Postgraduate Diploma

Microbiological and Clinical Diagnosis of Infectious Diseases

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Postgraduate Diploma

Microbiological Diagnosis and Clinical Diagnosis of Infectious Diseases

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-microbiological-clinical-diagnosis-infectious-diseases

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01

Introduction

Update your knowledge in the Microbiological and Clinical Diagnosis of Infectious Diseases under the guidance of experts in the field. This highly scientific and up-to-date course will teach you the latest techniques and developments in the sector and develop your knowledge and skills regarding infectious diseases. A unique opportunity to stand out from the crowd in a highly demanding profession.

With this Postgraduate Certificate you have the opportunity to update your knowledge with the utmost scientific rigor, and incorporate the latest advances in the approach to infectious diseases into your daily medical practice"

Infectious diseases remain the leading cause of mortality and disability (i.e. the loss of a productive life) in the world. In 2016, of the 56.4 million total deaths worldwide, 33% were due to infectious diseases, 30% to cardiovascular diseases and 10% as a result of cancer. The fight against disease can be separated into two categories: infectious diseases and chronic non-communicable diseases.

From the 17.3 million people who died from infection diseases in 2016, the most frequent causes of death were lower respiratory infections (3.7 million), malaria (2.2 million), tuberculosis (1.3 million), diarrhea (1.4 million), and HIV/AIDS infection (1.1 million). The most important factors to take into consideration regarding infectious diseases are demographics and human behavior, technological and industrial development, economic development and the variations in land use, intercontinental travelling and commerce, climate change, microbiotic adaptation and finally the disappearance or reduction of efficient public health measures.

These factors mean that it would be wrong to consider any part of the planet to be isolated enough from the rest, nor the appearance, reappearance or dissemination of imported or apparently eradicated infectious diseases in our environment to be impossible.

This century's complex international epidemiological situation, so far exemplified by the deliberate release of Bacillus anthracis spores as a bioweapon which causes pulmonary anthrax in victims when inhaled, the emergence of West Nile virus as a pathogen in the United States, the SARS epidemic, the zoonotic spread of monkeypox in the United States, the threat of pandemic influenza, the Ebola epidemic in Africa, the emergence of yellow fever cases in Angola, coupled with the re-emergence of Dengue and Cholera.The emergence of new arboviruses in locations like Chikungunya and more recently Zika in the Americas. Together with the mortality rate from other endemic infectious diseases, such as HIV/AIDS, leptospirosis, tuberculosis, community-acquired pneumonia and our increased resistance to antibiotics with the development of multidrug-resistant bacteria, all of which highlight the need for professionals with specialist expertise in order to raise the performance levels of all the personnel needed to face up to the challenges involved in controlling and dealing with biological, hospital and public health emergencies and provide a higher standard of health care the world over.

This **Postgraduate Diploma in Microbiological and Clinical Diagnosis of Infectious Diseases** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of clinical cases presented by experts in the Microbiological and Clinical Diagnosis of Infectious Diseases
- 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
- New developments in the Microbiological and Clinical Diagnosis of Infectious Diseases
- Practical exercises where self-assessment can be used to improve learning
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- 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

Seize the moment and gain up-to-date knowledge on the management of coronavirus infections"

This Postgraduate Diploma is the best investment you can make when choosing a refresher program for two reasons: in addition to updating your knowledge in Microbiological and Clinical Diagnosis of Infectious Diseases, you will obtain a diploma from TECH Technological University"

This program, last updated in April 2020, is the most complete and up-to-date available course in the field of clinically infectious diseases.

Don't miss the opportunity to learn about advances in the treatment of infections and incorporate them into your daily medical practice.

TECH's teaching staff is made up of prestigious, renowned professionals who have had a long career in health care, teaching and research, and have worked in many countries on several continents, gaining indispensable professional teaching experience that delivers essential content of the highest quality to this Postgraduate Diploma.

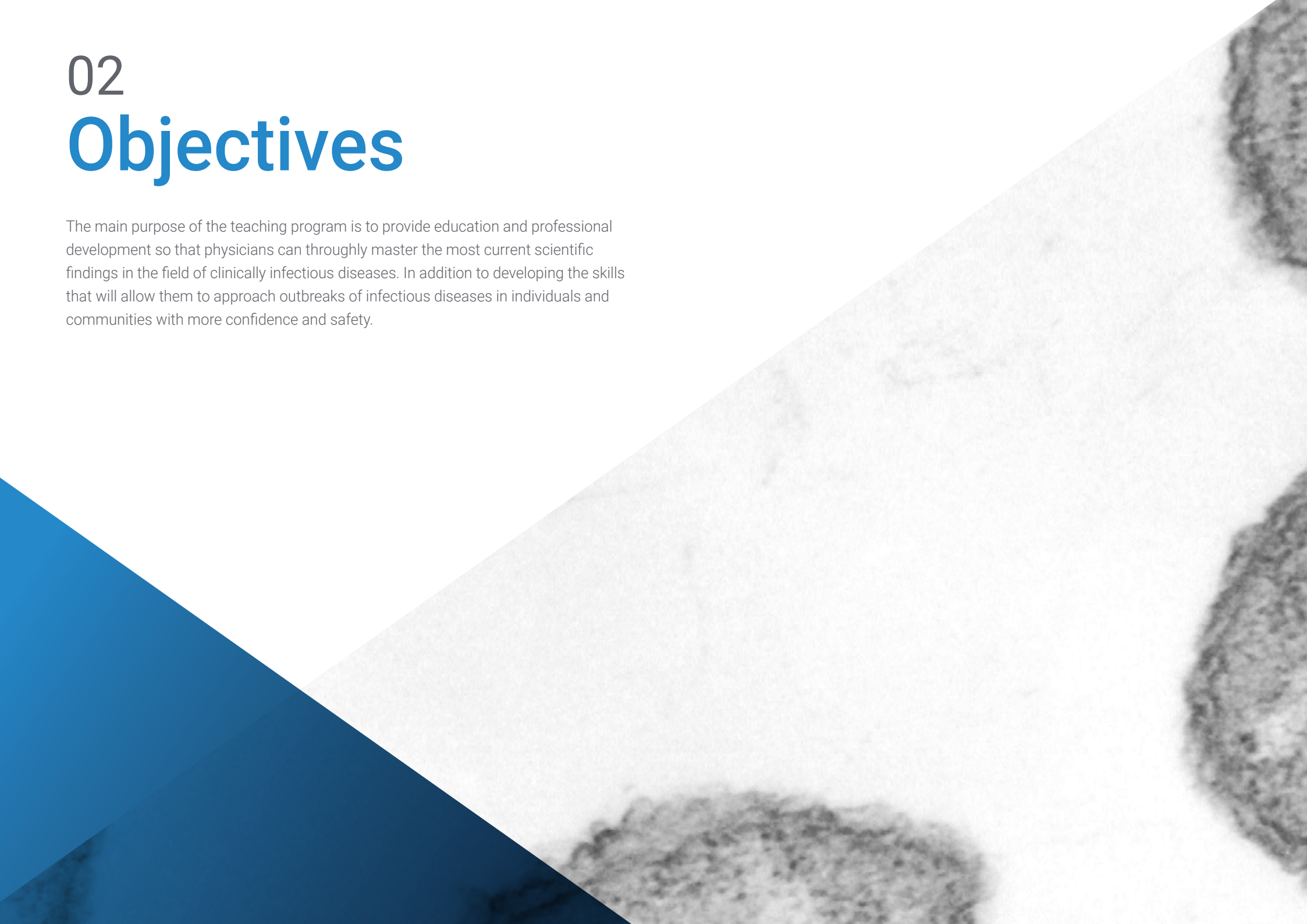
The methodological design of this Postgraduate Diploma, developed by a multidisciplinary team of e-learning experts, integrates the latest advances in educational technology for the creation of numerous multimedia educational tools that allow the professional, based primarily on the problem-solving method, to face the solution of real problems in their daily clinical practice, which will allow them to advance in the acquisition of knowledge and the development of skills that will positively impact their future professional work.

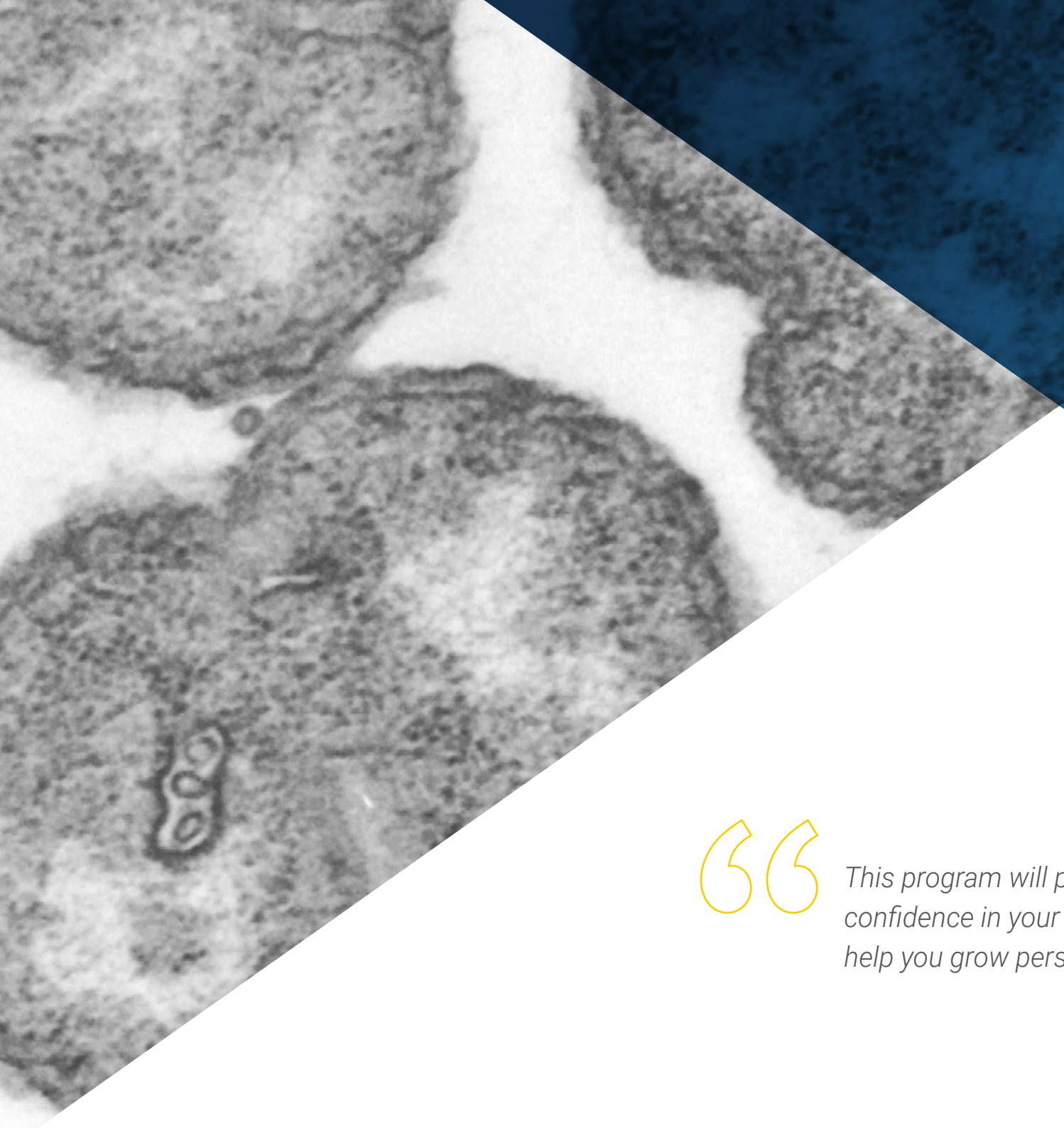
Each of the contents generated for this Postgraduate Diploma, as well as the videos, self-evaluations, clinical cases and exams have been thoroughly reviewed, updated, and integrated by the professors and the team of experts that make up TECH's staff. This will facilitate the learning process with a step-by-step approach in order to achieve the program's teaching objectives.

02

Objectives

The main purpose of the teaching program is to provide education and professional development so that physicians can throughly master the most current scientific findings in the field of clinically infectious diseases. In addition to developing the skills that will allow them to approach outbreaks of infectious diseases in individuals and communities with more confidence and safety.





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

General objectives

- Update your knowledge and develop your skills in healthcare, teaching or research roles in the field of infectious diseases in order to provide care for individuals or groups
- Improve the medical attention and the overall health of patients with infectious diseases based on integral care, the application of the epidemiological clinical method and the correct use of antimicrobials in correspondence with the most up to date scientific evidence

Improve your patients' care by taking advantage of this course offered by the Postgraduate Diploma in Microbiological and Clinical Diagnosis of Infectious Diseases"

Specific objectives

Module 1. Microbiological Diagnosis and Other Examinations for Infectious Diseases

- Understand the organization, structure and operation of the microbiology laboratory
- Integrate the principles of the use of microbiological tests in patients with infectious diseases and how to perform the sampling process
- Correctly perform protocols for virological, bacteriological, mycological and parasitological studies
- Learn how to properly interpret microbiological studies
- Understand the concepts of biosecurity and bioterrorism

Module 2. The Immune System in Infections in the Immunosuppressed Host

- Understand the structure and development of the immune system, its composition, which organs compose it and its chemical mediators
- Understand the immune response to viral and bacterial infections
- Recognize the most frequent clinical manifestations of immunosuppression
- Identify the most frequent clinical manifestations of febrile syndrome in neutropenic patients

Module 3. General Elements of Infectious Diseases

- Gain up-to-date knowledge of the general and basic concepts of the infectious health-disease process, as well as the stages of the infectious process
- Recognize the most frequent symptoms in patients with infectious diseases
- Study the types of fever that can occur in different situations and their most frequent complications
- Review the main sexually transmitted infections
- Describe septic shock based on its clinical manifestations and how it differs from other types of shock

Module 4. The Role of Infectologists in Health Services

- Describe Infectious Diseases and their importance for medical care in any specialty
- Acquire the competencies and skills necessary for a superior education in this field
- Contextualize the role of the infectiologist in a team of health professionals through the different departments within the health system

03

Structure and Content

The teaching program has been created by a group of professors and medical professionals from a variety of medical specialties, who have done extensive medical research and possess vast teaching experience in several countries in Africa, Central and South America. They are interested in integrating the latest scientific findings in clinically infectious diseases and antimicrobial therapeutics, to ensure professional development and the improvement of the daily clinical practice of professionals who care for patients with infectious diseases.

This Postgraduate Diploma in Microbiological and Clinical Diagnosis of Infectious Diseases contains the most complete and up-to-date scientific program on the market"

Module 1. Microbiological Diagnosis and Other Examinations for Infectious Diseases

1.1. Organization, Structure and Functioning of the Microbiology Laboratory
- 1.1.1. Organization and Structure of the Microbiology Laboratory
- 1.1.2. Functioning of a Microbiology Laboratory

1.2. Principles of the Use of Microbiological Examinations in Patients with Infectious Diseases The Process of Collecting Specimens
- 1.2.1. The Role of Microbiological Studies in the Diagnosis of Infectious Diseases
- 1.2.2. The Microbiological Sampling Process: Preanalytical, Analytical, and Postanalytical Stages
- 1.2.3. Sampling Requirements for the Main Microbiological Studies Used in Daily Clinical Practice: Blood, Urine, Stool, Sputum

1.3. Virological Studies
- 1.3.1. Types of Viruses and Their General Characteristics
- 1.3.2. General Characteristics of Virological Studies
- 1.3.3. Viral Culture
- 1.3.4. Viral Genome Studies
- 1.3.5. Studies of Antigens and Antibodies Against the Virus

1.4. Bacteriological Studies
- 1.4.1. Classification of Bacteria
- 1.4.2. General Characteristics of Bacteriological Studies
- 1.4.3. Stains for Bacterial Identification
- 1.4.4. The Study of Bacterial Antigens
- 1.4.5. Cultivation Methods: General and Specific
- 1.4.6. Bacteria That Need Special Study Methods

1.5. Mycological Studies
- 1.5.1. Classification of Fungi
- 1.5.2. Main Mycological Studies

1.6. Parasitological Studies
- 1.6.1. Classification of Parasites
- 1.6.2. Studies for Protozoa
- 1.6.3. Studies for Helminths

1.7. Appropriate Interpretation of Microbiological Studies
- 1.7.1. The Microbiological Clinical Interrelationship for the Interpretation of Microbiological Studies

1.8. Interpreted Reading of the Antibiogram
- 1.8.1. Traditional Interpretation of the Antibiogram in Relation to the Sensitivity and Resistance to Antimicrobials
- 1.8.2. Interpreted Reading of the Antibiogram: Current Paradigm

1.9. Use of Microbial Map of an Institution
- 1.9.1. What is a Microbial Map of an Institution?
- 1.9.2. Clinical Application of the Microbial Map

1.10. Biosecurity
- 1.10.1. Conceptual Definitions of Biosafety
- 1.10.2. Importance of Biosafety for Health Services
- 1.10.3. Universal Measures of Precaution
- 1.10.4. Managing Biological Waste in a Healthcare Institution

1.11. The Clinical Laboratory in the Study of Infectious Diseases
- 1.11.1. Acute Phase Reactants
- 1.11.2. Studies of Liver Function, Internal Environment, Coagulation and Renal Function in Sepsis
- 1.11.3. Study of Inflammatory Liquids in the Diagnosis of Infections
- 1.11.4. Biomarkers Merit in Clinical Practice

1.12. Imaging Studies for the Diagnosis of Infectious Diseases
- 1.12.1. The Role of Imaging Studies in the Diagnosis of Infectious Diseases
- 1.12.2. The Role of Ultrasound in the Integral Evaluation of a Patient with Sepsis

1.13. The Role of Genetic and Immunological Studies
  1.13.1. Studies of Genetic Illnesses and Their Predisposition to Infectious Diseases
  1.13.2. Immunological Studies on Immunosuppressed Patients
1.14. Efficacy of Pathological Anatomy Studies
  1.14.1. Alterations in Cytological Studies According to the Type of the Biological Agent
  1.14.2. Necropsy and Its Importance in Infectious Mortality
1.15. Assessment of the Severity of Infectious Diseases
  1.15.1. Prognosis Scales in the Care of Patients with Infectious Diseases Based on Laboratory Studies and Clinical Elements
  1.15.2. SOFA Score Merit in the Current Day: Components of SOFA, What it Measures, Usefulness in the Assessment of a Patient
  1.15.3. Main Complications in Infectious Diseases
1.16. Worldwide Campaign Against Sepsis
  1.16.1. Emergence and Evolution
  1.16.2. Objectives
  1.16.3. Recommendations and Impact
1.17. Bioterrorism
  1.17.1. Principle Infectious Agents Used in Bioterrorism
  1.17.2. International Regulations on the Management of Biological Samples

Module 2. The Immune System in Infections in the Immunosuppressed Host

2.1. Structure and Development of the Immune System
  2.1.1. Composition and Development of the Immune System
  2.1.2. Immune System Organs
  2.1.3. Immune System Cells
  2.1.4. Chemical Mediators in the Immune System
2.2. The Immune Response to Viral and Bacterial Infections
  2.2.1. Main Cells Implicated in the Immune Response to Viruses and Bacteria
  2.2.2. Main Chemical Mediators
2.3. The Immune Response to Mycotic and Parasitic Infections
  2.3.1. Immune Response Against Filamentous and Yeast Fungi
  2.3.2. Immune Response Against Protozoas
  2.3.3. Immune Response Against Helminths
2.4. Most Common Clinical Manifestations of Immunosuppression
  2.4.1. Types of Immunosuppression
  2.4.2. Clinical Manifestations According to the Infectious Agent
  2.4.3. Frequent Infections According to the Type of Immunosuppression
  2.4.4. Common Infections in Immunosuppressed Patients According to the Organ System Affected
2.5. The Fever Syndrome in Neutropenic Patients
  2.5.1. Most Common Clinical Manifestations
  2.5.2. Most Diagnosed Infectious Agents
  2.5.3. Most-Used Complementary Studies in the Integral Evaluation of a Neutropenic Fever Patient
  2.5.4. Therapeutic Recommendations
2.6. Management of an Immunosuppressed Patient with Sepsis
  2.6.1. Evaluation of Diagnosis, Prognosis and Treatment According to the Latest International Recommendations Endorsed by Scientific Evidence
2.7. Immunomodulatory and Immunosuppressive Therapy
  2.7.1. Immunomodulators and Their Clinical Use
  2.7.2. Immunosuppressors and Their Relation to Sepsis

Module 3. General Elements of Infectious Diseases

3.1. General and Basic Concepts of the Infectious Health-Illness Process
- 3.1.1. The Stages of the Infectious Process
- 3.1.2. The Systemic Inflammatory Response
- 3.1.3. Sepsis
- 3.1.4. Complications of Sepsis

3.2. Most Common Signs and Symptoms in Patients with Infectious Diseases
- 3.2.1. Local Signs and Symptoms of Sepsis
- 3.2.2. Systemic Signs and Symptoms of Sepsis

3.3. Main Infectious Syndromes
- 3.3.1. Systemic Syndromes
- 3.3.2. Local Syndromes

3.4. Fever of Unknown Origin (FUO)
- 3.4.1. Classis FUO
- 3.4.2. Nosocomial FUO
- 3.4.3. FUO in an Immunosuppressed Patient
- 3.4.4. FUO in HIV Infections

3.5. Fever and Rash
- 3.5.1. Types of Rashes
- 3.5.2. Main Infectious Agents Which Produce Rashes

3.6. Fever and Adenomegaly
- 3.6.1. Characteristics of Infectious Adenomegalies
- 3.6.2. Infections and Localized Adenomegalies
- 3.6.3. Infections and Generalized Adenomegalies

3.7. Sexually Transmitted Infections (STI)
- 3.7.1. Epidemiology of STIs
- 3.7.2. Main Agents in Sexual Transmission
- 3.7.3. Syndromic Approach to STIs

3.8. Septic Shock
- 3.8.1. Epidemiology
- 3.8.2. Pathophysiology
- 3.8.3. Clinical Manifestations and Differential Masks from the Other Types of Shock
- 3.8.4. Diagnosis and Evaluation of the Severity and Complications
- 3.8.5. Therapeutic Behavior

Module 4. The Role of Infectologists in Health Services

4.1. Infectiology and its Importance in Medical Care Within Any Specialist Field
- 4.1.1. The Universal Nature of Infectious Diseases in Medical Specialties
- 4.1.2. Mastering Antibiotic Treatment

4.2. Skills and Abilities of an Infectologist
- 4.2.1. Skills of an Infectologist
- 4.2.2. Abilities of an Infectologist

4.3. The Role of Infectologists in Health Teams
- 4.3.1. Functions of Infectologists in Health Teams in the Different Levels of the Health System

4.4. Infectious Disease Consultation
- 4.4.1. Functions of an Infectologist's Consultation
- 4.4.2. Illnesses to Be Consulted

4.5. Scientific Update of the Infectologist's Medical Knowledge and the Future Challenges of Infectiology
- 4.5.1. Self-Training
- 4.5.2. Training and Professional Achievement
- 4.5.3. Future Challenges for Infectiology: The Emergence of New Diseases Antimicrobial Resistance. The Development of Vaccines and Antibiotics

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

04

Methodology

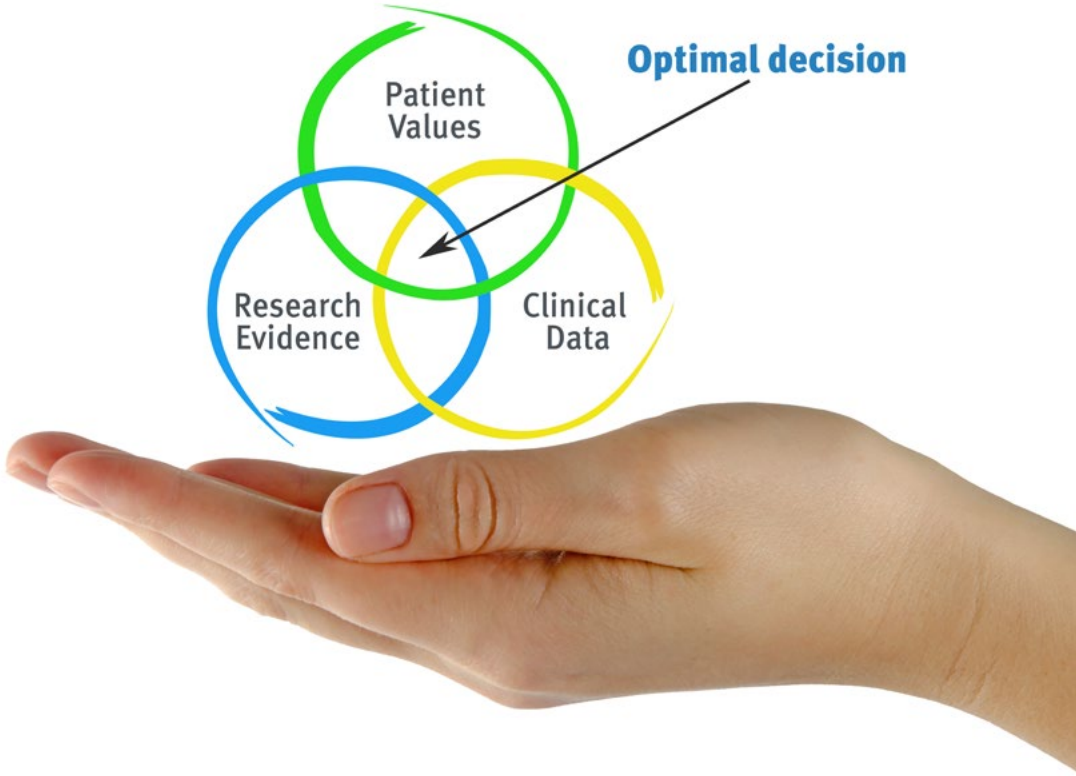
This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach known as **Relearning**.
This teaching system is used in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** consider 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 any given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

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



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

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

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

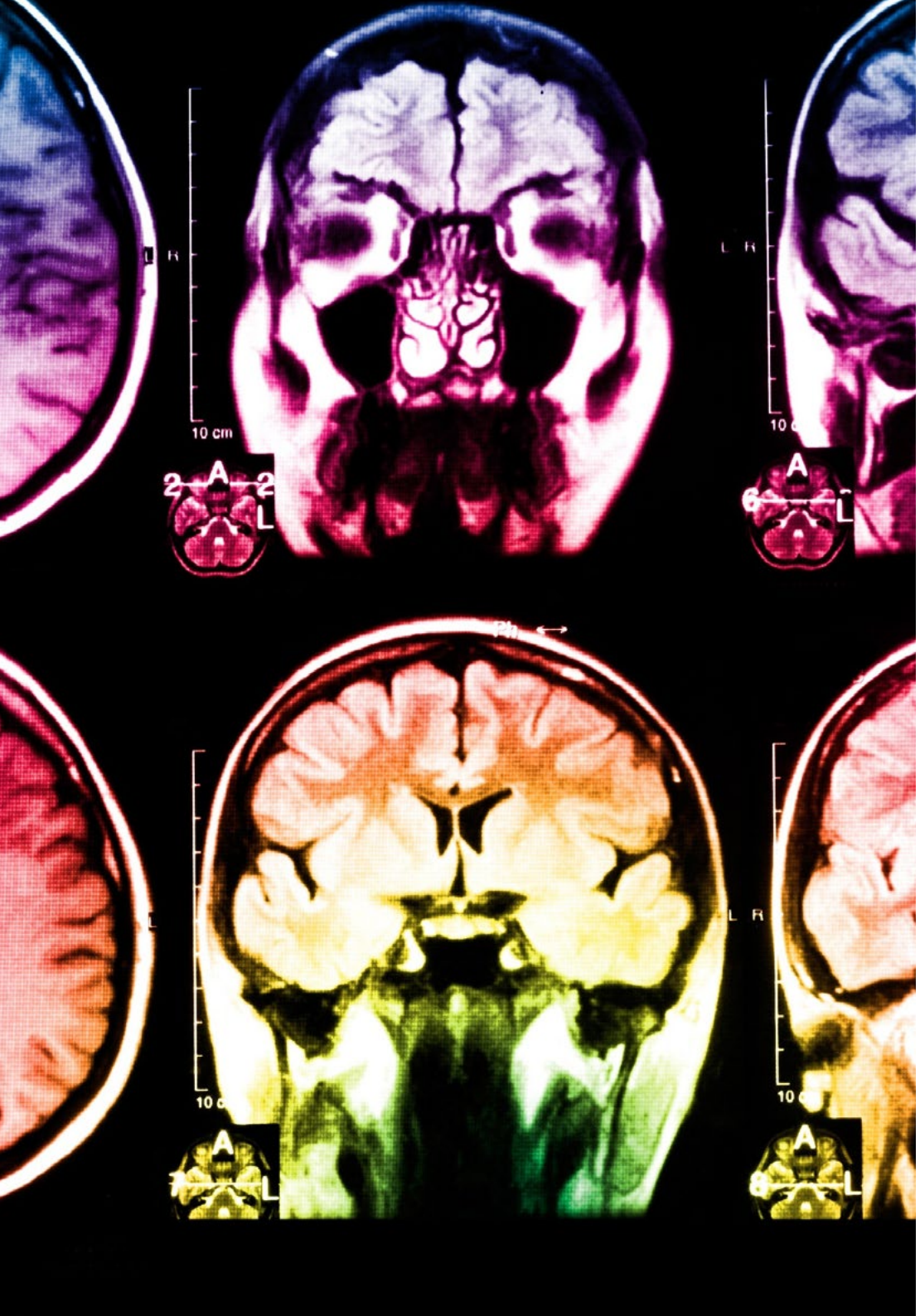
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better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

Relearning Methodology

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

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

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



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

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

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

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

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

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

Study Material

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

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

Surgical Techniques and Procedures on Video

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

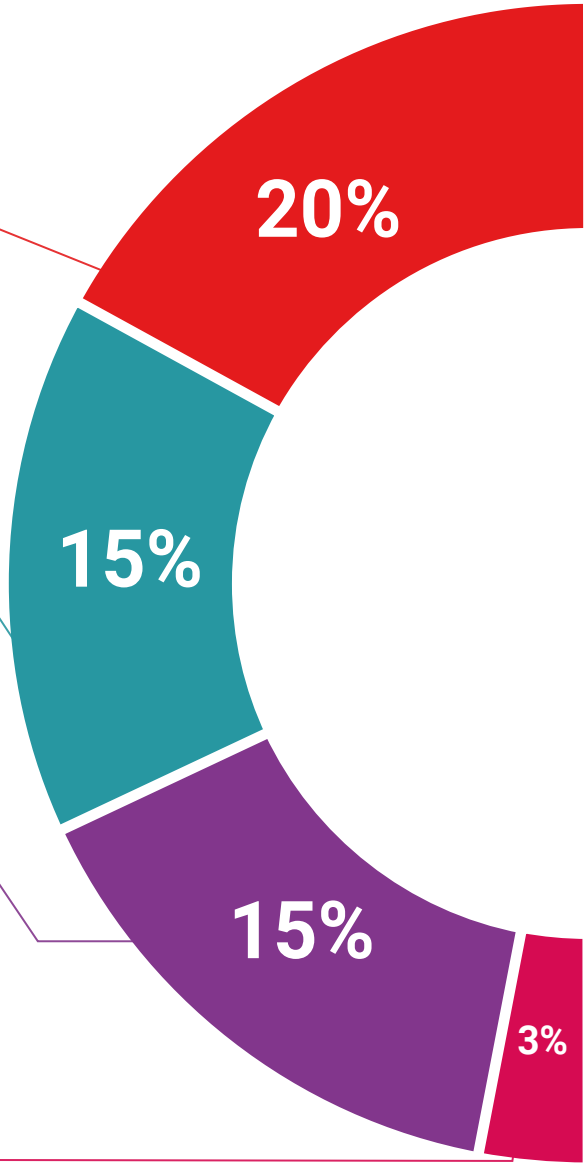
Interactive Summaries

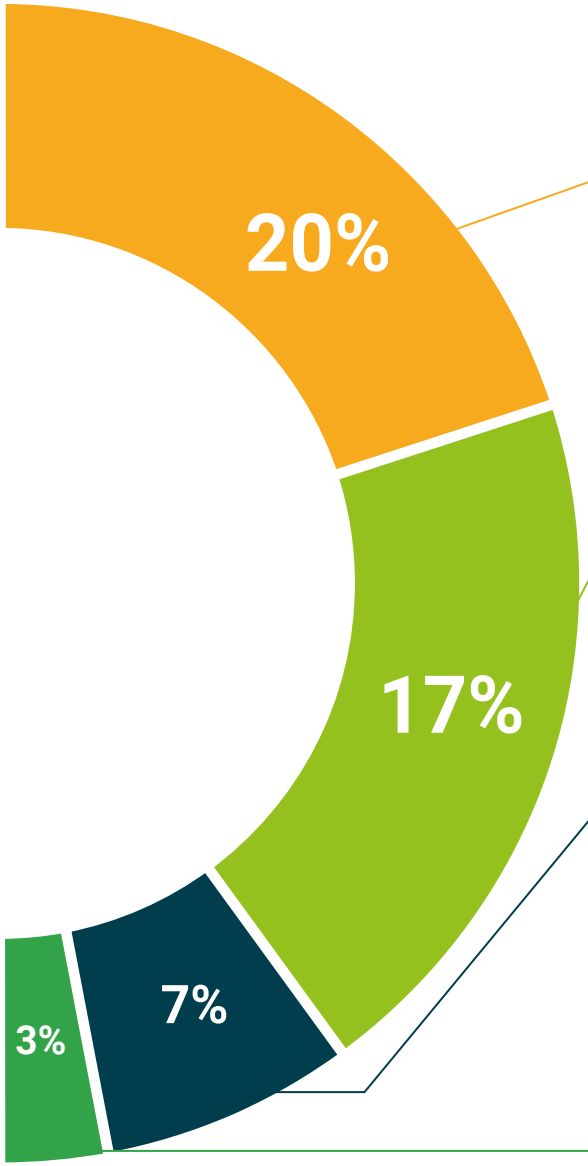
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

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





Expert-Led Case Studies and Case Analysis

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

Testing & Retesting

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

Classes

There is scientific evidence on the efficacy 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.

05

Certificate

The Postgraduate Diploma in Microbiological and Clinical Diagnosis of Infectious Diseases guarantees you, in addition to the most rigorous and up-to-date training, access to a Postgraduate Diploma issued by TECH Technological University.

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

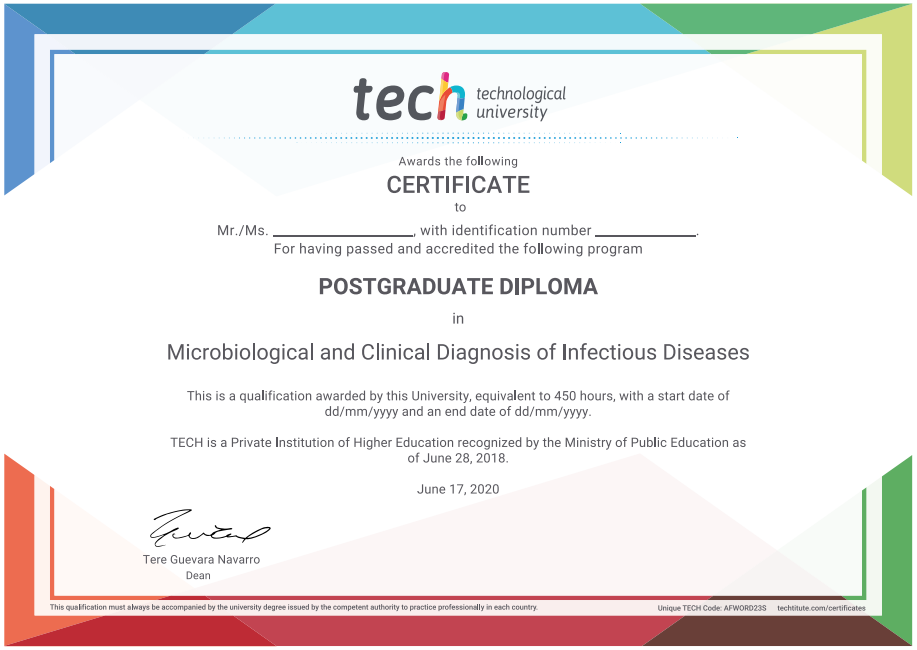
This **Postgraduate Diploma in Microbiological and Clinical Diagnosis of Infectious Diseases** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma,** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Microbiological and Clinical Diagnosis of Infectious Diseases**

Official Nº of hours: **450 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Microbiological and Clinical Diagnosis of Infectious Diseases

This is a qualification awarded by this University, equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country.

Unique TECH Code: AFWORD23S techtitute.com/certificates

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

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