



Postgraduate Certificate

Toxicological Emergencies Related to Heavy Metals

» Modality: online

» Duration: 8 weeks

» Certificate: TECH Global University

» Accreditation: 5 ECTS

» Schedule: at your own pace

» Exams: online

We bsite: www.techtitute.com/us/medicine/postgraduate-certificate/toxicological-emergencies-related-heavy-metals

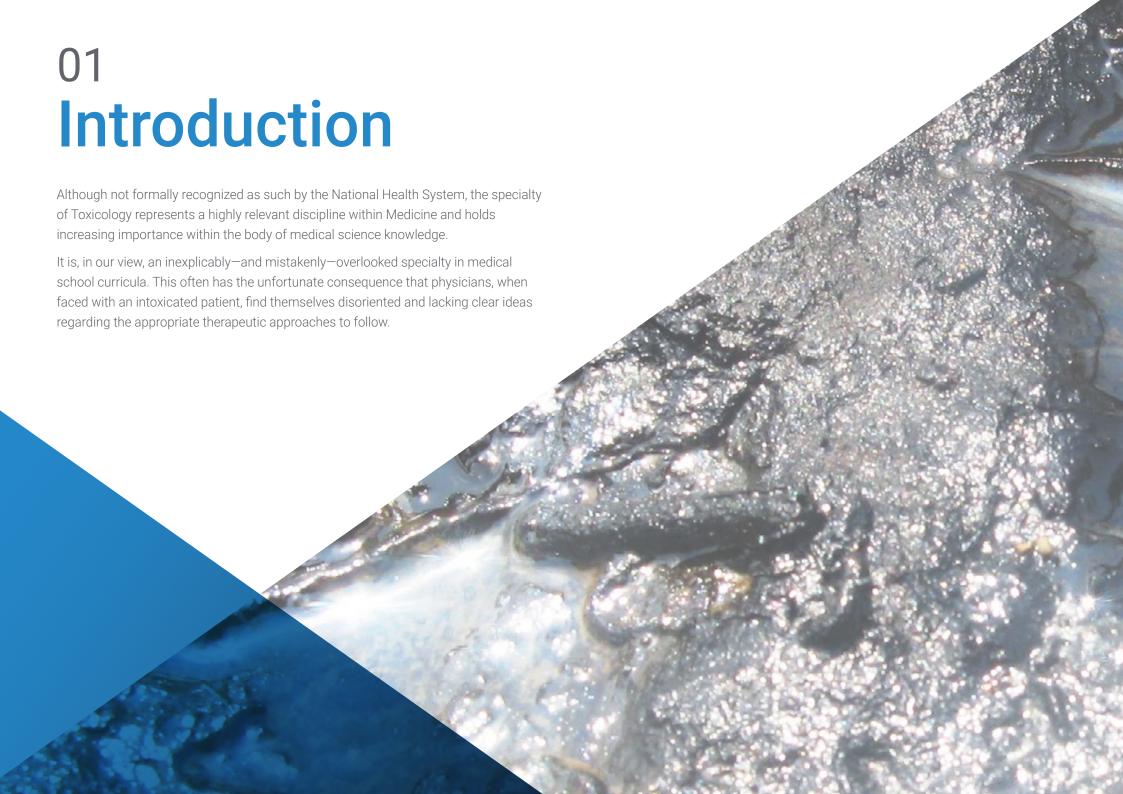
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Certificate

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The field of toxicology encompasses a vast range of knowledge. Nevertheless, the objective of this Postgraduate Certificate is to provide physicians with sufficient expertise in human toxicology to successfully address the professional challenges involved in the care of patients presenting urgent toxicological problems.

We have designed a program primarily oriented toward the daily practice of medicine, focusing on the study of the toxic substances most frequently encountered in clinical settings. Theoretical foundations have been minimized in order to concentrate on the clinical management of intoxicated patients. At the same time, particular emphasis has been placed on the practical approach required for therapeutic success, analyzing each toxin in a way that enables physicians to assess the severity of the patient's condition at all times and to proceed with treatment confidently and effectively.

The contents of this Postgraduate Certificate are organized into eight major thematic groups, coherently structured from a pedagogical standpoint.

We believe that any physician who wishes—or needs—to acquire solid knowledge in Toxicology cannot overlook this Postgraduate Certificate, as this type of academic program represents a unique opportunity in the educational landscape. It has been developed by highly qualified professionals with extensive experience in the field, including experts from academic, forensic, and toxicological information domains.

This training enhances professionals' ability to achieve success, resulting in improved clinical practice and performance. Ultimately, it contributes to the advancement of medical education, the improvement of the healthcare system, and the social well-being of the community as a whole.

This **Postgraduate Certificate in Toxicological Emergencies Related to Heavy Metals** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Development of practical case studies presented by experts in Toxicological Emergencies Related to Heavy Metals. 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
- Updates on Toxicological Emergencies Related to Heavy Metals
- It contains practical exercises where the self-evaluation process can be carried out to improve learning
- With a special emphasis on innovative methodologies in Toxicological Emergencies Related to Heavy Metals
- All 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



This program will provide you with a sense of confidence in medical practice, which will help you grow personally and professionally"

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This Postgraduate Certificate may be the best investment you can make when choosing a professional development program for two reasons: in addition to updating your knowledge in Toxicological Emergencies Related to Heavy Metals, you will also earn a qualification issued by TECH Global University"

The teaching faculty includes professionals specialized in Toxicological Emergencies Related to Heavy Metals, who contribute their practical experience to the program, along with renowned specialists from leading scientific societies.

Thanks to its multimedia content, developed with the latest educational technology, professionals will benefit from situated and contextual learning—simulated environments designed to provide immersive learning experiences that prepare them for real-life situations.

Problem-Based Learning underpins this program design, and the students must use it to try and solve the different professional practice situations that arise throughout the course. To this end, students will have access to an innovative interactive video system created by distinguished experts in the field of Toxicological Emergencies Related to Heavy Metals, all of whom have extensive teaching experience.

Increase your decision-making confidence by updating your knowledge through this program.

Take advantage of this opportunity to learn about the latest advances in Toxicological Emergencies Related to Heavy Metals and improve patient care.







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General Objectives

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



Specific Objectives

- Explain the proper way to assess the acutely poisoned patient
- Explain the process of providing life support to the acutely poisoned patient
- Apply preventive techniques for gastrointestinal absorption
- Explain the alterations in water and electrolyte balance in the acutely poisoned patient
- Describe toxicokinetics and its implications for emergency treatment
- Explain decontamination procedures for acute dermatological poisonings
- Define toxicological mechanisms in the male urinary system
- Define toxicological mechanisms in the female urinary system
- Explain the effects of xenobiotics
- Describe ECG changes in poisonings that affect the heart
- Describe the possible arrhythmias detected in acute poisonings
- Explain the hematological effects of acute poisonings
- Explain the examination procedure for patients poisoned by inhaling smoke
- Define the therapeutic approach for patients poisoned by smoke inhalation or other respiratory agents
- Establish the differential diagnosis between different renal toxic syndromes
- Identify clinical presentations in poisoning with neurological involvement
- Describe the systemic impact of ocular poisoning
- Identify toxins that cause liver damage and their organ-level repercussions



- Identify violent and suicidal behaviors related to psychiatric toxicology
- Describe the effects of toxicology in athletes and the various products used
- Identify poisoning related to potential pharmacological errors in pediatric patients
- Describe the approach to take in case of overdose in pregnant women
- Explain the principles of teratogenesis and products that can cause it
- Identify products that pose a risk of poisoning to both the mother and newborn during breastfeeding
- Explain gastrointestinal decontamination procedures in children with acute poisoning
- Describe the epidemiology, etiology, and impact of acute poisonings in pediatric and neonatal age groups
- Define characteristics of intentional and unintentional poisoning in the elderly
- Explain the different therapeutic approaches for the elderly with acute poisoning
- Describe specific xenobiotics that can be used in pediatric and neonatal age groups
- Identify the toxicokinetics of paracetamol and its treatment in case of acute poisoning
- Identify the toxicokinetics of antifungals and their treatment in case of acute poisoning
- Identify the toxicokinetics of anti-inflammatories 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 decongestants and their treatment

- in case of acute poisoning
- Identify the toxicokinetics of antidiabetics and hypoglycemics and their treatment in case of acute poisoning
- Explain the toxicokinetics of bisphosphonates and antineoplastics and their treatment in case of acute poisoning
- Identify the toxicokinetics of selective β 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 antiarrhythmics and their treatment in case of acute poisoning
- \bullet Explain the toxicokinetics of $\beta\mbox{-adrenergic}$ 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 medications and their treatment in case of acute poisoning
- Explain the toxicokinetics of anticoagulants, thrombolytics, and antifibrinolytics and their treatment in case of acute poisoning

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- Identify the toxicokinetics of SSRIs, 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 poisoning
- Identify the toxicokinetics of benzodiazepines and muscle relaxants and their treatment in case of acute poisoning
- Explain the toxicokinetics of MAO inhibitors 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 herbal and vitamin poisonings
- Identify the toxicokinetics of phencyclidine and ketamine and their treatment in case of acute poisoning
- Explain the toxicokinetics of substances used for chemical submission and their treatment in case of acute poisoning
- Identify the toxicokinetics of amphetamines and designer drugs and their treatment in case of acute poisoning
- Explain the toxicokinetics of inhalants and their treatment in case of acute poisoning
- Explain the toxicokinetics of ethanol and its treatment in case of acute poisoning

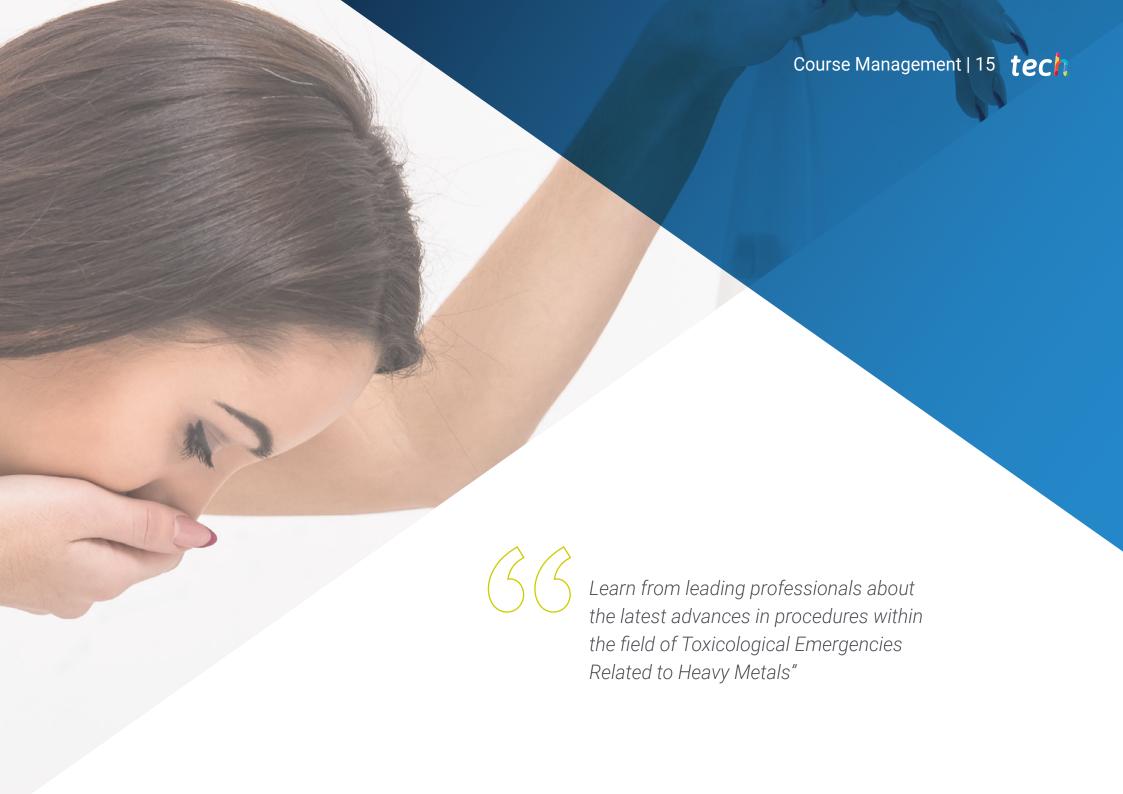


- Identify the toxicokinetics of cannabinoids and marijuana and their treatment in case of acute poisoning
- Explain the toxicokinetics of cocaine and its treatment in case of acute poisoning
- Identify the toxicokinetics of hallucinogens and their treatment in case of acute poisoning
- Identify the 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
- 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 sterilizers and their treatment in case of acute poisoning
- Explain the toxicokinetics of fluoride and hydrofluoric acid 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

- Identify the toxicokinetics of herbicides and their treatment in case of acute poisoning
- Explain the toxicokinetics of pyrethroids and insect repellents and their treatment in case of acute poisoning
- Identify the toxicokinetics of organochlorines and their treatment in case of acute poisoning
- Explain the toxicokinetics of organophosphates and carbamates and their treatment in case of acute poisoning
- Describe severe poisoning caused by marine animals and their treatment
- Identify and classify toxic mushrooms and their possible antidotes
- Describe severe poisoning caused by arthropods, arachnids, tarantulas, scorpions, ants, hymenoptera, moths, termites, beetles, etc., and their treatment
- Identify and classify toxic plants and their possible antidotes
- Describe severe poisoning caused by snakes and their treatment

Update your knowledge through the Postgraduate Certificate in Toxicological Emergencies Related to Heavy Metals.



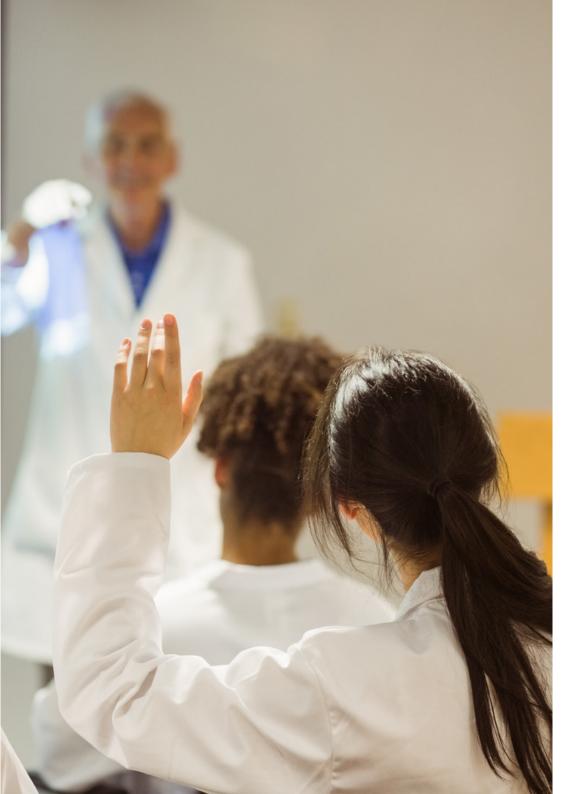


Management



Dr. Álvarez Rodríguez, Cesáreo

- · Head of the Emergency Department at Verín Hospital and President of the Teaching Committee at Verín Hospital
- Bachelor's Degree in Medicine and Surgery from the University of Santiago de Compostela with Bachelor's Degree
- Doctor in Medicine and Surgery from the Autonomous University of Madrid, with a Doctoral Thesis awarded the Extraordinary Prize for "Recognized and Hidden Poisonings by Carbon Monoxide" (University of Santiago de Compostela)
- Specialist in Family and Community Medicine (Clinical Hospital of Zamora)
- University Expert in Health Promotion in the Community
- Clinical Tutor in Emergency Medicine and Family Medicine
- Basic Life Support and Advanced Cardiopulmonary Resuscitation Instructor for the American Heart Association, with extensive teaching experience in professional instruction
- Member of the Expert Committee and Editorial Board of the Emergencias journa
- Scientific Secretary of the Galician Society of Emergency Medicine and Deputy Secretary of Training of the Spanish Society of Emergency Medicine (SEMES)
- President of the Scientific Committee for the XXV National Congress of the Spanish Society of Emergency Medicine
- President of the Scientific Committees for the XIX and XXI Congresses of the Galician Society of Emergency Medicine
- Scientific Committee Member for the XXI National Toxicology Conference and XI Toxicovigilance Conference (2017)



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Faculty

Alvarez Carnero, Anabel

- Degree in Journalism
- Master's Degree in Digital Marketing, Communication, and Social Media
- Expert in Reporting and Digital Photography
- Reporter for Viajar magazine, Grupo Zeta

Miguéns Blanco, Iria

- Degree in Medicine and Surgery from the University of Santiago de Compostela.
- Master's Degree in University Law and Bioethics
- Master's Degree in Teaching and Digital Competencies in Health Sciences
- Master's Degree in Emergency Medicine
- Specialist in Family and Community Medicine
- Emergency Physician. Gregorio Marañón General University Hospital (Madrid, Spain)
- Tutor for Medical Interns (MIR) in the Emergency Department at Gregorio Marañón University Hospital
- Fifteen national publications and two international publications in impact journals related to Emergency Medicine

Suárez Gago, María del Mar

- Degree in Medicine and Surgery University of the Basque Country
- Specialist in Internal Medicine (Complex University Hospital of Ourense)
- Attending Physician in the Emergency Department at Verín Hospital
- VMER (Medical Emergency and Resuscitation Vehicle) accreditation of the Training Center of the National Institute of Medical Emergencies of Oporto (INEM)





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Module 1. Industrial Poisoning by Heavy Metals

- 1.1. Introduction: General Aspects of Heavy Metals and Their Main Chelating Agents
- 1.2. Iron Poisoning
 - 1.2.1. Definition and General Aspects
 - 1.2.2. Sources of Exposure
 - 1.2.3. Toxicokinetics and Mechanism of Action
 - 1.2.4. Clinical Manifestations
 - 1.2.5. Diagnosis
 - 1.2.6. Treatment
 - 1.2.7. Conclusions and Key Points to Remember
- 1.3. Phosphorus Poisoning
 - 1.3.1. Definition and General Aspects
 - 1.3.2. Sources of Exposure
 - 1.3.3. Toxicokinetics and Mechanism of Action
 - 1.3.4. Clinical Manifestations.
 - 1.3.5. Diagnosis
 - 1.3.6. Treatment
 - 1.3.7. Conclusions and Key Points to Remember
- 1.4. Lead Poisoning
 - 1.4.1. Definition and General Aspects
 - 1.4.2. Sources of Exposure
 - 1.4.3. Toxicokinetics and Mechanism of Action
 - 1.4.4. Clinical Manifestations.
 - 1.4.5. Diagnosis
 - 1.4.6. Treatment
 - 1.4.7. Conclusions and Key Points





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- 1.5. Mercury Poisoning
 - 1.5.1. Definition and General Aspects
 - 1.5.2. Sources of Exposure
 - 1.5.3. Toxicokinetics and Mechanism of Action
 - 1.5.4. Clinical Manifestations.
 - 1.5.5. Diagnosis
 - 1.5.6. Treatment
 - 1.5.7. Conclusions and Key Points to Remember
- 1.6. Arsenic Poisoning
 - 1.6.1. Definition and General Aspects
 - 1.6.2. Sources of Exposure
 - 1.6.3. Toxicokinetics and Mechanism of Action
 - 1.6.4. Clinical Manifestations.
 - 1.6.5. Diagnosis
 - 1.6.6. Treatment
 - 1.6.7. Conclusions and Key Points to Remember
- 1.7. Cadmium Poisoning
 - 1.7.1. Definition and General Aspects
 - 1.7.2. Sources of Exposure
 - 1.7.3. Toxicokinetics and Mechanism of Action
 - 1.7.4. Clinical Manifestations.
 - 1.7.5. Diagnosis
 - 1.7.6. Treatment
 - 1.7.7. Conclusions and Key Points to Remember



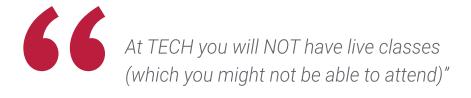


The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.









The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.



TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"

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Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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.





A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

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

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

Study Methodology | 29 tech

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:



Study Material

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

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

We present 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, international guides... In our virtual library you will have access to everything you need to complete your education.

Case Studies

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting



We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

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 for 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.







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This private qualification will allow you to obtain a diploma for the **Postgraduate** Certificate in Toxicological Emergencies Related to Heavy Metals 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** private qualification, 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: Postgraduate Certificate in Toxicological Emergencies Related to Heavy Metals

 ${\sf Modality:} \ \textbf{online}$

Duration: 8 weeks

Accreditation: 5 ECTS



Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Postgraduate Certificate in Toxicological Emergencies Related to Heavy Metals

This is a private qualification of 150 hours of duration equivalent to 5 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024



health confidence people

leducation information tutors
guarantee accreditation teaching
institutions technology learning



Postgraduate Certificate Toxicological Emergencies Related to Heavy Metals

- » Modality: online
- » Duration: 8 weeks
- » Certificate: TECH Global University
- » Accreditation: 5 ECTS
- » Schedule: at your own pace
- » Exams: online





