

# Postgraduate Certificate

## Update on Inborn Errors of Metabolism





## Postgraduate Certificate

### Update on Inborn Errors of Metabolism

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

Website: [www.techtute.com/us/medicine/postgraduate-certificate/update-inborn-errors-metabolism](http://www.techtute.com/us/medicine/postgraduate-certificate/update-inborn-errors-metabolism)

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# 01

# Introduction

Pediatric Neurology and Neurodevelopment as a specific training area within Pediatrics has become a spearhead in the modern development of this specialty. At present the body of knowledge in Neuropediatrics is in a state of exponential growth in terms of care, teaching and research.





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*Improve your knowledge through this program, where you will find the best didactic material with real clinical cases. Learn here about the latest advances in the specialty to be able to perform a quality medical practice"*

In recent years we have witnessed a considerable increase in the demand for neuropediatric care, which can be justified for several reasons

On the one hand, the continuous advances in neurosciences have led to the discovery and diagnosis of previously unknown neurological diseases. This has led to the death of children or the development of severe sequelae

On the other hand, the appearance of social changes and advances have led to new care demands that had been previously underdeveloped. The rise of assisted reproduction and the improvement of neonatal care techniques lead to a higher rate of multiple and premature births with increased survival rates. This leads to increased morbidity and the need for more specialized care at both the health and educational levels

General pediatricians cannot encompass the complexity of all pediatric subspecialties. As they progress in their development, each one of them acquires a specific body and entity to become its own specialty. In addition, the particularities of child development and its variability according to age and other factors do not allow neurologists for adults to cope with the existing demand

All this, together with the great diversity and complexity of neurological pathology. In childhood, there is a growing need for more and more neuropediatric units and an increasing demand for professionals intensively trained in this area

This **Postgraduate Certificate in Update on Inborn Errors of Metabolism** is the most comprehensive and up-to-date educational program on the market. The most important features of the course university are:

- ♦ Clinical cases presented by experts in pediatric neurology. The graphic, schematic, and eminently practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Diagnostic and therapeutic novelties on pediatric neurology performance
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- ♦ With a special emphasis on evidence-based medicine and research methodologies in Pediatric Neurology
- ♦ 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



*Update your knowledge through the Postgraduate Certificate in Update on Inborn Errors of Metabolism, in a practical way and adapted to your needs"*



“

*This Postgraduate Certificate may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in Inborn Errors of Metabolism, you will obtain a certificate issued by TECH Technological University”*

Forming part of the teaching staff is a group of professionals in the world of Pediatric Neurology, who bring to this course their work experience, as well as a group of renowned specialists, recognised by esteemed scientific communities

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

This program is designed around Problem Based Learning, whereby the Doctor must try to solve the different professional practice situations that arise during the course university. This will be done with the help of an innovative interactive video system developed by renowned experts in the field of neurology with extensive teaching experience

*The Postgraduate Certificate includes real clinical cases and exercises to bring the development of the Postgraduate Certificate closer to the clinical doctor's practice.*

*Take the opportunity to update your knowledge in Update on Inborn Errors of Metabolism and improve the care of your patients.*



# 02 Objectives

The main objective of the program is the development of theoretical and practical learning, so that the physician can master inborn errors of metabolism in a practical and rigorous way.







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*This refresher program will generate a sense of security when practising medicine, which will help you grow both personally and professionally”*



## General Objective

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- Update the specialist's knowledge in the different syndromic disorders of this discipline, through evidencebased medicine
- Promote work strategies based on a comprehensive approach and multidisciplinary care in the patient's social environment that become a reference model for achieving excellence in care
- Encourage the learning of technical skills and abilities, through a powerful audiovisual system, and the possibility of development through online workshops for simulation and/or specific specialization
- Encourage professional stimulation through continued specialization and research



## Specific Objectives

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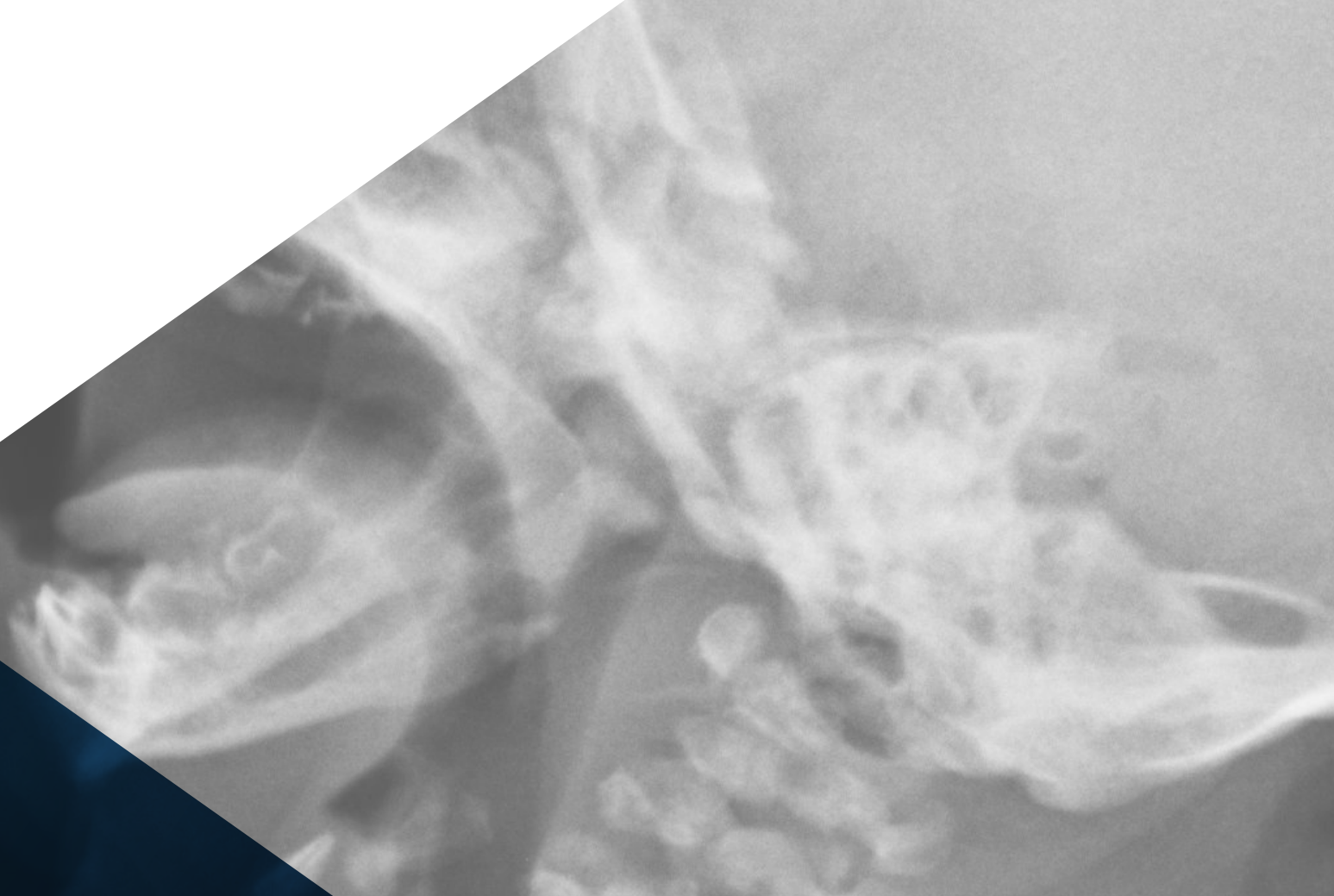
- Define the clinical manifestations of inborn errors of metabolism
- Explain the implication of aminoacidopathies and organic acidemias in neuropsychiatrics
- Perform a correct anamnesis in pediatric neurology
- Explain the procedure for neurological examination of newborns and infants
- Define the correct neuropsychological examination for school children
- Apply neurological assessment scales
- Explain how to perform psychomotor developmental assessment in a thorough and rigorous manner
- Identify warning signs in the evaluation of psychomotor development
- Define the complementary explorations to be applied in prenatal diagnosis
- Explain the usefulness of genetic studies and biochemical studies



03

# Course Management

This program includes in its teaching staff health professionals of recognized prestige, who belong to the field of pediatric neurology , and who pour into this specialization the experience of their work. In addition involved, renowned specialists, members of prestigious national and international scientific communities, are in designing and preparing the program.





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*Learn from leading professionals, the latest  
Update on Inborn Errors of Metabolism"*



## Management



### Dr. Fernández Fernández, Manuel Antonio

- ♦ Degree in Medicine
- ♦ Specialist in Child Neurology
- ♦ Director of the Andalusian Institute of Pediatric Neurology. Seville
- ♦ MIR Pediatrics Specialist at the Virgen del Rocío University Hospital in Seville
- ♦ Accreditation in Neuropediatrics by the Spanish Society of Pediatric Neurology (SENEP)
- ♦ Master's Degree in Healthcare Services Management and Planning. CTO Business School
- ♦ Master's Degree in Entrepreneurship. GADE Business School
- ♦ Master in Leadership and Management Skills. GADE Business School
- ♦ Master's Degree in Clinical Trials. University of Seville
- ♦ Master's Degree in Attention Deficit and/or Hyperactivity Disorder. University Pablo de Olavide
- ♦ Master in Autism Spectrum Disorders. University of La Rioja
- ♦ Expert in Attention Deficit and/or Hyperactivity Disorder throughout life. Alcalá de Henares University
- ♦ Advisor to the Institute for Professional Excellence
- ♦ European Cum Laude Forum Advisor
- ♦ IACAPAP Child and Adolescent Mental Health Manual Reviewer
- ♦ Coordinator of the ADHD group of the SEMA (Spanish Society of Adolescent Medicine)
- ♦ External Expert Evaluator of the Andalusian Health Quality Agency (ACSA)
- ♦ Expert Evaluator of research projects of the Andalusian Ministry of Health
- ♦ Expert in evaluation and research programs of the European Commission

## Management



### Dr. Fernández Jaén, Alberto

- ◆ Degree in Medicine
- ◆ Specialist in Child Neurology
- ◆ CADE Medical Director
- ◆ Head of the Child Neurology Department. Quiron University Hospital, Madrid

# 04

## Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of specialization in the daily medical practice in Pediatric Neurology, aware of the relevance of the current specialization in order to be able to act before the pediatric patient with inborn errors of metabolism with quality teaching through new educational technologies.



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*This Postgraduate Certificate in Update on Inborn Errors of Metabolism is the most comprehensive and up-to-date educational program on the market”*

## Module 1. Update on Inborn Errors of Metabolism

- 1.1. Introduction to Inborn Errors of Metabolism
  - 1.1.1. Introduction and Concept
  - 1.1.2. Etiology and Classification
  - 1.1.3. Clinical Manifestations
  - 1.1.4. General Diagnostic Process
  - 1.1.5. General Intervention Guidelines
- 1.2. Mitochondrial Diseases
  - 1.2.1. Oxidative Phosphorylation Defects
  - 1.2.2. Krebs Cycle Defect
  - 1.2.3. Etiology and Physiopathology
  - 1.2.4. Classification
  - 1.2.5. Diagnosis
  - 1.2.6. Treatment
- 1.3. Fatty Acid  $\beta$ -Oxidation Defects
  - 1.3.1. Introduction to Beta-Oxidation Disorders
  - 1.3.2. Pathophysiology of Beta-Oxidation Disorders
  - 1.3.3. Clinical Manifestations of Beta-Oxidation Disorders
  - 1.3.4. Diagnosis of Beta-Oxidation Disorders
  - 1.3.5. Treatment of Beta-Oxidation Disorders
- 1.4. Gluconeogenesis Defects
  - 1.4.1. Etiology and Physiopathology
  - 1.4.2. Classification
  - 1.4.3. Diagnosis
  - 1.4.4. Treatment
- 1.5. Peroxisomal Diseases
  - 1.5.1. Zellweger Syndrome
  - 1.5.2. X-Linked Adrenoleukodystrophy
  - 1.5.3. Other Peroxisomal Diseases
- 1.6. Congenital Glycosylation Defects
  - 1.6.1. Etiology and Physiopathology
  - 1.6.2. Classification
  - 1.6.3. Diagnosis
  - 1.6.4. Treatment
- 1.7. Neurotransmitter CMD
  - 1.7.1. Introduction to Neurotransmitter Metabolic Diseases
  - 1.7.2. General Concepts of Neurotransmitter Metabolic Diseases
  - 1.7.3. Disorders of GABA Metabolism
  - 1.7.4. Biogenic Amine Disorder
  - 1.7.5. Startle Disease or Hereditary Hyperekplexia
- 1.8. Creatine Brain Defects
  - 1.8.1. Etiology and Physiopathology
  - 1.8.2. Classification
  - 1.8.3. Diagnosis
  - 1.8.4. Treatment
- 1.9. Aminoacidopathies
  - 1.9.1. Phenylketonuria
  - 1.9.2. Hiperphenylalaninemia
  - 1.9.3. Tetrahydrobiopterin Deficiency
  - 1.9.4. Non-Ketotic Hyperglycemia
  - 1.9.5. Maple Syrup Urine Disease
  - 1.9.6. Homocystinuria
  - 1.9.7. Tyrosinemia Type II
- 1.10. IEM of Purines and Pyrimidines
  - 1.10.1. Etiology and Physiopathology
  - 1.10.2. Classification
  - 1.10.3. Diagnosis
  - 1.10.4. Treatment





- 1.11. Lysosomal Diseases
  - 1.11.1. Mucopolysaccharidosis
  - 1.11.2. Oligosaccharidosis
  - 1.11.3. Sphingolipidosis
  - 1.11.4. Other Lysosomal Diseases
- 1.12. Glycogenosis
  - 1.12.1. Etiology and Physiopathology
  - 1.12.2. Classification
  - 1.12.3. Diagnosis
  - 1.12.4. Treatment
- 1.13. Organic Acidemias
  - 1.13.1. Methylmalonic Acidemia
  - 1.13.2. Propionic Acidemia
  - 1.13.3. Isovaleric Acidemia
  - 1.13.4. Glutaric Aciduria Type I
  - 1.13.5. 3-Methyl Crotonyl Glyciduria
  - 1.13.6. Holocarboxylase Synthetase Deficiency
  - 1.13.7. Biotinidase Deficiency
  - 1.13.8. 3-Methylglutaconyl Aciduria Type I
  - 1.13.9. 3-Methylglutaconyl Aciduria Type III
  - 1.13.10. D-2 Hydroxyglutaric Aciduria
  - 1.13.11. L-2 Hydroxyglutaric Aciduria
  - 1.13.12. 4-Hydroxybutyric Aciduria
  - 1.13.13. Deficiency of Acetoacetyl CoA-Thiolase
- 1.14. IEM of Carbohydrates
  - 1.14.1. Etiology and Physiopathology
  - 1.14.2. Classification
  - 1.14.3. Diagnosis
  - 1.14.4. Treatment

05

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: *Re-learning*.

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* have considered it to be one of the most effective.



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*Discover Re-learning, 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you can 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 potential 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 professional medical 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. Students 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 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





## Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.

*The physician 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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



In this program you will have access to the best educational material, prepared with you 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

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



#### Latest 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 this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want



#### Interactive Summaries

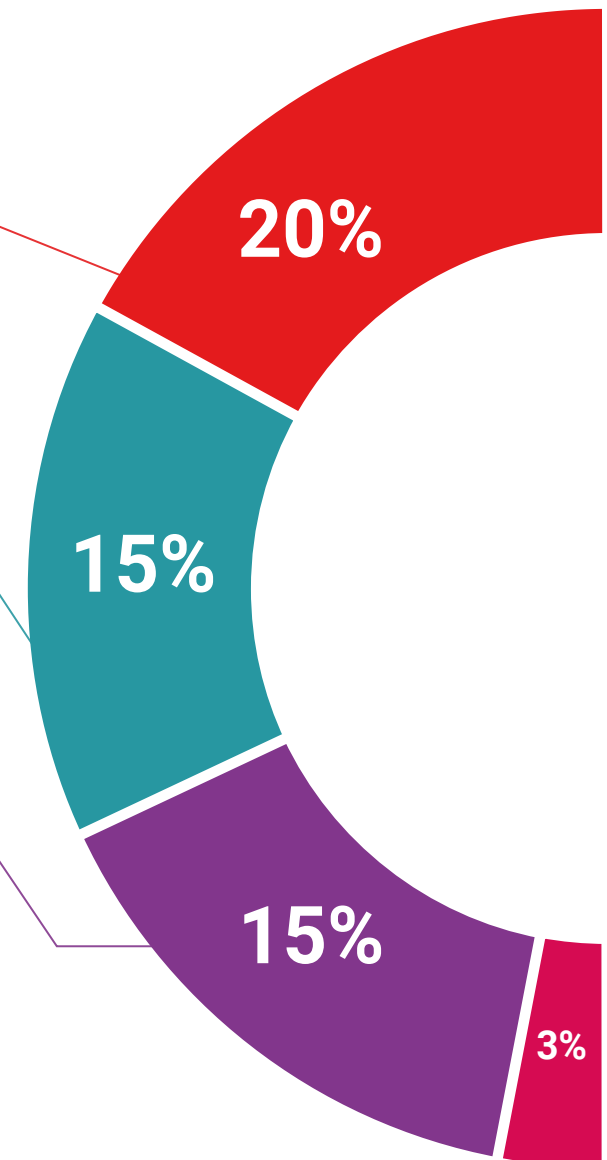
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge

This unique multimedia content presentation training system 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 training





**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 & Re-testing**

We periodically evaluate and re-evaluate your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your 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 our future difficult decisions



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning





# 06 Certificate

The **Postgraduate Certificate in Update on Inborn Errors of Metabolism** guarantees you, in addition to the most rigorous and updated specialization, access to a Postgraduate Certificate issued by **TECH Technological University**.







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*Successfully complete this specialization and receive your diploma without the hassle of travel or paperwork”*

This **Postgraduate Certificate in Update on Inborn Errors of Metabolism** is the most comprehensive and up-to-date educational program on the market.

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

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

Title: **Postgraduate Certificate in Update on Inborn Errors of Metabolism**

ECTS: **8**

Nº Hours: **200**



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

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



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