

Postgraduate Certificate

Central Nervous System Infections





Postgraduate Certificate Central Nervous System Infections

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 7 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/pharmacy/postgraduate-certificate/central-nervous-system-infections

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01

Introduction

Infectious diseases of the central nervous system are frequent in urgent care, because their diagnosis can be delayed due to the lack of specific symptoms in some cases. In addition, these types of pathologies are of great concern to pharmacy professionals and lead them to carry out continuous research to find drugs to mitigate them. Therefore, in order to be more accurate in the diagnosis and to improve treatment, it is essential for pharmacists to be aware of all the advances that have been made in these diseases. With courses like this one, pharmacy professionals will be able to update their knowledge to provide their patients with the best care.



A stylized, glowing blue brain graphic with a wavy, ribbon-like structure, set against a dark blue background. The brain is positioned on the left side of the page, with its right side overlapping the white area where the quote is located.

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*With programs like this one, pharmacists
will acquire the knowledge they need in
Central Nervous System Infections”*

Central Nervous System Infections are an emerging health problem, as it is necessary to make quick and accurate diagnoses in order to avoid complications. In fact, as sometimes there are no specific symptoms, urgent care is frequent in diseases of this type, which have not been diagnosed early

Although the introduction of antibiotic drugs has significantly reduced the morbidity figures for this disease, it is still necessary to continue with pharmaceutical scientific research, as well as for specialists to be aware of all the new developments that may arise in this regard

Therefore, pharmacy professionals, regardless of where they work, can see in this Postgraduate Certificate the opportunity to take a teaching program that brings together the most advanced and in-depth knowledge of the most important health problems in the field of infectious diseases and antimicrobial treatment, where a group of professors of high scientific rigor and extensive international experience, offers the most complete and updated information on prevention, diagnosis, treatment and care of individual patients and population groups, afflicted with the most prevalent and deadly infectious diseases

In this case, the program focuses on Central Nervous System Infections, which affect thousands of people worldwide, with special emphasis on meningitis, encephalitis and myelitis

This **Postgraduate Certificate in Central Nervous System Infections** endorses the latest advances in clinical infectious diseases with a teaching program that positions it as an educational product of the highest scientific rigor at international level. Additionally, this program provides training and professional development in different areas:

- ♦ Clinical symptoms development medicine to be able to address the infectious health-disease process in a particular person through the study of the most prevalent and deadly infectious diseases, and, in epidemiology, to study the behaviour of the same phenomenon in a population
- ♦ The indication, performance and interpretation of the main state-of-the-art diagnostic tests to complement clinical skills in the diagnostic process. Emphasizing the most up-to-date microbiological tests used to rapidly diagnose germs and study antimicrobial
- ♦ The complex and determining pathophysiological relationships between the immune response and infectious agents
- ♦ Germs related to neoplasms and chronic non-communicable diseases.
- ♦ Development and production of vaccines for the control of morbidity and mortality due to infectious diseases
- ♦ The important field of antimicrobial therapeutics, providing the best available information on the development and production of new antibiotics



If you want to make the best investment in your training, do not hesitate to take this Postgraduate Certificate in Central Nervous System Infections at TECH”

“*Increase your decision-making confidence by recycling your knowledge through this Postgraduate Certificate, created especially for pharmacists”*

This Postgraduate Certificate is endorsed by TECH Global University.

Balance your studies with your professional and personal life thanks to the possibility of taking this Postgraduate Certificate 100% online.

Its teaching staff is made up of prestigious and renowned professionals with a long career in health care, teaching and research, who have worked in many countries on several continents, developing professional and teaching experience that they deliver in an extraordinary way in this Postgraduate Certificate.

The methodological design of this Postgraduate Certificate, developed by a multidisciplinary team of e-learning experts, integrates the latest advances in educational technology for the creation of numerous educational multimedia tools that allow the professional, based primarily around the Problem-Based Learning method, to address real problems in their daily clinical practice, which will allow them to advance by acquiring knowledge and developing skills that will impact their future professional work.

It should be noted in this Postgraduate Certificate that each of the contents generated, as well as the videos, self-evaluations, clinical cases and exams, have been thoroughly reviewed, updated, and integrated by the teachers and the team of experts that make up the working group, to facilitate the learning process with a step-by-step approach in order to achieve the teaching program objectives.



02 Objectives

The main objective of the Postgraduate Certificate is the improvement of pharmacy professionals, by helping them acquire the most up-to-date and innovative scientific knowledge in the field of infectious diseases and how they are treated, allowing them to develop the skills that will turn their daily pharmaceutical practice into a benchmark of the standards of the best scientific evidence available, with a critical, innovative, multidisciplinary and integrative sense.



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This Postgraduate Certificate will help you to be more accurate in the work and investigation of Infections in the Central Nervous System"



General Objectives

- ♦ Guarantee professional improvement of the pharmacy, through up-to-date and in-depth knowledge of the best scientific evidence, for the prevention, diagnosis, and treatment of infectious diseases with a multidisciplinary and integrative approach that facilitates the control of these pathologies.



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





Specific Objectives

- ♦ Provide students with advanced, in-depth, updated, and multidisciplinary information that allows them to comprehensively approach the process of health-infectious diseases
- ♦ Provide training and practical theoretical improvement that will enable reliable clinical assignments supported by the efficient use of diagnostic methods to indicate an effective integral treatment
- ♦ Assess and interpret the epidemiological characteristics and conditions in the continents where the appearance and development of infectious diseases often occur
- ♦ Highlight the role of immunity in central nervous system infections and their complications

03

Course Management

Renowned and recognized pharmacists and medical specialists with numerous publications, teaching experience, and professional experience in many countries, where many of the diseases studied have a high morbimortality participate in the teaching program. The teaching staff is made up of a multidisciplinary team from various medical specialities, such as internal medicine, paediatrics, general surgery, gynaecology and obstetrics, microbiology, pathological anatomy, pharmacology, among others.



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Make the most of this opportunity and train with the best teaching staff that you could find, who bring their vast experience to this program, allowing you to complete your training in the field of Central Nervous System Infections”

Management



Dr. Díaz Pollán, Beatriz

- ◆ Faculty Specialist Déu Hospital La Paz University Hospital
- ◆ Official Doctoral Programme in Clinical Medicine Clinical symptoms, University Rey Juan Carlos
- ◆ Degree in Medicine and Surgery, Universidad Autónoma de Madrid
- ◆ Master's Degree in Infectious Diseases and Antimicrobial Treatment from CEU Cardenal Herrera University
- ◆ Postgraduate Certificate in Community and Nosocomial Infections from CEU Cardenal Herrera University
- ◆ Postgraduate Certificate in Chronic Infectious Diseases and Imported Infections from CEU Cardenal Herrera University
- ◆ Postgraduate Certificate in Microbiological Diagnosis, Antimicrobial Treatment and Research in Infectious Pathology from CEU Cardenal Herrera University
- ◆ Faculty Specialist Déu Hospital San Carlos Clinical Hospital
- ◆ Resident doctor, San Carlos Clinical Hospital

Professors

Dr. Rico, Alicia

- ◆ Specialist in the Microbiology and Parasitology Department at La Paz University Hospital, Madrid
- ◆ Degree in Medicine from the Complutense University of Madrid
- ◆ Doctorate Courses at the Complutense University of Madrid
- ◆ Assistant and co-founder of the Infectious Diseases and Clinical Microbiology Unit, La Paz University Hospital, Madrid
- ◆ Clinical teaching collaborator Department of Medicine of the UAM

Dr. Ramos, Juan Carlos

- ◆ Doctor at La Paz University Hospital, Madrid
- ◆ Official Doctoral Programme in Clinical Medicine. University of Alcalá
- ◆ Degree in Medicine and Surgery from the Complutense , University of Madrid
- ◆ Master's Degree in Infectious Diseases in Intensive Care, Fundación Universidad-Empresa Valencia
- ◆ Author of several community publications

Dr. Loeches Yagüe, María Belén

- ♦ Specialist in the area of Infectious Diseases at La Paz General University Hospital, Madrid.
- ♦ Doctor in Medicine, Autonomous University, Madrid
- ♦ Degree in Medicine at Madrid Complutense University
- ♦ Master in Theoretical and Practical Learning in Infectious Diseases. Complutense University of Madrid
- ♦ Specialised Training in Microbiology and Infectious Diseases. Gregorio Marañón General University Hospital
- ♦ Professor of Infectious Diseases at the Infanta Sofía University Hospital in Madrid, European University of Madrid

Dr. Arribas López, José Ramón

- ♦ Head of Department of the Infectious Diseases and Clinical Microbiology Unit, La Paz University Hospital of Internal Medicine, Madrid
- ♦ Doctor in Medicine, Autonomous University, Madrid
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid.
- ♦ Coordinator of the High-Level Isolation Unit La Paz – Carlos III
- ♦ Member Interministerial Committee for the management of the Ebola crisis
- ♦ Head of the AIDS and Infectious Diseases research group at IdiPAZ

Dr. Mora Rillo, Marta

- ♦ Specialist in the area of Infectious Diseases at La Paz University Hospital
- ♦ Doctor in Medicine, Autonomous University, Madrid
- ♦ Degree in Medicine and Surgery, University of Zaragoza
- ♦ Master's Degree in Infectious Diseases in Intensive Care, University of Valencia
- ♦ Online Master's Degree in Infectious Diseases and Antimicrobial Treatment from CEU Cardenal Herrera University
- ♦ Master's Degree in Tropical Medicine and International Health, Autonomous University of Madrid
- ♦ Expert in Emerging and High-Risk Virus Pathology, Autonomous University of Madrid
- ♦ Expert in Tropical Medicine, Autonomous University of Madrid

04

Structure and Content

The teaching program has been created to provide of the pharmacy professionals with the necessary tools for their daily practice in the treatment of clinical infections. Therefore, the content of this Postgraduate Certificate is composed of the most up-to-date syllabus on the market, which has been developed by leading experts in the field at international level, with the aim of making specialists more accurate in the diagnosis and treatment of this type of infections.





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Focus your studies on Central Nervous System Infections thanks to this Postgraduate Certificate, the highest quality on the market”

Module 1. Epidemiology and Microbiology of Infectious Diseases

- 1.1. Epidemiological, Economic, Social and Political Conditions in Continents Which Favor the Development of Infectious Diseases
 - 1.1.1. Africa:
 - 1.1.2. America:
 - 1.1.3. Europe and Asia
- 1.2. New and Emerging Diseases By Continent
 - 1.2.1. Morbidity and Mortality From Infectious Diseases in Africa
 - 1.2.2. Morbidity and Mortality From Infectious Diseases in the Americas
 - 1.2.3. Infectious Disease Morbidity and Mortality in Asia
 - 1.2.4. Morbidity and Mortality From Infectious Diseases in Europe
- 1.3. The Taxonomy Of Infectious Agents
 - 1.3.1. Viruses
 - 1.3.2. Bacteria
 - 1.3.3. Fungus
 - 1.3.4. Parasites
- 1.4. Disease-producing Properties of Micro-organisms
 - 1.4.1. Mechanisms of Pathogenicity
 - 1.4.2. Mechanisms of Adhesion and Multiplication
 - 1.4.3. Mechanisms Enabling the Acquisition of Nutrients From The Host
 - 1.4.4. Mechanisms Inhibiting The Phagocytic Process
 - 1.4.5. Mechanisms For Evading The Immune Response
- 1.5. Microscopy and Staining
 - 1.5.1. Microscopes and Types of Microscopes
 - 1.5.2. Composite Stains
 - 1.5.3. Acid-resistant Micro-organism Staining
 - 1.5.4. Staining to Demonstrate Cellular Structures
- 1.6. Cultures and Growth of Micro-organisms
 - 1.6.1. General Culture Mediums
 - 1.6.2. Specific Culture Methods

- 1.7. Effect of Chemical and Physical Agents on Micro-organisms
 - 1.7.1. Sterilisation and Disinfection
 - 1.7.2. Disinfectants and Antiseptics Used in Practice
 - 1.8. Molecular Biology and its Importance for the Infectologist
 - 1.8.1. Bacterial Genetics
 - 1.8.2. Polymerase Chain Reaction Tests
- Indication and Interpretation of Microbiological Studies
- 1.9.1. Indication of Microbiological Studies
 - 1.9.2. Interpretation of Microbiological Studies



Improve the care of your patients by taking advantage of the program offered by the Postgraduate Certificate in Central Nervous System Infections"



Module 2. Central Nervous System Infections

- 2.1. The Immune Defence Mechanisms of the CNS
 - 2.1.1. Defence Mechanisms of the CNS
 - 2.1.2. The Immune Response in the CNS
- 2.2. Epidemiology of the CNS Infection
 - 2.2.1. Morbidity
 - 2.2.2. Mortality
 - 2.2.3. Risk factors
- 2.3. Microbiological Diagnosis of the CNS Infection
 - 2.3.1. The Study of Cerebrospinal Fluid
- 2.4. Meningitis
 - 2.4.1. Etiology
 - 2.4.2. Clinical Picture
 - 2.4.3. Diagnosis
 - 2.4.4. Treatment
- 2.5. Encephalitis
 - 2.5.1. Etiology
 - 2.5.2. Clinical Picture
 - 2.5.3. Diagnosis
 - 2.5.4. Treatment
- 2.6. Myelitis
 - 2.6.1. Etiology
 - 2.6.2. Clinical Picture
 - 2.6.3. Diagnosis
 - 2.6.4. Treatment
- 2.7. Antibiotics and the Blood-Brain Barrier
 - 2.7.1. The Role of the Blood-Brain Barrier
 - 2.7.2. The Crossing of the Blood-Brain Barrier by Antibiotics

05

Methodology

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

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



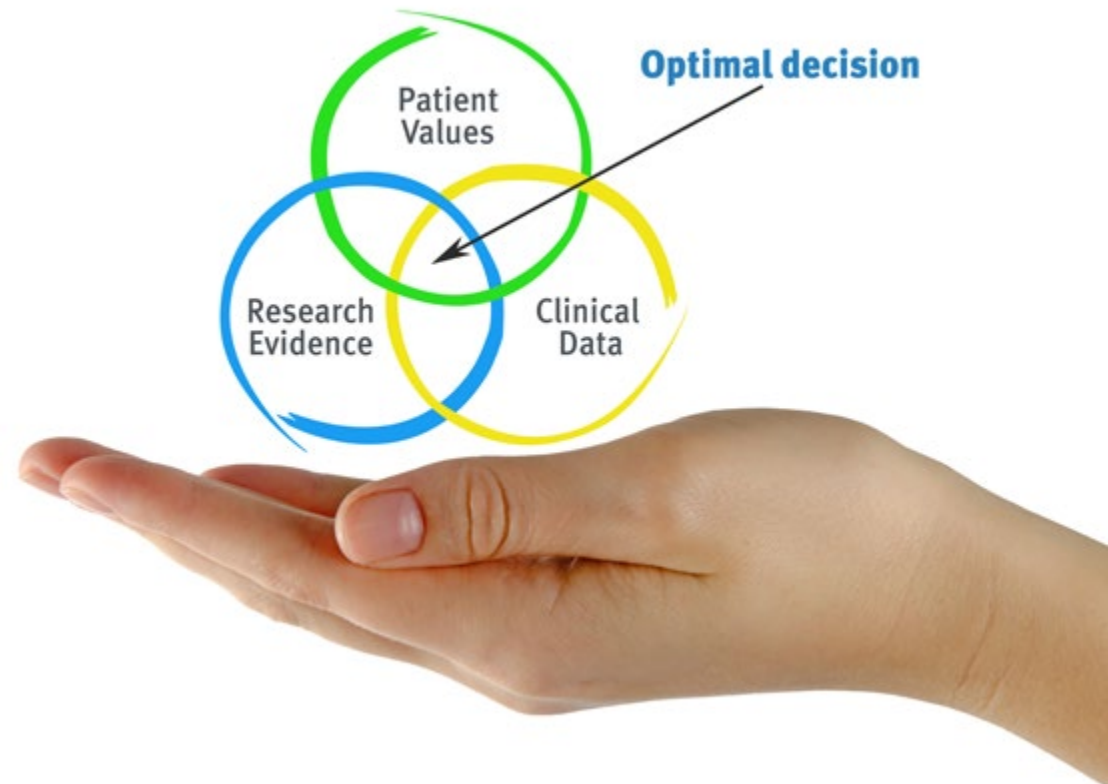


Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

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

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



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, attempting to recreate the actual conditions in a pharmacist's professional 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. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.



Pharmacists 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, more than 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years.

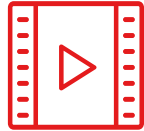
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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 created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

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.



Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



Interactive Summaries

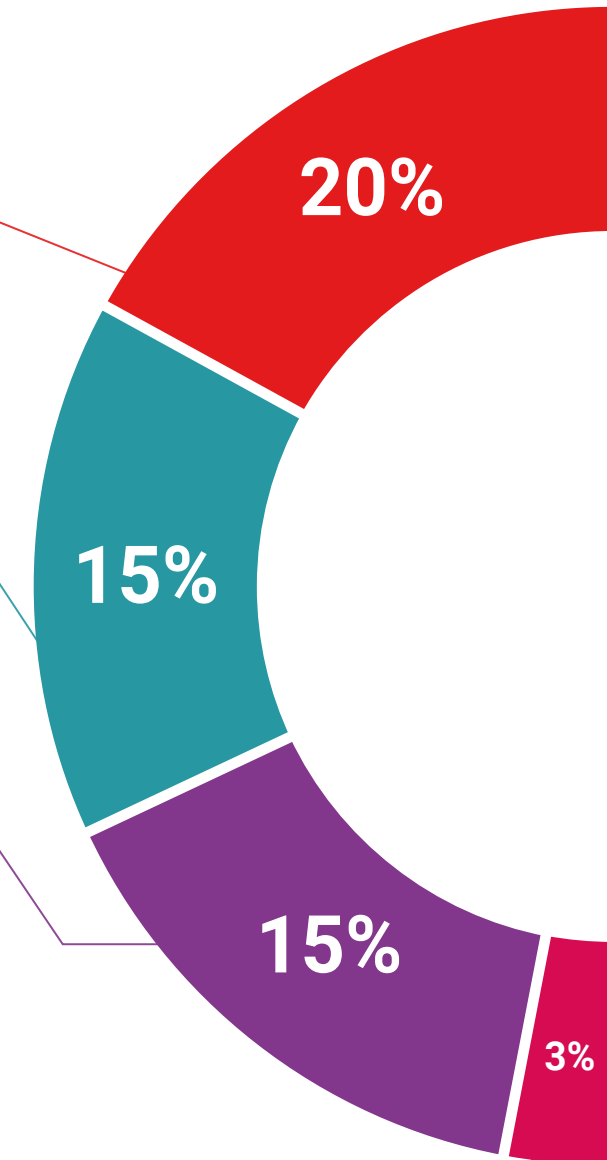
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

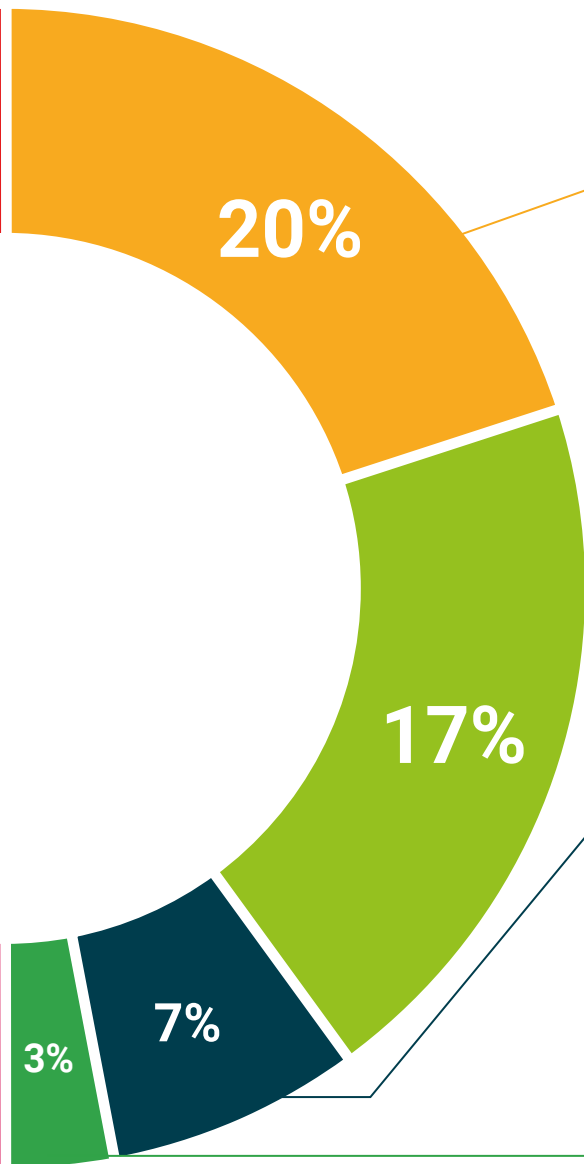
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

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



Classes

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



Quick Action Guides

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



06

Certificate

The Postgraduate Certificate in Central Nervous System Infections guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



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*Successfully complete this program
and receive your university qualification
without the hassle of travel or paperwork”*

This program will allow you to obtain your **Postgraduate Certificate in Central Nervous System Infections** 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: **Postgraduate Certificate in Central Nervous System Infections**

Modality: **online**

Duration: **6 weeks**

Accreditation: **7 ECTS**



future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development language
virtual classroom



Postgraduate Certificate
Central Nervous
System Infections

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Postgraduate Certificate

Central Nervous System Infections

