of this, has developed an exclusive up-to-date and practical training program where the student will be able to obtain the most advanced knowledge and go directly to a relevant health center for 3 weeks, which will allow them to perfect their clinical practice in Emergency Toxicology with a complete preparation of 12 months.

5. Expanding the Boundaries of Knowledge

TECH offers you this Practical Training to be carried out not only in national but also international centers. This way, the Nurse will be able , to expand their frontiers and catch up with the best professionals who practice in first class centers and in different continents. A unique opportunity that only TECH could offer.

“ *You will have full practical immersion at the center of your choice*”

03 Objectives

This Hybrid Master's Degree in Emergency Toxicology for Nursing has been created with the main objective of providing the nursing professional with the latest diagnostic techniques, approaches and practical methodology in the emergency care of intoxicated patients. In addition, the syllabus has been developed by a specialized team with extensive experience in different medical centers of reference to transmit the knowledge to nursing graduates. Thanks to their collaboration, students will learn about real cases and simulations that will be very useful during their practical stay and the treatment of patients with certain toxic pathologies.



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Increase your competences on the complications of the toxic patient's relationships with his or her relatives and health status"



General Objective

- This program includes an exhaustive update on issues such as the main toxins in our environment, the mechanisms to protect the seriously intoxicated patient and those around them, as well as the process of care, diagnosis and treatment of the seriously intoxicated patient in all its dimensions. In addition, the clinical internship, which is part of the second period of this degree, is a turning point in the professional career of the nurse. The nurse's professionalism of the healthcare team with which the students will be instructed and which will be involved in the whole practical process, will not only help them to deal with different real cases of intoxicated patients, but they will also get to know the protocols of action in emergencies and will learn about healthcare skills in the face of serious pathologies

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Enroll now to experience a theoretical and practical experience that will complete you as an emergency healthcare professional"





Specific Objectives

Module 1. Specialization in toxicology

- ◆ 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 dermatological intoxications
- ◆ 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
- ◆ Describe the organic repercussions of toxicology in athletes and the different products used
- ◆ Identify intoxication related to possible pharmacological errors in the pediatric patient
- ◆ Describe the action to be taken in case of overdose in pregnant women

Module 3. Therapeutic management of the intoxicated patient: Life Support

- ◆ Explain the procedure for examination of the patient with smoke 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 intoxicated patient: Specific Treatment

- ◆ 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 intoxicated patient:

Complementary aspects

- ♦ Identify the toxicokinetics of paracetamol and its treatment in case of acute poisoning
- ♦ Identify the toxicokinetics of antifungal drugs and their treatment in case of acute intoxication
- ♦ Identify the toxicokinetics of anti-inflammatory drugs and their treatment in case of acute intoxication
- ♦ Explain the toxicokinetics of opioids and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of antiepileptic drugs and their treatment in case of acute intoxication
- ♦ 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 intoxication

Module 6. Toxicology of Drugs of Abuse

- ♦ Identify the toxicokinetics of phencyclidine and ketamine and their treatment in case of acute intoxication
- ♦ 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 intoxication
- ♦ 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 intoxication

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 intoxication
- ♦ Identify the toxicokinetics of antipsychotics and their treatment in case of acute intoxication
- ♦ 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 intoxication

Module 8. Industrial Poisoning from Fumes

- ♦ Explain the toxicokinetics of fluorine and hydrofluoride and their treatment in case of acute intoxication
- ♦ Identify the toxicokinetics of selective β_2 -adrenergic agonists and their treatment in case of acute intoxication
- ♦ Identify the toxicokinetics of cardioactive steroids and their treatment in case of acute poisoning
- ♦ Explain the toxicokinetics of β -adrenergic antagonists and their treatment in case of acute intoxication
- ♦ 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 intoxication
- ♦ 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 intoxication

Module 9. Industrial solvent poisoning

- ♦ Identify the toxicokinetics of petroleum derivatives and their treatment in case of acute intoxication
- ♦ Explain the toxicokinetics of asphyxiants and pulmonary irritants and their treatment in case of acute intoxication
- ♦ Identify the toxicokinetics of antiseptics, disinfectants and sterilants 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 10. Industrial heavy metal poisoning

- ♦ Identify the toxicokinetics of arsenic and its treatment in case of acute intoxication
- ♦ 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 11. Poisoning in rural areas by pesticides or phytosanitary products

- ♦ Identify the toxicokinetics of herbicides and how to treat cases of acute intoxication
- ♦ Explain the toxicokinetics of pyrethroids and insect repellents and their treatment in case of acute intoxication
- ♦ Identify the toxicokinetics of organochlorines and their treatment in case 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

- ♦ Identify cleaning, personal hygiene and beauty products that pose a risk of poisoning
- ♦ Describe the classification of toxic cleaning products
- ♦ To know the main caustic substances that can cause intoxication

Module 13. Poisoning by 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

04 Skills

The toxicology area requires extremely refined competencies and skills, not only in patient care itself, but also in other nursing responsibilities such as emergency care, respiratory failure and even with suicidal patients. The fact of including teachers with extensive experience in the clinical field means that the contents are complemented with real case studies based on their own experience, in order to continue expanding the nurses competencies.





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Discover now the skills and techniques that will influence your daily work, with a special focus on situations of care for drug addicts”



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
- ♦ Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their 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
- ♦ Students should be able to communicate their conclusions and the ultimate knowledge and rationale behind them to specialized and non-specialized audiences in a clear and unambiguous manner
- ♦ That students possess the learning skills that will enable them to continue studying in a manner that will be largely self-directed or autonomous





Specific Skills

- ◆ Identify the clinical pictures that can occur in acute intoxication 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

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Through this program you will be able to up-to-date your knowledge in Emergency Toxicology, and you will be able to perform critical patient care with the quality they deserve”

05

Course Management

TECH has drawn on a teaching team with years of experience in nursing, toxicology and even law enforcement. They are professionals who have not only contributed their knowledge to the syllabus, but have also included their experience in the action scenario to make the students understand the importance of the protocols when acting with overdose patients.





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It has the support of a teaching staff committed to updating you in the area of toxicology, through knowledge and resources drawn from their own experience”

Management



Dr. Álvarez Rodríguez, Cesáreo

- ♦ Emergency Physician Head of the Emergency Unit of Verín Hospital
- ♦ Chairman of the Research and Teaching, Ethics and Medical Records Committee. Verín Hospital
- ♦ 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)
- ♦ Director of Doctoral Thesis in the area of Clinical Toxicology (Extraordinary Award)
- ♦ Resident Intern. Virgen de la Concha General Hospital of Zamora
- ♦ Area Specialist in Emergency Medicine. Virgen de la Concha General Hospital of Zamora
- ♦ Resident Intern. Professional School of Sports Medicine of the University of Oviedo
- ♦ Primary Care Physician. SERGAS
- ♦ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Degree in Medicine and Surgery from the University of Santiago de Compostela with a Bachelor's Degree in Medicine and Surgery
- ♦ Physical Education and Sports Medicine. Professional School of Sports Medicine of the University of Oviedo
- ♦ Research Sufficiency by the University of Salamanca
- ♦ Specialist in Family and Community Medicine
- ♦ University Expert in Health Promotion
- ♦ Advanced Life Support Instructor (American Heart Association Accredited)
- ♦ Member of the Editorial Board of the journal "Emergencias"

Professors

Dr. Burillo Putze, Guillermo

- ◆ Specialist in Family and Community Medicine
- ◆ Researcher at the Department of Physical and Pharmacological Medicine of the University of La Laguna
- ◆ Former Coordinator of the Emergency Department of the University Hospital Complex of the Canary Islands
- ◆ Doctor in Medicine and Surgery from the University of La Laguna
- ◆ University Expert in Toxicology by the University of Sevilla
- ◆ Advanced Life Support Instructor Course of the School of Clinical Toxicology of Washington, USA
- ◆ Member of: European Register of Toxicologists, Spanish Association of Toxicology

Mr. Carnero Fernandez, César Antonio

- ◆ Deputy Inspector of National Police
- ◆ Specialist in narcotic intoxication in the TEDAX-NRBQ Unit

Dr. Bajo Bajo, Ángel Ascensiano

- ◆ 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
- ◆ Degree in Medicine and Surgery from the University of Salamanca
- ◆ Certified in Emergency Medicine by the Spanish Society of Emergency Medicine of Emergency Medicine (SEMES)
- ◆ Member of: Clinical Toxicology Section of the Spanish Association of Toxicology (AETOX), Clinical Toxicology Working Group of the Spanish Society of Emergency Medicine (SEMETOX), European Association of Poison Control Centres and Clinical Toxicology (EAPCCT), Founder of the Spanish Foundation of Toxicology (FETOC)

Ms. Giralde Martínez, Patricia

- ◆ Prehospital Emergency Physician in the Galician 061 Health Emergency Service
- ◆ Hospital Emergency Physician at the Montecelo Hospital
- ◆ Postgraduate University Professor in the course "University Expert in Emergencies 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)
- ◆ Member of the Scientific Committee of the XXI Jornadas de Toxicología Clínica and XI Jornadas de Toxicología Clínica
- ◆ Toxicology
- ◆ Degree in Medicine and Surgery from the University of Santiago de Compostela
- ◆ Specialist in Family and Community Medicine
- ◆ Master's Degree in Emergencies, Emergencies and Catastrophes by CEU San Pablo University

Dr. Miguéns Blanco, Iria

- ◆ Physician in the Emergency Department of the Hospital General Universitario Gregorio Marañón
- ◆ Specialist in Prehospital Emergency Medicine in the Emergency Service of the Community of Madrid- SUMMA
- ◆ Specialist in Family and Community Medicine
- ◆ Degree in Medicine and Surgery from the University of Santiago de Compostela
- ◆ Master's Degree in Emergency Medicine from Universidad Complutense de Madrid
- ◆ Master's Degree in Teaching and Digital Competencies in Health Sciences by CEU Cardenal Herrera University
- ◆ Master's Degree in Health Law and Bioethics from the University of Castilla-La Mancha
- ◆ SEMES national board member and SEMES Women's Director

Dr. Mayan Conesa, Placido

- ◆ Emergency Coordinator at the Hospital Clínico Universitario de Santiago
- ◆ Emergency Physician at the University Hospital Complex of La Coruña
- ◆ Reviewer of Emergencias magazine
- ◆ Advanced Life Support Teacher
- ◆ Graduate in Medicine and Surgery from the Universidad de Navarra
- ◆ Specialist in Family and Community Medicine
- ◆ Diploma in Advanced Studies from the University of La Coruña
- ◆ Member of SEMES (board of directors)

Dr. Maza Vera, María Teresa

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





Mr. Rodríguez Domínguez, José María

- ◆ National Police Officer in Spain
- ◆ 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 Hospital de Verín
- ◆ Member of the Toxicology Working Group of SEMES Galicia
- ◆ Specialist in Internal Medicine
- ◆ 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

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You will always be guided by the most prominent professionals in the area of study, both in the theoretical part 100% online and in the face-to-face stay”

06

Educational Plan

The content of this program has been carefully planned with a teaching team versed in the field of Toxicology. Likewise, the entire syllabus has been written following TECH's pedagogical methodology, based on Relearning, which exempts students from long hours of study, thanks to the progressive assimilation of the content. It is worth mentioning the theoretical-practical teaching offered by TECH, since thanks to it the specialist will be able to put into practice all the previous information provided and developed in the following list.



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You will have the Virtual Classroom at your disposal 24 hours a day so that you can access it whenever you want and from wherever you want"

Module 1. Specialization in toxicology

- 1.1. Specialization in Medical Toxicology
 - 1.1.1. Justification for Specialization in Medical Toxicology
 - 1.1.2. Objectives
 - 1.1.3. Methods
- 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 and Toxicology of the Toxicology as a center for diagnostic and therapeutic assistance
 - 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 decreased inspiratory oxygen fraction
 - 3.3.5. Acute Respiratory Failure due to Alveolocapillary Diffusion Impairment
 - 3.3.6. Acute respiratory failure due to alteration of oxygen transport or its tissue 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 toxicant 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 Orogastic 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. Objectives
 - 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, KATH, 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. Estramonium
 - 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. Epidemiologies of carbon monoxide poisoning: a well-known and Others hidden
 - 8.4.4. Sources of Carbon Monoxide Exposure and Medical and Legal Causes Intoxication
 - 8.4.5. Pathophysiology of Carbon Monoxide Poisoning

- 8.4.6. Clinical Manifestations
 - 8.4.7. Diagnosis of Suspicion and Diagnostic Confirmation. Pusicooximetry in 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 solvent poisoning

- 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 heavy metal poisoning

- 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

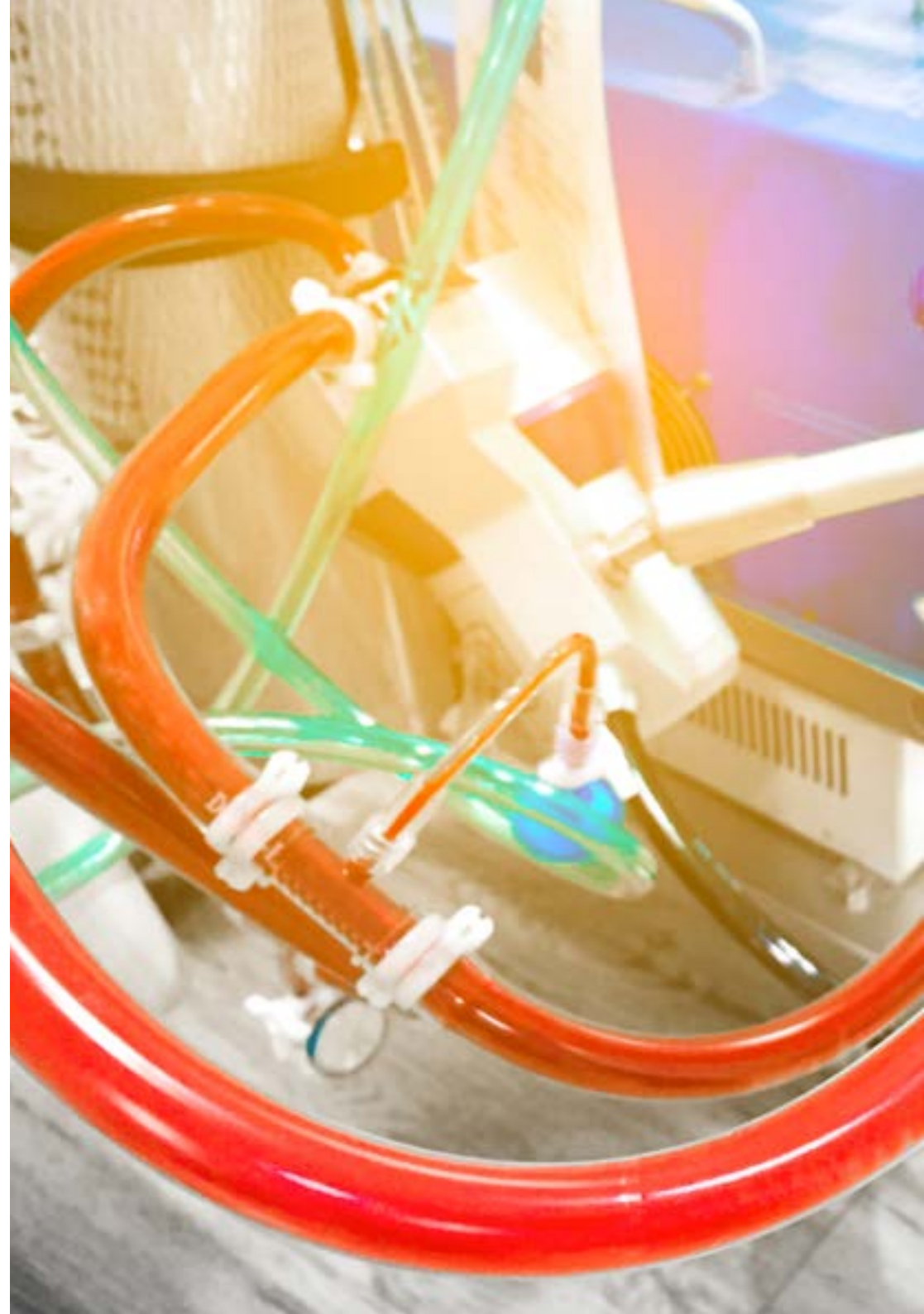
- 12.1. Introduction to the Module
- 12.2. Poisoning from Cleaning, Personal Hygiene and Cosmetic Products
 - 12.2.1. Classification According to Toxicity
 - 12.2.2. Specific Poisonings
 - 12.2.2.1. Soaps and Shampoos
 - 12.2.2.2. Nail Polish and Nail Polish Remover
 - 12.2.2.3. Hair Substances: Hair 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 by 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 (Mycoatropic 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

07

Clinical Internship

This Hybrid Master's Degree in Emergency Toxicology for Nursing includes in its itinerary a clinical stay of 3 weeks in reference centers for toxicological health care. Thanks to this practical period, the nurse will have access to the most updated tools and techniques used in the real scenario in which they will carry out their work as a professional.



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Join now to be part of the professional team of one of the leading clinical centers"

Students will not only have access to teachers during online teaching, but will also have an adjunct tutor during the clinical practicum. In this case, the attending will be in charge of providing a second opinion to the student in question to ensure proper performance on real patients. In addition, this will allow specialists to work with the support of professionals who have extensive experience in clinical reference environments and who require the most demanding skills.

During the Practical Training, the nurses will be instructed in situ and in a dynamic way in 8 consecutive 8-hour days from Monday to Friday. It is an opportunity for specialists who are not satisfied with a theoretical degree and wish to increase their knowledge in their own area, together with experts and real patients. In this sense, students will be able to analyze, put into practice and intervene in the different cases of intoxication presented by those affected.

All the activities that the nurse will carry out during his practical stay are aimed at improving his competences and skills in the toxicological area. In this way, students will be able to achieve their professional goals, up-to-date their knowledge, designing patient care plans and integrating emotional management strategies in suicidal patients and their families, among other competencies in research and scientific approach.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of the professors and other training partners to facilitate teamwork and multidisciplinary integration as transversal competencies for oncology nursing praxis (learning to be and learn to relate).





The procedures described below will be the basis of the practical part of the training, and their implementation will be subject to the center’s own availability and workload, the proposed activities being the following:

Module	Practical Activity
Assessment and urgent care of the intoxicated patient	Monitor the cardiac rhythm of the intoxicated patient, verifying pulse and controlling of the BP
	Perform arterial blood gases to assess the patient's acid-base, ventilatory and oxygen status
	Hemodynamic Stability and Instability in Poisoned Patients
	Administer basic antidotes to lessen the effect of the toxic substance on the body on the organism
	Apply general life support measures with special attention to maintaining a patent airway
	Identify Pediatric Dental those toxics that cause hepatic affectation, act their repercussion at the organic level
	Identify violent and self-injurious behaviors in relation to psychiatric toxicology in the Emergency Room
Approach to the patient with intoxication by industrial agents	Perform restoration and maintenance of airway, ventilation and circulation
	Perform physical examination and apply preventive measures for industrial toxics
	Verify state of consciousness, neurological focality, coexistence with other injuries such as TBI, pupil size and reactivity
	Perform an abdominal examination to rule out acute abdomen
	Practice assessing the degree of coma using the Glasgow scale
	Assess the toxicokinetics of a substance in the patient and its treatment together with the team of specialists
Approach to the patient with intoxication by domestic and Natural Signs agents	Perform a complete physical examination, emphasizing muscarinic, nicotinic and central nervous system signs and symptoms, trying to establish the level of severity
	Practice in increasing the elimination Administer, after indication, antidotes or basic medication in case of poisoning by domestic or natural agents
	Monitor the patient's vital signs
	Assess the toxicokinetics of a substance in the patient and its treatment together with the team of specialists
	Apply gastric lavage if necessary or the therapeutic method indicated by the specialist

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Hybrid Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students does not show up on the start date of the Hybrid Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Hybrid Master's Degree will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: the Hybrid Master's Degree shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Hybrid Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Hybrid Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

08

Where Can I Do the Clinical Internship?

The Hybrid Master's Degree in Emergency Toxicology for Nursing proposes a practical stay in which specialists can develop their skills in the real scenario of action. In addition, the clinical centers will have all the materials and tools necessary to carry out the daily hospital work and the previous theoretical knowledge that you will have. This includes patient assessments, palliative care, management of complications and other emergency nursing activities. In turn, TECH facilitates practical training by allowing the nurse to choose the clinical center that best suits his or her own interests or personal situation.



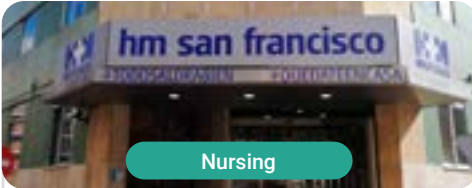


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It complements the theoretical part of this degree with a practical stay that will help you to give a much more real and direct approach to all the knowledge acquired"



The student will be able to complete the practical part of this Hybrid Master's Degree at the following centers:



Nursing

Hospital HM San Francisco

Country	City
Spain	León

Address: C. Marqueses de San Isidro, 11,
24004, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain

Related internship programs:

- Update in Anesthesiology and Resuscitation
- Nursing in the Traumatology Department





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Take advantage of this opportunity to surround yourself with expert professionals and learn from their work methodology”

09

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 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:

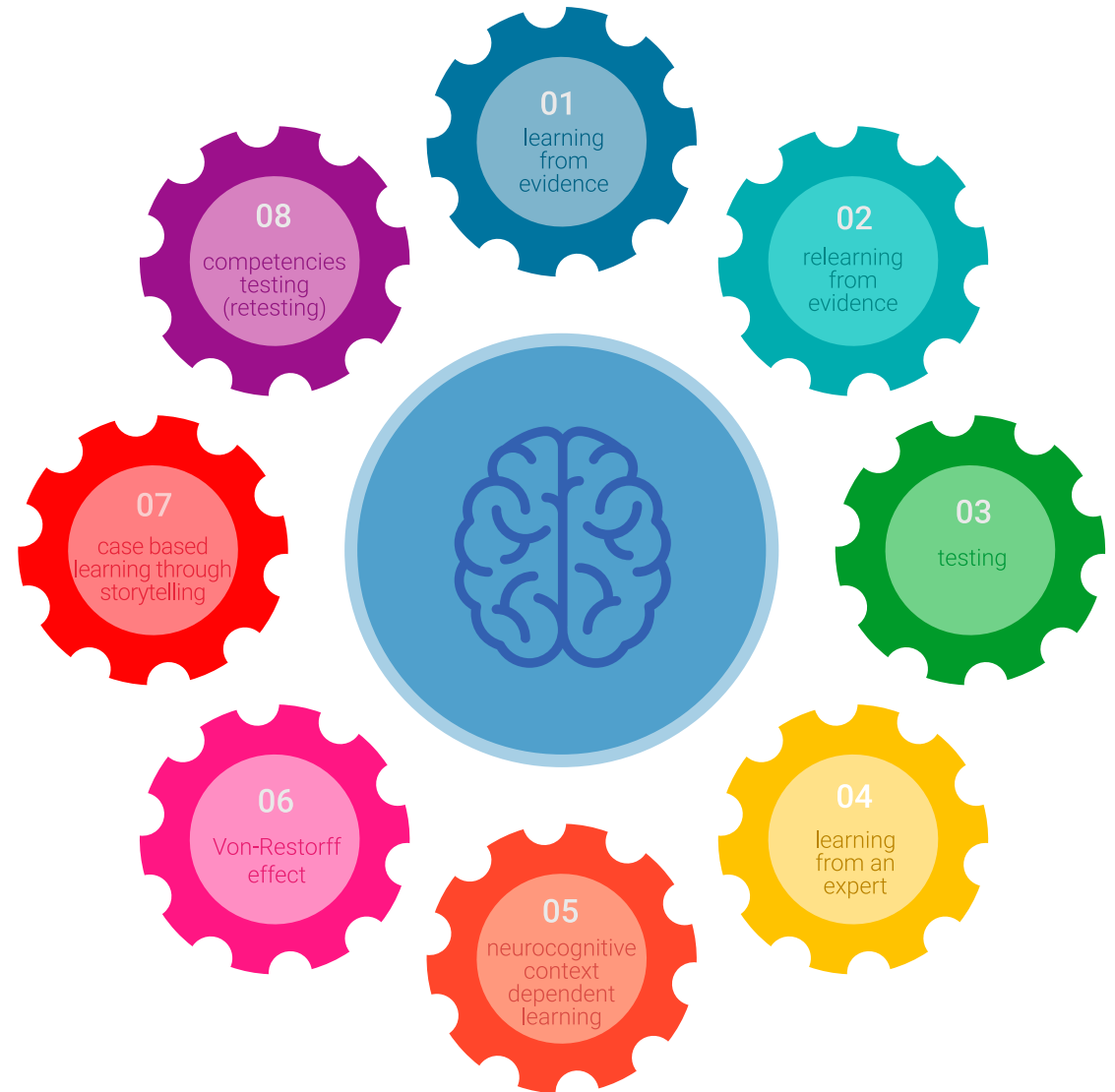
1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into 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

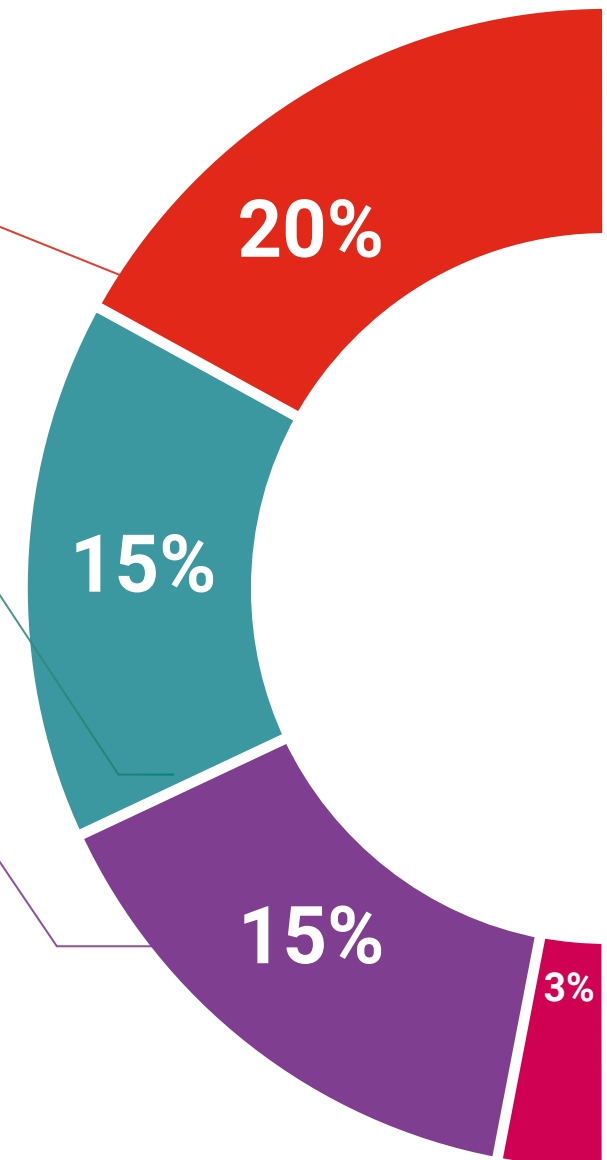
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

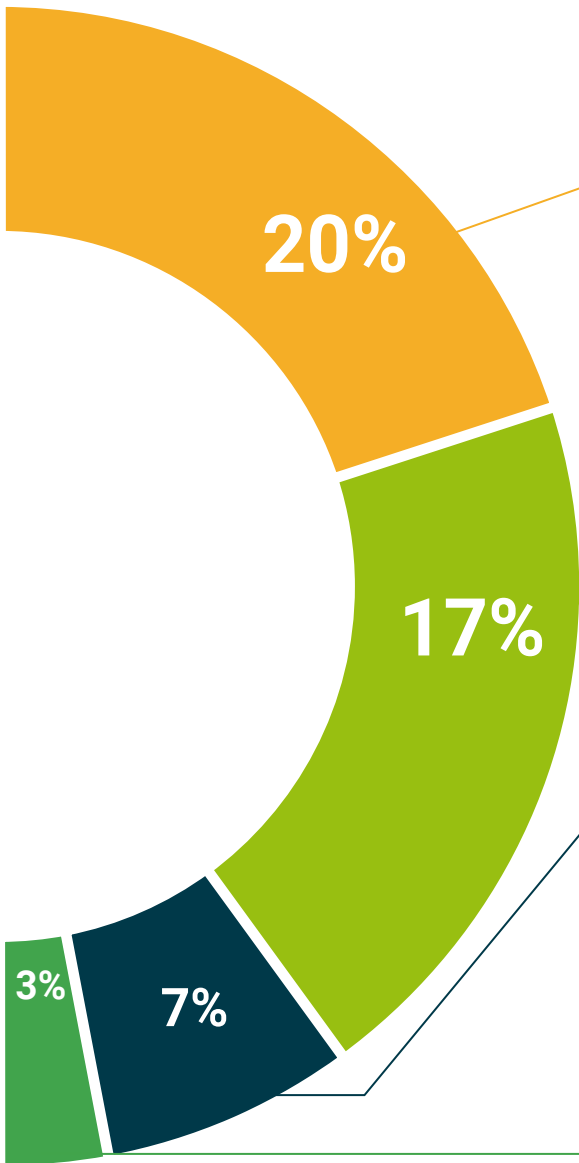
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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.



10 Certificate

The Hybrid Master's Degree in Emergency Toxicology for Nursing guarantees, in addition to the most rigorous and updated training, access to a Hybrid Master's Degree issued by TECH Global University



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

This program will allow you to obtain your **Hybrid Master's Degree diploma in Emergency Toxicology for Nursing** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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

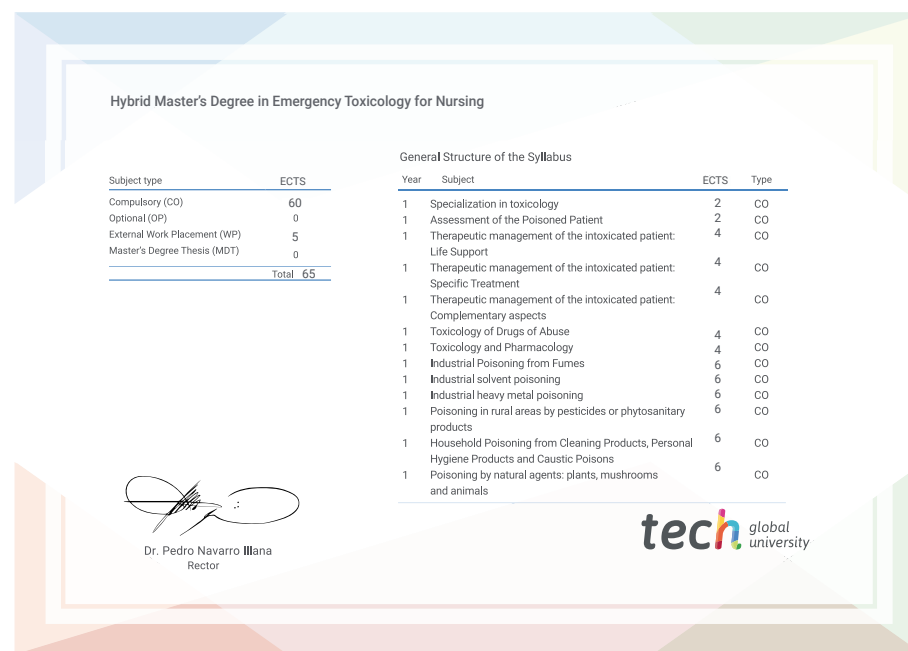
Title: **Hybrid Master's Degree in Emergency Toxicology for Nursing**

Course Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Global University**

Recognition: **60 + 5 ECTS Credits**



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



Hybrid Master's Degree

Emergency Toxicology for Nursing

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 ECTS Credits

Hybrid Master's Degree Emergency Toxicology for Nursing

