

Postgraduate Diploma

Metabolic Treatment of Renal Lithiasis



Postgraduate Diploma Metabolic Treatment of Renal Lithiasis

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-metabolic-treatment-renal-lithiasis

Index

01

Introduction to the Program

p. 4

02

Why Study at TECH?

p. 8

03

Syllabus

p. 12

04

Teaching Objectives

p. 18

05

Career Opportunities

p. 22

06

Study Methodology

p. 26

07

Teaching Staff

p. 36

08

Certificate

p. 44

01

Introduction to the Program

Renal lithiasis is one of the most common Urologic Diseases, significantly affecting patients' quality of life and placing a considerable burden on healthcare systems. In recent decades, technological advances driven by Industry 4.0 have transformed therapeutic approaches, offering less invasive alternatives with higher success rates. An example of this is percutaneous nephrolithotomy, which improves the risk of postoperative complications. In view of this, specialists need to keep abreast of the latest scientific postulates in order to provide personalized and effective therapies. With the aim of facilitating this work, TECH has developed a pioneering online university program focused on the metabolic treatment of renal lithiasis.





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With this 100% online program, you will have a holistic knowledge of how to approach kidney stones and will be able to offer personalized therapeutic plans that will optimize the general well-being of patients”

A new report by the World Health Organization shows that Renal Lithiasis affect more than 200 million people worldwide. In fact, the institution recognizes that this disease is one of the main causes of acute pain and hospitalization in the urological field. In addition to this condition, it is related to significant impacts on the mental health and quality of life of patients. Faced with this reality, physicians have a responsibility to acquire advanced clinical skills to apply minimally invasive techniques that optimize clinical outcomes and promote a speedy recovery for patients.

In this context, TECH presents a cutting-edge program in Metabolic Treatment of Renal Lithiasis. Conceived by references in this specialty, the syllabus will delve into issues ranging from the physicochemical aspects involved in the generation of Kidney Stones or various methods for the diagnosis of urologic diseases to the metabolic impact of individuals affected by Renal Lithiasis. In this way, graduates will develop technical skills to master minimally invasive techniques that optimize both safety and clinical results.

To reinforce these teaching contents, physicians have a disruptive methodology at their disposal: Relearning. This system, promoted by TECH, encourages the gradual assimilation of the most complex concepts through repetition, while minimizing the investment of time and effort in having to memorize them. Also, the program is developed 100% online, another significant advantage that provides autonomy to the graduates, allowing them to organize their learning pace depending on their other obligations.

Also, the university program is supported by a variety of complementary materials such as articles, articles of interest and other materials. All of this is accompanied by explanatory videos, interactive summaries and self-assessment tests that enhance the comprehensive specialization of specialists, making this academic option a truly unparalleled opportunity.

This **Postgraduate Diploma in Metabolic Treatment of Renal Lithiasis** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- ♦ The development of case studies presented by experts in Metabolic Treatment of Renal Lithiasis
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ 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



You will rigorously evaluate urinary pH and its impact on the generation of solids, applying sophisticated protocols to improve the accuracy of diagnoses"

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You will delve into the genetic conditions associated with urinary lithiasis, which will help you design individualized prevention methods"

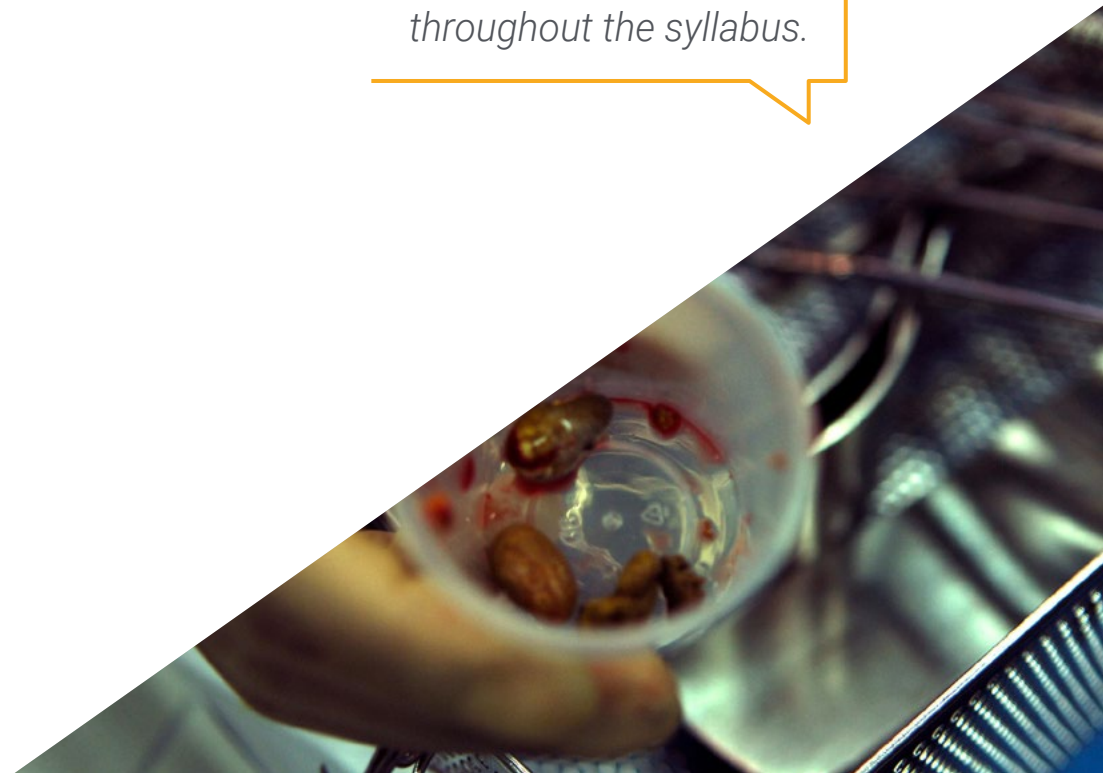
The program's teaching staff includes professionals from the sector who contribute their work experience to this specializing program, as well as renowned specialists from leading societies and prestigious universities.

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 education programmed to prepare for real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

Do you want to learn the most modern techniques for dealing with Ammonium Magnesium Phosphate Lithiasis? Achieve it thanks to this university program.

You will have access to a learning system based on repetition, with a natural and progressive updating of knowledge throughout the syllabus.



02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.



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*Study at the world's largest online university
and guarantee your professional success.
The future starts at TECH”*

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



03 Syllabus

The teaching materials that make up this Postgraduate Diploma offer a complete program, from the anatomical and physiological foundations of the urinary system to the most advanced endourological techniques. In this way, graduates will delve into subjects such as Robotic Surgery, Laser Lithotripsy and Percutaneous Lefrolithotomy; as well as the comprehensive management of the patient and the prevention of recurrences. In addition, the syllabus will cover clinical research techniques, technological innovation and data management in Urology. The syllabus uses an innovative teaching methodology based on active learning and is delivered 100% online.



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You will manage personalized treatment plans that include both therapeutic interventions and preventive strategies to reduce the recurrence of Urologic Diseases”

Module 1. Renal Lithiasis

- 1.1. Renal Lithiasis in the Context of History
 - 1.1.1. The Ancient Age
 - 1.1.2. From the Renaissance to the Present Day
 - 1.1.3. Lessons from History
- 1.2. Physicochemical Aspects Involved in the Formation of Kidney Stones: Crystal Nucleation
 - 1.2.1. Renal Lithiasis, Multifactorial Disease
 - 1.2.2. Crystal Formation in Liquids. Thermodynamic Aspects
 - 1.2.3. Crystal Formation in Liquids. Kinetic Aspects. Homogeneous Nucleation and Heterogeneous Nucleation
 - 1.2.3.1. Crystal Formation in Liquids. Homogeneous Nucleation and Metastable Zone
 - 1.2.3.2. Crystal Formation in Liquids. Heterogeneous Nucleation
- 1.3. Physicochemical Aspects Involved in the Formation of Kidney Stones: Crystal Growth, Aggregation, Effect of Additives
 - 1.3.1. Crystal Formation in Liquids. Crystal growth
 - 1.3.1.1. Secondary Aggregation
 - 1.3.1.2. Primary Aggregation
 - 1.3.2. Influence of Additives on Crystallization. Crystal Development Inhibitors
 - 1.3.3. Influence of Additives on Crystallization. Solubilization Enhancers
- 1.4. Classification of Kidney Stones and Main Associated Disorders
 - 1.4.1. Factors Involved in the Formation of Kidney Stones
 - 1.4.2. Classification of Kidney Stones. Structural Characteristics
 - 1.4.3. Etiological Factors Associated with Each Type of Kidney Stone
- 1.5. Calcium Oxalate Stones
 - 1.5.1. Papillary Calcium Oxalate Monohydrate Stones
 - 1.5.2. Non-Papillary or Cavity Calcium Oxalate Monohydrate Stones
 - 1.5.3. Calcium Oxalate Dihydrate Stones
- 1.6. Phosphate Stones
 - 1.6.1. Infectious Phosphate or Struvite (Ammonium Magnesium Phosphate) Stones
 - 1.6.2. Non-Infectious Phosphate Stones
 - 1.6.2.1. Hydroxyapatite Stones
 - 1.6.2.2. Brushite Stones
 - 1.6.3. Mixed Stones of Calcium Oxalate Dihydrate and Hydroxyapatite



- 1.7. Uric Acid, Urate and Cystine Stones and Uncommon Stones
 - 1.7.1. Uric Acid and Urate Stones
 - 1.7.2. Cystine Stones
 - 1.7.3. Other Uncommon Types of Stones
- 1.8. Diagnostic Fundamentals I: Study of Renal Stones
 - 1.8.1. Morpho-compositional Study
 - 1.8.2. Instrumental Techniques
 - 1.8.2.1. Stereomicroscope (Binocular Magnifying Glass)
 - 1.8.2.2. Scanning Electron Microscopy
 - 1.8.2.3. Infrared Spectroscopy
 - 1.8.3. Recommended Protocol for the Study of Kidney Stones
- 1.9. Diagnostic Fundamentals II: Urinary pH
 - 1.9.1. Urinary pH and the Formation of Solids in Urine
 - 1.9.2. Altered Urinary pH Values
 - 1.9.2.1. Urinary pH Values Below 5.5
 - 1.9.2.2. Urine pH Values Above 6.2
 - 1.9.3. Measurement of Urine pH
- 1.10. Aspects to Consider in the Assessment of the Lithiasic Patient
 - 1.10.1. Urine-Related Factors
 - 1.10.1.1. Assessment of the Risk of Crystallization in the Urine
 - 1.10.1.2. Urine Composition
 - 1.10.1.3. Urine Volume
 - 1.10.1.4. Urinary pH
 - 1.10.1.5. Urodynamic Factors
 - 1.10.1.6. Criteria for the Existence of Risk of Crystallization in Urine
 - 1.10.1.7. Other Tools for Assessing the Risk of Crystallization of Urine
 - 1.10.2. Selection of Urine Samples
 - 1.10.3. Urinary Infection

Module 2. Medical Screening of Patients with Renal Lithiasis

- 2.1. Metabolic Screening
 - 2.1.1. The Metabolic Screening
 - 2.1.2. How and When to Perform the Metabolic Screening
 - 2.1.3. Indications for the Metabolic Screening: Who Should Undergo the Screening
- 2.2. Classification of Patients at Risk of Urolithiasis: High-Risk Patients
 - 2.2.1. Intrinsic, Extrinsic and Favorable Factors
 - 2.2.2. Population at Risk
 - 2.2.3. Categories of Stone-Forming Patients
 - 2.2.3.1. Specific Risk Factors for Stone Formation
- 2.3. Medical Treatment of Idiopathic Hypercalciuria
 - 2.3.1. Assessment of the Patient with Idiopathic Hypercalciuria
 - 2.3.2. Dietary Treatment
 - 2.3.3. Drug Treatment: Thiazides
- 2.4. Primary and Secondary Hyperparathyroidism
 - 2.4.1. Pathophysiology of Primary and Secondary Hyperparathyroidism
 - 2.4.2. Differential Diagnosis of Hyperparathyroidism
 - 2.4.3. Clinical Management of Hyperparathyroidism in the Context of Urolithiasis
- 2.5. Primary Hyperoxaluria and Nephrocalcinosis
 - 2.5.1. Etiology
 - 2.5.2. Diagnostic Approach
 - 2.5.3. Treatment
- 2.6. Primary and Secondary Hyperoxaluria. Dietary and Enteral
 - 2.6.1. Etiology of Hyperoxalurias
 - 2.6.2. Diagnostic Approach to Hyperoxalurias
 - 2.6.3. Treatment of Hyperoxalurias
 - 2.6.4. Specific Treatments for Primary Hyperoxaluria

- 2.7. Hypocitraturia
 - 2.7.1. Pathophysiology and Causes of Hypocitraturia
 - 2.7.2. Relevance of Hypocitraturia in the Formation of Kidney Stones
 - 2.7.3. Assessment and Treatment of Hypocitraturia in Patients with Urolithiasis
- 2.8. Hyperuricosuria
 - 2.8.1. Pathophysiology and Causes of Uricosuria
 - 2.8.2. Impact of Uricosuria on the Formation of Kidney Stones
 - 2.8.3. Assessment and Management Strategies for Uricosuria
- 2.9. Renal Tubular Acidosis
 - 2.9.1. Types of Tubular Acidosis
 - 2.9.2. Etiology and Pathophysiology of Distal Renal Tubular Acidosis
 - 2.9.3. Diagnosis of Distal Renal Tubular Acidosis
 - 2.9.4. Treatment of Distal Renal Tubular Acidosis
- 2.10. Patient Dietary Management
 - 2.10.1. Patient Dietary Management
 - 2.10.2. Water Intake
 - 2.10.3. Dietary Treatment of the Main Alterations in Urinary Excretion
 - 2.10.3.1. Dietary Treatment of Hypercalciuria
 - 2.10.3.2. Dietary Treatment of Hyperoxaluria
 - 2.10.3.3. Dietary Treatment of Hyperuricosuria
 - 2.10.3.4. Dietary Treatment of Hypocitraturia
 - 2.10.4. Dietary Recommendations at the Extreme Ages of Life
 - 2.10.4.1. Dietary Recommendations for Children with Lithogenic Kidney Stones
 - 2.10.4.2. Dietary Recommendations for Elderly People with Lithogenic Kidney Stones



Module 3. Management and Outpatient Monitoring of Patients with Non-Calcium Kidney Stones

- 3.1. Uric Acid Stones
 - 3.1.1. Etiology and Pathophysiology
 - 3.1.2. Diagnosis
 - 3.1.3. Medical Treatment
- 3.2. Infectious Ammonium Phosphate and Magnesium Lithiasis
 - 3.2.1. Etiology and Pathophysiology
 - 3.2.2. Diagnosis
 - 3.2.3. Medical Treatment
- 3.3. Cystine Stones
 - 3.3.1. Etiology and Pathophysiology
 - 3.3.2. Diagnosis
 - 3.3.3. Medical Treatment
- 3.4. Other Lithiasis
 - 3.4.1. Types of Rare Lithiasis
 - 3.4.2. Etiopathogenesis of Rare Lithiasis
 - 3.4.3. Diagnosis and Treatment
- 3.5. Genetics in Urolithiasis
 - 3.5.1. Genetic Diseases Associated with Urinary Lithiasis
 - 3.5.2. Factors that Point to Monogenic Disease in a Patient with Urinary Lithiasis
 - 3.5.3. Treatment of Renal Lithiasis in Genetic Diseases
- 3.6. New Medical Treatments in Urolithiasis
 - 3.6.1. Innovative Therapies for the Prevention of Stone Formation
 - 3.6.2. Pharmacological Advances in the Treatment of Renal Lithiasis
 - 3.6.3. Integration of Emerging Treatments in Clinical Practice
- 3.7. Microbiota in Urolithiasis
 - 3.7.1. Pathophysiological Principles of Intestinal Microbiota
 - 3.7.2. Relation between Intestinal Microbiota and the Formation of Urolithiasis
 - 3.7.3. Possibility of Alteration of Intestinal Microbiota and its Impact on Urolithiasis

- 3.8. Artificial Intelligence and Urolithiasis
 - 3.8.1. Concepts and History of Artificial Intelligence Applied to Urolithiasis
 - 3.8.2. Types of Artificial Intelligence Applied to Urolithiasis
 - 3.8.3. Application of Artificial Intelligence in Urolithiasis
- 3.9. Ph Control in Urolithiasis: How To Do It, Recommendations
 - 3.9.1. Importance of pH in Urolithiasis
 - 3.9.2. Measuring Urine pH
 - 3.9.3. Recommendations for pH Control in Non-Calcium Urolithiasis
- 3.10. Structure and Coordination of a Urolithiasis Unit
 - 3.10.1. The Urolithiasis Unit
 - 3.10.2. Structure of a Lithotripsy Unit
 - 3.10.3. Staff Organization



Specialized reading, based on the latest scientific evidence, will allow you to further expand the detailed information provided in this academic option"

04 Teaching Objectives

Through this program in Metabolic Treatment of Renal Lithiasis, physicians will have the necessary tools to specialize in the diagnosis and advanced treatment of Kidney Stones. In this sense, graduates will acquire advanced skills to handle the most cutting-edge minimally invasive techniques to optimize clinical outcomes and provide a more satisfying experience for patients. The program also encourages critical thinking and the ability to lead research and innovation projects, ensuring that professionals are prepared to successfully face any challenge in the field of Urology.





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You will skillfully use Robotic Surgery in your regular clinical practice, allowing individuals to recover with greater immediacy”



General Objectives

- ♦ Identify the fundamental physical and chemical aspects involved in the formation of kidney stones
- ♦ Delve into the classification of kidney stones according to the etiological factors that generate them
- ♦ Establish the diagnostic foundations based on the study of kidney stones
- ♦ Determine the key diagnostic aspects based on the study of urine
- ♦ Delve into the metabolic study of patients with renal lithiasis
- ♦ Define the classifications of patients at risk of urolithiasis, considering factors that may contribute to the formation of stones
- ♦ Assess the various associated metabolic conditions and their specific treatments
- ♦ Acquire a comprehensive approach to the dietary and clinical management of the lithiasic patient
- ♦ Address the etiology and pathophysiology of non-calcium lithiasis, identifying its distinctive characteristics
- ♦ Define the medical treatment options available for each type of condition
- ♦ Assess the role of genetics and microbiota in the management of Urolithiasis
- ♦ Establish guidelines for pH control and coordination of Urolithiasis units
- ♦ Evaluate renal physiology and pathophysiology, as well as the mechanisms of obstruction
- ♦ Delve into the most widely used diagnostic imaging methods in Renal Lithiasis
- ♦ Define therapeutic approaches to renal colic
- ♦ Identify the complications associated with lithiasis and propose management strategies based on international clinical guidelines
- ♦ Analyze the historical evolution of Extracorporeal Shock Wave Lithotripsy
- ♦ Assess the physical principles, types of energy and those of Extracorporeal Shock Wave Lithotripsy
- ♦ Examine the results, complications and post-procedure follow-up, as well as the latest advances in this technology
- ♦ Establish recommendations based on clinical guidelines and develop radiation protection strategies in the context of Endourology
- ♦ Analyze the historical evolution of endourology and its current applications, focusing on technological and surgical advances
- ♦ Examine renal and ureteral anatomy relevant to endourology, establishing its importance in the execution of procedures
- ♦ Assess the criteria for the selection of surgical techniques and energy sources in Endourology
- ♦ Identify the endourological approaches and specific equipment used in semirigid ureteroscopy
- ♦ Delve into the historical evolution of flexible ureteroscopy and its development
- ♦ Evaluate the standard and extended indications for Retrograde Intrarenal Surgery
- ♦ Examine the materials, surgical techniques and advanced technologies used in Retrograde Intrarenal Surgery
- ♦ Identify intraoperative and postoperative complications, establishing strategies for their prevention and management, with a focus on the application of ALARA principles
- ♦ Analyze the different patient positions in percutaneous nephrolithotomy
- ♦ Examine the materials and techniques for both puncture and dilatation



Specific Objectives

Module 1. Renal Lithiasis

- ♦ Analyze the thermodynamic and kinetic aspects involved in the formation of kidney stones
- ♦ Identify the etiological aspects involved in the formation of each type of kidney stone
- ♦ Specify the appropriate stages and methodologies for the study of kidney stones
- ♦ Establish the fundamental aspects in the assessment of the risk of urinary crystallization

Module 2. Medical Screening of Patients with Renal Lithiasis

- ♦ Define the criteria for carrying out metabolic studies in patients with Renal Lithiasis
- ♦ Identify the risk factors linked to the formation of stones in order to classify patients efficiently
- ♦ Manage the main medical treatment strategies for different metabolic conditions
- ♦ Achieve a dietary and drug-based approach in the comprehensive management of patients with lithiasis, based on scientific evidence

Module 3. Management and Outpatient Monitoring of Patients with Non-Calcium Kidney Stones

- ♦ Establish the clinical and diagnostic characteristics of Uric Acid, Magnesium Ammonium Phosphate and Cystine Lithiasis
- ♦ Analyze the impact of genetic factors and microbiota on the predisposition and management of Urolithiasis
- ♦ Evaluate new therapeutic and technological options, such as artificial intelligence
- ♦ Create protocols for the effective control of urinary pH and its application in outpatient follow-up

05

Career Opportunities

This TECH Metabolic Treatment of Renal Lithiasis program is an ideal opportunity for all physicians who wish to update their skills and master advanced techniques in the treatment of Kidney Stones. Through this specialized knowledge, graduates will significantly improve the care they provide to their patients and expand their job opportunities in the field of Urology. In fact, the university program will provide experts with the most innovative technological and methodological tools to perform their work with the utmost precision.





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You will perform advanced procedures for the management of Kidney Stones using sophisticated techniques in the Metabolic Treatment of Renal Lithiasis"

Graduate Profile

Graduates of this comprehensive Postgraduate Diploma will be highly qualified physicians capable of integrating advanced techniques in the management of Renal Lithiasis, improving patient care and the management of clinical resources. In addition, they will have the skills to design, implement and assess endourological procedures that optimize therapeutic processes, personalize treatments and effectively monitor the progress of patients. In addition, professionals will be prepared to face ethical challenges and guarantee data security in the use of advanced technologies. Furthermore, experts will be able to lead innovation and research projects in Urology, contributing to the advancement of renal health.

You will provide comprehensive advice to various healthcare organizations on the implementation of endourological techniques such as Flexible Ureteroscopy.

- ♦ **Technological Adaptation in Urology:** Ability to incorporate advanced technologies such as Robotic Surgery or state-of-the-art imaging systems, improving the precision and effectiveness in the treatment of Renal Lithiasis
- ♦ **Clinical Problem Solving for the Metabolic Treatment of Renal Lithiasis:** Ability to use critical thinking in the identification and resolution of specific challenges in the management of Kidney Stones, optimizing treatments through innovative and evidence-based approaches
- ♦ **Ethical Commitment and Clinical Data Security:** Responsibility in the application of ethical principles and privacy regulations, guaranteeing both the protection and the adequate management of patient data when using advanced technologies in endourological procedures
- ♦ **Interdisciplinary Collaboration in Urology:** Ability to communicate and work effectively with other health professionals such as nephrologists, radiologists and specialized technicians, facilitating the integration of knowledge for comprehensive user care

After completing the program, you will be able to use your knowledge and skills in the following positions:

- 1. Urologist Specialized in Advanced Lithotripsy:** Performs advanced procedures for the fragmentation and removal of Kidney Stones using techniques such as shock wave lithotripsy and laser lithotripsy.
- 2. Comprehensive Care Manager in Urolithiasis:** Facilitates coordination between different medical specialties to offer a multidisciplinary approach to the treatment of patients with Kidney Stones.
- 3. Specialist in Prevention and Management of Kidney Stones:** Focused on the prevention of the generation of new stones and on the comprehensive management of patients to reduce the recurrence of Renal Lithiasis.
- 4. Consultant in Endourology:** Advises healthcare institutions on the implementation of advanced endourological techniques for the management of Renal Lithiasis, improving existing clinical protocols.
- 5. Clinical Innovation Supervisor in Urolithology:** Leads projects that incorporate new technologies and innovative approaches in the treatment of Renal Lithiasis, improving the efficiency and quality of medical care.
- 6. Teleurology Expert:** Uses digital platforms to offer remote consultations and follow-up to patients with Renal Lithiasis, improving access and continuity of care.
- 7. Clinical Data Management Advisor in Urolithology:** Responsible for the management and analysis of large volumes of clinical data related to kidney stones, using advanced tools to optimize healthcare.
- 8. Researcher in Kidney Stones:** Dedicated to the research and development of new therapies for the treatment of Kidney Stones, contributing to scientific progress in the field.



You will use digital platforms to offer remote monitoring to patients with Prostate Cancer, promoting accessibility to urological services"

06

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



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TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”

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.

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*At TECH you will NOT have live classes
(which you might not be able to attend)”*



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*”

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.

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.

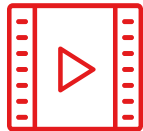
The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

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

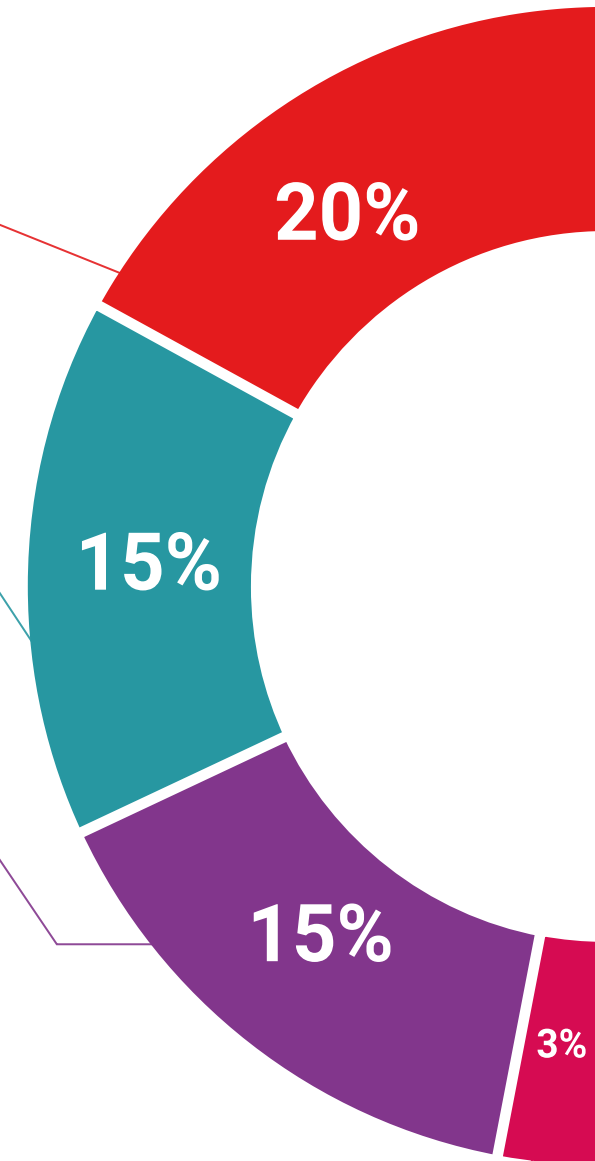
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

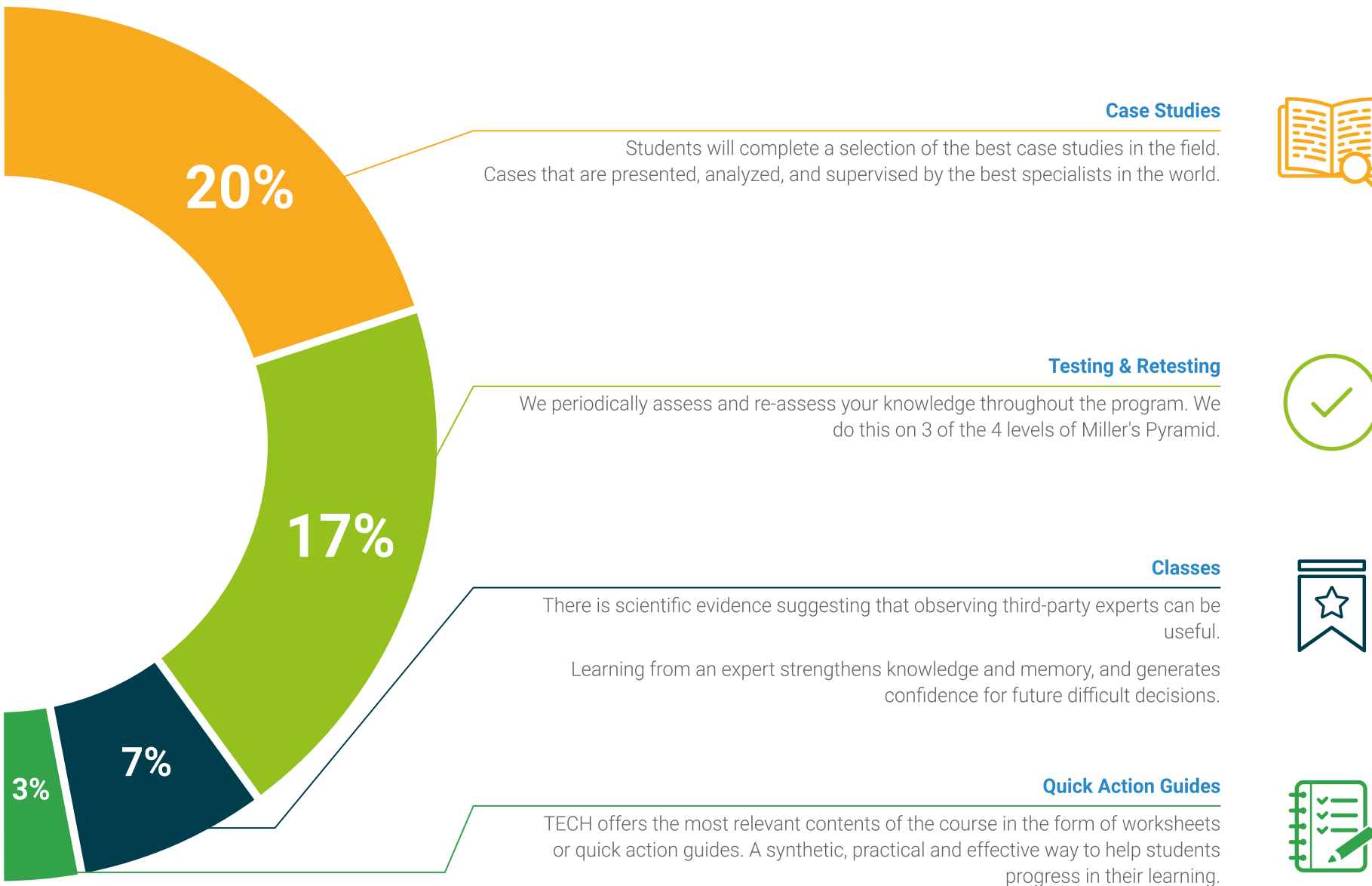
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





07

Teaching Staff

The fundamental premise of TECH is based on providing the most pragmatic, up-to-date and comprehensive university programs on the educational market. For this reason, it carries out a meticulous process to establish its teaching staff. As a result of this effort, this study has the collaboration of authentic references in the field of Urology. These specialists have worked in internationally renowned healthcare institutions, where they have used the latest minimally invasive techniques to optimize the quality of life of numerous patients. Graduates will therefore benefit from a first-rate immersive experience that will optimize their practice.



“

The teaching staff of this program has extensive experience in research and professional application in Metabolic Treatment of Renal Lithiasis”

Management



Dr. Servera Ruiz de Velasco, Antonio

- ♦ Director of Endourology and Lithiasis at the Hospital of Manacor
- ♦ Urology Specialist at Juaneda Miramar Hospital
- ♦ Internship in Laparoscopic Pelvic and Retroperitoneal Surgery at Heidelberg University Hospital
- ♦ Scientific Researcher
- ♦ Director of 6 international Clinical Trials
- ♦ Internship in Robotic Surgery at the Institut Mutualiste Montsouris
- ♦ Internship in Laparoscopic and Percutaneous Surgery at the Italian Hospital of Buenos Aires
- ♦ PhD in Health Sciences from the University of the Balearic Islands
- ♦ Degree in Medicine and Surgery from the University of Zaragoza
- ♦ Member of the European College of Urology

Professors

Dr. Costa-Bauzá, Antonia

- ♦ Professor of Toxicology, Fundamental Biology and Health Sciences
- ♦ Researcher in Renal Lithiasis and Biomineralization at the University Institute of Health Sciences
- ♦ Author of the books "Crystallization in solution. Basic concepts" and "Kidney stones. *Types and prevention*"
- ♦ Author of more than 170 specialized articles published in indexed journals
- ♦ Speaker at more than 220 scientific conferences on a national and global scale
- ♦ PhD in Chemical Sciences from the University of the Balearic Islands
- ♦ Member of the Renal Lithiasis Research Laboratory

Dr. Cancini Azuaje, Miguel Alejandro

- ♦ Urologist at Nuestra Señora del Prado General University Hospital
- ♦ Physician in the Urology Department at Parque Marazuela Hospital
- ♦ Urology Specialist at Campo Arañuelo Regional Hospital
- ♦ Internship in Endoscopic Surgery and Laparoscopy at the University of Carabobo
- ♦ Residency at Dr. Egor Nucete General Hospital
- ♦ Postgraduate in Urology at Hospital Universitario de los Andes
- ♦ Master's Degree in Minimally Invasive Urological Surgery at Centro Jesús Usón
- ♦ Bachelor's Degree in Medicine from the Rómulo Gallegos University
- ♦ Member of the World Venezuelan Urologists Association

Dr. Grases Freixedas, Feliciano

- ♦ Director of the Renal Lithiasis Research Laboratory at the University Institute of Health Sciences
- ♦ Director of the Renal Calculus Biobank
- ♦ Specialist in the field of Urology
- ♦ Scientific Researcher with 300 international publications and 5 books
- ♦ PhD in Medical Sciences with a specialization in Urology from the University of Barcelona
- ♦ Bachelor of Medicine from the University of Barcelona
- ♦ Full Member of the Royal Academy of Medicine of the Balearic Islands

Dr. Mainez Rodríguez, Juan Antonio

- ♦ Urologist at La Paz University Hospital
- ♦ Director of International Cooperation of the Spanish Association of Urology
- ♦ Urologist at La Milagrosa Hospital
- ♦ Clinical Researcher
- ♦ Internship in Lithiasis and Endourology at Bautista Hospital Medical Center
- ♦ Residency in Urology at the Río Hortega University Hospital
- ♦ Bachelor of Medicine from the Complutense University of Madrid
- ♦ Member of the European Society of Urology

Dr. Ortiz Arduán, Alberto

- ♦ Head of Nephrology and Hypertension at the Jiménez Díaz Foundation University Hospital
- ♦ Specialist in Nephrology
- ♦ Coordinator of the Spanish Renal Research Network
- ♦ Postdoctoral Researcher in Molecular Nephrology at the University of Pennsylvania
- ♦ Editor of the journal "Clinical Kidney Journal"
- ♦ Corresponding Academician of the Royal National Academy of Medicine of Spain
- ♦ PhD in Medicine from the Autonomous University of Madrid
- ♦ Master's Degree in Medical Management and Clinical Administration from UNED
- ♦ Bachelor's Degree in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Member of: European Renal Association, Dutch Kidney Foundation, Madrid Nephrology Society and Editorial Board of the American Society of Nephrology

Dr. Cansino Alcaide, Ramón

- ♦ Head of Section of Endourology and Lithiasis at La Paz University Hospital
- ♦ Urology Specialist at La Paz University Hospital
- ♦ Urologist at the University Hospital Vithas Madrid La Milagrosa
- ♦ Lecturer in Urology training courses and postgraduate studies.
- ♦ Regular speaker at European and Spanish Urologic Association Congresses
- ♦ Member of the International Urolithiasis Alliance
- ♦ Doctor of Medicine and Surgery from the Autonomous University of Madrid

Dr. Martín Higuera, Cristina

- ♦ Researcher at the Institute of Experimental Immunology at the University Hospital of Bonn
- ♦ Founder of PHHP Team
- ♦ Scientific Consultant for Novo Nordisk
- ♦ Promoter of the European Association of Patients with Hyperoxaluria
- ♦ Biomedical Researcher at Orphan Biotech
- ♦ Advisor to Meta Pharmaceuticals
- ♦ PhD in Biomedical Sciences from the University of La Laguna
- ♦ Master's Degree in Molecular Biomedicine from the Autonomous University of Madrid
- ♦ Degree in Medicine from the University of La Laguna
- ♦ Bachelor's Degree in Biology from the University of La Laguna
- ♦ Member of the OxalEurope Foundation
- ♦ Certification in Animal Experimentation

Dr. Zambudio Munuera, Alberto

- ♦ Urology Physician at the San Cecilio Clinical University Hospital
- ♦ Clinical Researcher
- ♦ Urology Residency at the San Cecilio Clinical University Hospital
- ♦ Master's Degree in Integration of Medical Knowledge and Application to Clinical Problem Solving
- ♦ Degree in Medicine from the University of Murcia

Dr. Abad López, Pablo

- Physician in the Department of Urology at La Paz University Hospital
- Urologist at San Carlos Clinical Hospital
- Specialist in the treatment of renal, adrenal and retroperitoneal carcinoma
- Coordinator of the 4Doctors platform
- Editor of the scientific journal "Frontiers in Urology"
- Editor of the scientific journal "Archivos Españoles de Urología"
- Editor of the scientific journal "Urology Research and Practice"
- Creator of digital content for the Urology Cheat Sheets platform
- Residency in Urology at the 12 de Octubre University Hospital
- Master's Degree in Clinical Practice and Medical Professionalism from the University of Alcalá de Henares
- Master's Degree in Urooncology from the CEU - Cardenal Herrera University
- Master's Degree in Advanced Urinary Incontinence Surgery from the Complutense University of Madrid
- Master's Degree in Multidisciplinary Approach to Prostate Cancer from the Complutense University of Madrid
- Degree in Medicine from the Complutense University of Madrid

Dr. Millán Ramos, Irene

- Urologist at San Cecilio University Hospital
- Family Doctor at Albayda La Cruz Center
- Clinical Researcher
- Residency in Urology at San Cecilio University Hospital
- Degree in Medicine from the University of Granada

Dr. Arrabal Polo, Miguel Ángel

- Head of Urology at the San Cecilio University Hospital
- Urology Physician at the Novamédica Clinic
- Urologist at the Asisa Medical Center
- Specialist in Lithiasis, Andrology and Minimally Invasive Surgery
- Clinical Researcher with an extensive scientific production
- PhD in Medicine with specialization in Surgery and Urology from the University of Granada
- Master's Degree in Tissue Engineering from the University of Granada
- Master's Degree in Stem Cells and Regenerative Medicine from the University of the Peoples of Europe
- Bachelor's Degree in Medicine with specialization in Urology from the University of Granada
- Winner of 25 awards for his clinical contribution

Dr. Budía Alba, Alberto

- Section Chief of the Lithotripsy and Endourology Unit at the Hospital Universitario y Politécnico La Fe de Valencia.
- National Coordinator of the Lithiasis group of the Spanish Association of Urology
- Vice President of AUCV
- Associate Professor at the University of Valencia
- Doctor of Medicine and Surgery cum laude by the ULV
- Degree in Medicine and Surgery at ULV
- Master's Degree in Management and Organization of Hospitals and Health Services from the UPV
- Member of: EULIS and EAU

Dr. Ramos Ramos, Juan Carlos

- ♦ Internal Medicine Specialist
- ♦ Assistant Physician, Infectious Diseases Unit, La Paz University Hospital, Madrid
- ♦ Internist at the University Hospital Sanitas La Zarzuela, Madrid
- ♦ PhD in Medicine and Surgery from the University of Alcalá de Henares, Madrid
- ♦ Master's Degree in Infectious Diseases in Intensive Care from the Universidad-Empresa Foundation at the University of Valencia

Dr. Cano García, María del Carmen

- ♦ Director of the Urologic Oncology Department at the Central Hospital of Sevilla
- ♦ Head of the Urologic Oncology Department at the National Medical Center
- ♦ Specialist doctor in the Urology Department at the San Cecilio University Hospital
- ♦ Scientific researcher with an extensive portfolio of specialized articles
- ♦ Coordinator of Clinical Projects at the Institute of Biomedical Research in Salamanca
- ♦ Urologist at the University Hospital of Granada
- ♦ Urologic Oncology consultant at the Mayo Clinic
- ♦ PhD in Medicine from the University of Granada
- ♦ Master's Degree in Urologic Oncology from the CEU Cardenal Herrera University
- ♦ Master's Degree in Healthcare Quality Management in Health Services from the University of Murcia
- ♦ Master's Degree in Urological Surgery Update from the CEU Cardenal Herrera University
- ♦ Degree in Medicine from the University of Valencia
- ♦ Member of: Spanish Society of Urology and European Association of Urology



**Dr. Gutiérrez Tejero, Francisco**

- ♦ Urology Specialist at San Cecilio Hospital
- ♦ Urologist at the University Hospital of Jaén
- ♦ Expert in Family and Community Medicine
- ♦ Specialist in Urologic Oncology and Robotic Surgery
- ♦ Clinical Researcher
- ♦ Urology Internship at San Cecilio University Hospital in Granada
- ♦ Residency in Urology at the Virgen de las Nieves Hospital
- ♦ PhD in Medicine from the University of Granada
- ♦ Master's Degree in Advanced Prostate Cancer from the University of Salamanca
- ♦ Master's Degree in Metastatic Renal Cancer from the University of Salamanca
- ♦ Master's Degree in Andrology and Reconstructive Surgery from the University of Salamanca
- ♦ Bachelor's Degree in Medicine and Surgery from the University of Granada

Dr. Galán Llopis, Juan Antonio

- ♦ Chief of the Urology Service of Vinalopó Hospital
- ♦ Manager of the Urological Clinic Juan Antonio Galan
- ♦ Coordinator of the Childhood Mental Health Unit, Alicante University General Hospital
- ♦ Specialist in Urology at the General University Hospital of Elche
- ♦ Coordinator of the Urolithiasis Group of the Spanish Association of Urology.
- ♦ Author of numerous scientific articles from his specialty
- ♦ Doctor of Medicine and Surgery from the University of Valencia

08 Certificate

This Postgraduate Diploma in Metabolic Treatment of Renal Lithiasis guarantees, in addition to the most rigorous and up-to-date program, access to an Postgraduate Diploma issued by TECH Global University.



“

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

This private qualification will allow you to obtain a diploma for the **Postgraduate Diploma in Metabolic Treatment of Renal Lithiasis** 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 Diploma in Metabolic Treatment of Renal Lithiasis**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





Postgraduate Diploma
Metabolic Treatment
of Renal Lithiasis

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma

Metabolic Treatment of Renal Lithiasis

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