

Postgraduate Diploma

Lithotripsy and Endourology in Renal Lithiasis



Postgraduate Diploma Lithotripsy and Endourology in 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-lithotripsy-endourology-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

The prevalence of Renal Lithiasis has increased globally, representing a significant challenge for public health with an incidence that varies between 5 and 20% depending on the region. In response to this, endourological techniques (such as flexible ureteroscopy, laser lithotripsy or percutaneous nephrolithotomy) have become established as standard methods for the treatment of Kidney Stones of various sizes and locations. However, the optimal choice of the appropriate technique is still a matter of clinical debate that requires a detailed assessment of the characteristics of the stone and the patient. For this reason, TECH has created a cutting-edge university program focused on the latest advances in Lithotripsy and Endourology in Renal Lithiasis. In addition, it is delivered completely online.



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Through this completely online Postgraduate Diploma, you will design and implement personalized treatments for the approach to Renal Lithiasis and improve the quality of life of numerous patients”

A new study by the United Nations reveals that Renal Lithiasis affects 15% of the adult population worldwide. As a result, these individuals suffer from severe pain. At the same time, this disease entails a significant economic burden of more than 2 billion dollars a year in treatments and hospitalizations. For this reason, the organization urges physicians to use therapeutic advances in their daily practice that result in less invasive and more effective alternatives. Examples of these tools are extracorporeal shock wave lithotripsy and percutaneous nephrolithotomy.

In this scenario, TECH has launched an innovative Postgraduate Diploma in Lithotripsy and Endourology in Renal Lithiasis. Devised by experts in the sector, the academic program will delve into areas ranging from the physiological foundations of the kidneys and techniques for monitoring patients after suffering from Urinary Kidney Stones to the use of technological instruments such as Ureterorenoscopy. Thanks to this, graduates will obtain advanced clinical skills to perform surgical procedures with great precision, safety and efficiency.

On the other hand, this program is based entirely on a 100% online modality, making it easy for physicians to plan their own study schedules to experience a fully efficient catch-up. In addition, professionals will enjoy a wide variety of multimedia resources aimed at promoting a dynamic and natural knowledge update. To access the Virtual Campus, all professionals will need is a device with an Internet connection (including their own cell phone). They will also have the support of an experienced teaching staff at all times, who will resolve any doubts that may arise during their syllabus.

This **Postgraduate Diploma in Lithotripsy and Endourology in Renal Lithiasis** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of case studies presented by experts in Lithotripsy and Endourology
- ♦ 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 process of self-assessment can be used 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 delve into the ethical and security regulations applicable to the handling of clinical data, including the performance of endourological procedures"

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Thanks to TECH's exclusive Relearning system, you will be able to study all the contents of this program from the comfort of your home and without the need to travel to an on-site educational center”

The program's teaching staff includes professionals from the field who contribute their work experience to this educational 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.

You will apply critical and analytical thinking to both the identification and resolution of clinical challenges related to Renal Lithiasis.

You will integrate emerging technologies such as Robotic Surgery into your medical practice, allowing you to increase the precision of surgical interventions.



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 content of this Postgraduate Diploma in Lithotripsy and Endourology in Renal Lithiasis from TECH covers subjects ranging from the anatomical and physiological foundations of the urinary system to the most advanced endourological techniques. Physicians will therefore delve into minimally invasive procedures such as laser lithotripsy and percutaneous nephrolithotomy. They will also delve into comprehensive patient management and the prevention of recurrences. In addition, the syllabus will analyze innovative areas such as artificial intelligence applied to Urology and the genetics of Renal Lithiasis.



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You will develop customized treatment plans that incorporate both therapeutic interventions and preventive strategies, with the aim of reducing the recurrence of Urologic Diseases"

Module 1. Clinical Presentation of Renal Lithiasis

- 1.1. Renal Physiology
 - 1.1.1. Renal Physiology
 - 1.1.2. Estimated Glomerular Filtration Rate
 - 1.1.3. Kidney Pathophysiology
- 1.2. Pathophysiology of Acute Obstruction
 - 1.2.1. Pathophysiology at the Cortical Level
 - 1.2.2. Pathophysiology at the Medullary Level
 - 1.2.3. Pathophysiology at the Renoureteral Level
- 1.3. Pathophysiology of Chronic Obstruction
 - 1.3.1. Pathophysiology at the Cortical Level
 - 1.3.2. Pathophysiology at the Medullary Level
 - 1.3.3. Pathophysiology at the Renoureteral Level
- 1.4. Imaging Studies in Renal Lithiasis
 - 1.4.1. Plain and Contrast Radiography
 - 1.4.2. Ultrasound, Magnetic Resonance Imaging, Computed Tomography
 - 1.4.3. Functional Tests: Renogram, Whitaker Test
- 1.5. Clinical Features, Diagnosis and Treatment of Uncomplicated Renal Colic
 - 1.5.1. Clinical Features of Uncomplicated Renal Colic
 - 1.5.2. Diagnosis
 - 1.5.3. Treatment
- 1.6. Treatment of Complicated Renal Colic
 - 1.6.1. Diagnosis
 - 1.6.2. Urinary Diversion
 - 1.6.3. Other Measures
- 1.7. Types of Double J Catheters
 - 1.7.1. Evolution Over Time of Double J Ureteral Catheters
 - 1.7.2. Indications, Complications and Adverse Effects
 - 1.7.3. New Designs of Ureteral Catheters. Biodegradable and Drug-Releasing
- 1.8. Renal Lithiasis, Infection and Sepsis
 - 1.8.1. Risk of Infection and Sepsis in Renal Lithiasis (Non-struvite)
 - 1.8.2. Diagnostic Techniques
 - 1.8.3. Recommendations for Management and Treatment



- 1.9. Patient Follow-up after Urinary Kidney Stone
 - 1.9.1. Epidemiology and Impact of Renal Colic
 - 1.9.2. Expulsive Treatment: Evidence and Opportunity Cost
 - 1.9.3. Patient Management in Special Situations
- 1.10. Clinical Guidelines Applied to Renal Colic
 - 1.10.1. European Guidelines
 - 1.10.2. American Guidelines
 - 1.10.3. Publications in PubMed

Module 2. Extracorporeal Shock Wave Lithotripsy. Transurethral Endoscopic Treatment of Kidney Stones

- 2.1. Extracorporeal Shock Wave Lithotripsy. Evolution Over Time
 - 2.1.1. Management of Lithiasis before Extracorporeal Shock Wave Lithotripsy
 - 2.1.2. Impact of Extracorporeal Shock Wave Lithotripsy
 - 2.1.3. Current Situation of Shock Wave Lithotripsy
- 2.2. Physical Principles and Types of Energy in Evolving Contaminated Urine Liquid
 - 2.2.1. Precursors of Extracorporeal Lithotripsy
 - 2.2.2. Electrohydraulic Generators
 - 2.2.3. Piezoelectric Generators
 - 2.2.4. Electromagnetic Generators
- 2.3. Indications and Contraindications of Extracorporeal Shock Wave Lithotripsy
 - 2.3.1. Contraindications of Extracorporeal Shock Wave Lithotripsy
 - 2.3.2. Characteristics of the Patient Candidate for Extracorporeal Shock Wave Lithotripsy
 - 2.3.3. Characteristics of the Lithiasis Candidate for Extracorporeal Shock Wave Lithotripsy
- 2.4. Results of Extracorporeal Shock Wave Lithotripsy
 - 2.4.1. Position of the Patient in Shock Wave Lithotripsy
 - 2.4.2. Release of Energy in Shock Wave Lithotripsy
 - 2.4.3. Tricks and Technical Details in Shock Wave Lithotripsy
- 2.5. Results of Extracorporeal Shock Wave Lithotripsy
 - 2.5.1. Results of Extracorporeal Shock Wave Lithotripsy in the Kidney
 - 2.5.2. Results of Extracorporeal Shock Wave Lithotripsy in the Ureter
 - 2.5.3. Results of Extracorporeal Shock Wave Lithotripsy in Children
- 2.6. Immediate Follow-up and Complications
 - 2.6.1. Assessment of Residual Lithiasis
 - 2.6.2. Analysis of Lithiasis: Prevention of the Formation of New Lithiasis
 - 2.6.3. Short- and Long-Term Complications of Extracorporeal Shock Wave Lithotripsy
- 2.7. Future of Extracorporeal Shock Wave Lithotripsy. Latest Developments
 - 2.7.1. Latest Developments in Extracorporeal Shock Wave Lithotripsy
 - 2.7.2. The Future of Extracorporeal Shock Wave Lithotripsy
 - 2.7.3. Key Aspects
- 2.8. Clinical Guidelines for Extracorporeal Lithotripsy
 - 2.8.1. Recommendations for the Performance of Extracorporeal Shock Wave Lithotripsy
 - 2.8.2. Extracorporeal Shock Wave Lithotripsy in the Treatment of Renal Lithiasis
 - 2.8.3. Extracorporeal Shock Wave Lithotripsy in the Treatment of Ureteral Lithiasis
- 2.9. Radiation Protection in Endourology
 - 2.9.1. Principles of Radiation Protection
 - 2.9.2. Radiation Exposure in Endourology in the Patient: Risks and Precautions
 - 2.9.3. Radiation Exposure in Endourology in the Urologist: Risks and Precautions
 - 2.9.4. Dose Reduction Strategies in Endourological Procedures
- 2.10. Urolithiasis and Hospital Management
 - 2.10.1. Hospital Management
 - 2.10.2. Indicators in a Lithotripsy Unit
 - 2.10.3. Key Aspects

Module 3. Endourology. Semirigid Ureteroscopy

- 3.1. Endourology. Evolution Over Time
 - 3.1.1. Blind Instrumentation of the Lower Urinary Tract
 - 3.1.1.1. Endoscopy
 - 3.1.2. Blind Instrumentation of the Upper Urinary Tract
 - 3.1.2.1. The First Surgical Endoscopes
 - 3.1.2.2. The Resectoscope
 - 3.1.2.3. The First Electrosurgical Units
 - 3.1.2.4. Incorporation of Fiber Optics
 - 3.1.2.5. Flexible Ureterorenoscopes
 - 3.1.2.6. The Percutaneous Approach
- 3.2. History of Endourology (II). Emergence of Endourology
 - 3.2.1. The Change to the Supine Position
 - 3.2.2. From the Beam Splitter to Digital Endoscopy
 - 3.2.3. Towards Miniaturization
 - 3.2.4. From Mechanical Energy to Laser Light
 - 3.2.5. New Endourological Frontiers and Shared Approaches
 - 3.2.6. Robotics and Computer Applications
- 3.3. Renal and Ureteral Anatomy Applied to Endourology
 - 3.3.1. Renal Anatomy
 - 3.3.1.1. Surgical Anatomy
 - 3.3.1.2. Renal Vascularization
 - 3.3.1.3. Urinary Collecting System: Papilla, Calyx and Renal Pelvis
 - 3.3.1.3.1. Classification of the Pyelocaliceal System
 - 3.3.2. Anatomical Relations of the Intrarenal Vasculature with the Renal Collecting System:
 - 3.3.2.1. Intrarenal Access through an Infundibulum
 - 3.3.2.2. Intrarenal Access through the Renal Pelvis
 - 3.3.2.3. Intrarenal Access through a Calicial Fornix
 - 3.3.2.4. Where to Perform the Puncture for Intrarenal Access
 - 3.3.3. Urethral Anatomy
 - 3.3.3.1. Surgical Anatomy
 - 3.3.3.2. Anatomical Relations
- 3.3.3.3. Points of Ureteral Restriction
- 3.3.3.4. Ureteral Segmentation and Nomenclature
- 3.3.3.5. Ureteral Vascularization and Innervation
- 3.3.3.6. Endoscopic Anatomy
- 3.4. Factors and Criteria for the Choice of Surgical Technique
 - 3.4.1. Emergency Treatment of Lithiasic Obstructive Uropathy
 - 3.4.1.1. Emergency Urinary Diversion
 - 3.4.1.2. Emergency Evolutive Contaminated Urine Fluid
 - 3.4.1.3. Emergency Ureteroscopy
 - 3.4.2. Surgical Aspects in the Treatment of Lithiasis: Renal Lithiasis
 - 3.4.2.1. Extracorporeal Shock Wave Lithotripsy
 - 3.4.2.2. Percutaneous Nephrolithotomy
 - 3.4.2.3. Retrograde Intrarenal Surgery
 - 3.4.2.4. Open Surgery, Laparoscopy
 - 3.4.3. Surgical Aspects in the Treatment of Lithiasis: Urethral Lithiasis
 - 3.4.3.1. Ureterorenoscopy
 - 3.4.3.2. Extracorporeal Shock Wave Lithotripsy
 - 3.4.3.3. Endoscopic Combined Intrarenal Surgery
 - 3.4.3.4. Open Surgery, Laparoscopy
- 3.5. Energy Sources in Endourology (I). Mechanical, Ultrasonic and Electrohydraulic
 - 3.5.1. Energy Sources in Endourology
 - 3.5.1.1. Ultrasonic Energy
 - 3.5.1.2. Mechanical Energy
 - 3.5.1.3. Electrohydraulic Energy
- 3.6. Energy Sources in Endourology (II): Laser
 - 3.6.1. Physical Principles of Lasers in Endourology
 - 3.6.2. Comparison of Different Laser Energy Sources: Holmium, Thulium and Others
 - 3.6.3. Safety Protocols and Laser Handling in Endourology
- 3.7. Bladder Lithotripsy
 - 3.7.1. Bladder Stone Disease
 - 3.7.2. Medical and Surgical Treatment. Indications
 - 3.7.3. Endourological Approach
 - 3.7.3.1. Surgical Access, Material and Fragmentation Modalities
 - 3.7.3.2. Limitations of the Technique



- 3.8. Semirigid Ureterorenoscopy
 - 3.8.1. Indications for Semirigid Ureterorenoscopy
 - 3.8.2. Pre-surgery Preparation
 - 3.8.3. Equipment
 - 3.8.4. Technique
 - 3.8.5. Complications
 - 3.8.6. Key Aspects
- 3.9. Small Caliber Ureterorenoscopy
 - 3.9.1. Relevance of Caliber in Ureterorenoscopy
 - 3.9.2. Advantages of Miniaturization
 - 3.9.3. Disadvantages of Miniaturization
- 3.10. Ureterorenoscopy in Pediatric Patients
 - 3.10.1. Application of Endoscopy in Pediatric Patients
 - 3.10.2. Causes of Obstructive Uropathy
 - 3.10.3. Current Surgical Techniques and Materials



You will reach your maximum potential in the field of Urology thanks to the most comprehensive educational and practical materials on the academic market, including interactive summaries"

04

Teaching Objectives

This TECH program will provide physicians with the necessary tools to specialize and apply advanced techniques in both Lithotripsy and Endourology for the treatment of Renal Lithiasis. The Postgraduate Diploma covers everything from minimally invasive procedures to comprehensive patient management, enabling these professionals to optimize therapeutic processes, personalize treatments and improve operational efficiency. This will ensure that graduates develop skills in technological innovation, lead research projects and integrate new technologies into clinical practice. In this way, they will contribute significantly to the advancement of renal health and expand their job opportunities in the field of Urology.



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You will perform advanced endourological procedures such as laser Lithotripsy, Flexible Ureteroscopy and Percutaneous Nephrolithotomy”



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

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C



Specific Objectives

Module 1. Clinical Presentation of Renal Lithiasis

- ♦ Analyze renal physiology and pathophysiology related to Lithiasis
- ♦ Master imaging techniques and functional tests in the diagnosis of Renal Colic
- ♦ Determine the criteria for the treatment of the different types of Renal Colic and its complications
- ♦ Identify and apply international clinical guidelines in the management of patients with Renal Lithiasis

Module 2. Extracorporeal Shock Wave Lithotripsy. Endoscopic treatment

- ♦ Define the physical principles and types of energy applied in Extracorporeal Shock Wave Lithotripsy
- ♦ Analyze the clinical results and complications derived from the use of Extracorporeal Shock Wave Lithotripsy in Renal Lithiasis
- ♦ Assess the recommendations of clinical guidelines in the follow-up of the condition
- ♦ Propose improvements and new technological applications in Extracorporeal Shock Wave Lithotripsy to optimize results

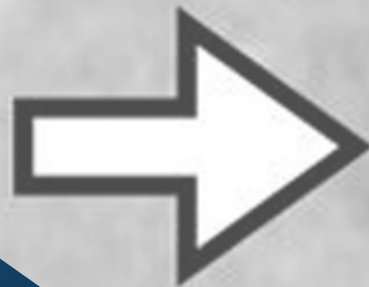
Module 3. Endourology. Semirigid Ureteroscopy

- ♦ Define the fundamentals of Endourology and its historical evolution in the context of the treatment of Renal Lithiasis
- ♦ Examine renal and ureteral surgical anatomy as a basis for performing safe endourological procedures
- ♦ Analyze the factors that determine the choice of surgical techniques and energy sources in semirigid ureteroscopy
- ♦ Evaluate the complications associated with ureteroscopy and propose management strategies

05

Career Opportunities

This revolutionary TECH university program is an unprecedented opportunity for all physicians who wish to update their skills in Lithotripsy and Endourology for Renal Lithiasis. By mastering advanced and minimally invasive techniques, graduates will improve patient care and optimize clinical outcomes. Through cutting-edge knowledge, professionals will expand their job opportunities in the field of Urology. In this way, this Postgraduate Diploma provides a qualification of excellence that will boost the career of specialists and contribute to the advancement of renal health.



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*Do you want to work as a Director of
Urology, Lithotripsy and Endourology?
With this university program you will
achieve it in only 540 hours”*

Graduate Profile

Graduates of this Postgraduate Diploma in Lithotripsy and Endourology in Renal Lithiasis will be physicians qualified to integrate advanced techniques in clinical settings, improving care and the allocation of resources in Urology. In addition, they will have the skills to design, implement and evaluate endourological procedures that optimize treatments, personalize care and monitor patients. In addition, they will be prepared to address ethical challenges and guarantee the security of clinical data in the use of technological instruments. These professionals will also be able to lead innovation and research projects in Urology to promote progress in this field.

You will ensure that the technological devices used in Lithotripsy and Endourology function optimally, prioritizing user safety.

- ♦ **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 in Lithotripsy and Endourology:** 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 healthcare 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 of Urology.



You will be able to use telemedicine to offer assistance to individuals with Urologic Diseases who live in remote areas, thereby guaranteeing equitable access to the health system"

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.

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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.

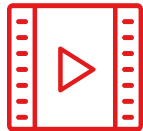
The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

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

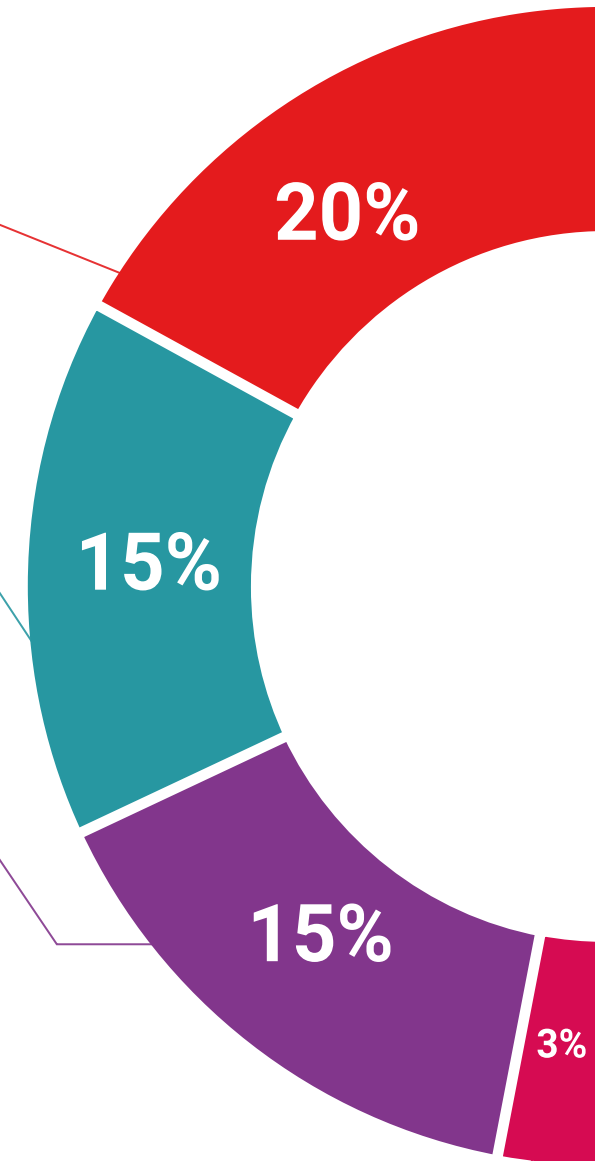
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

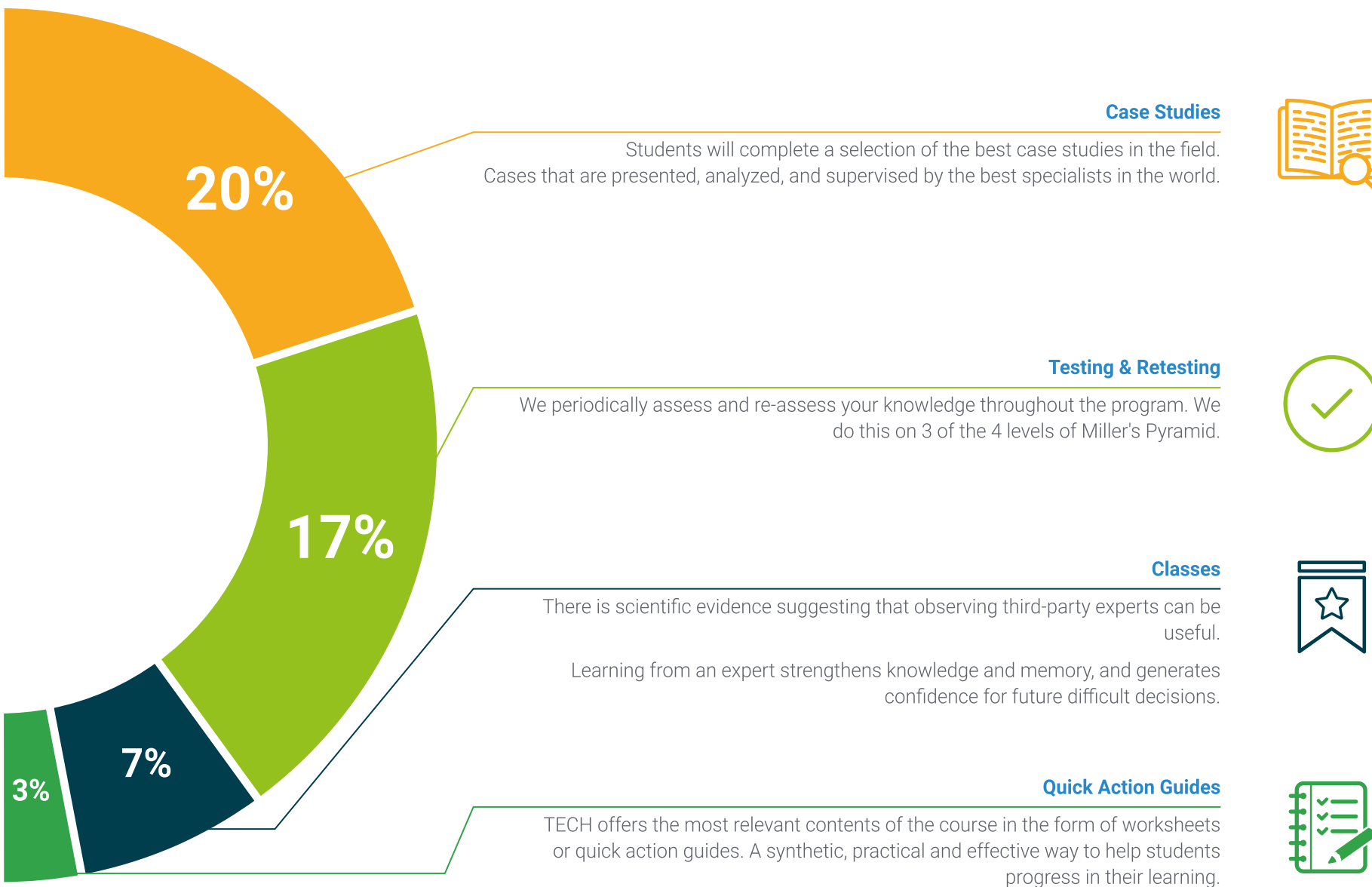
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

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

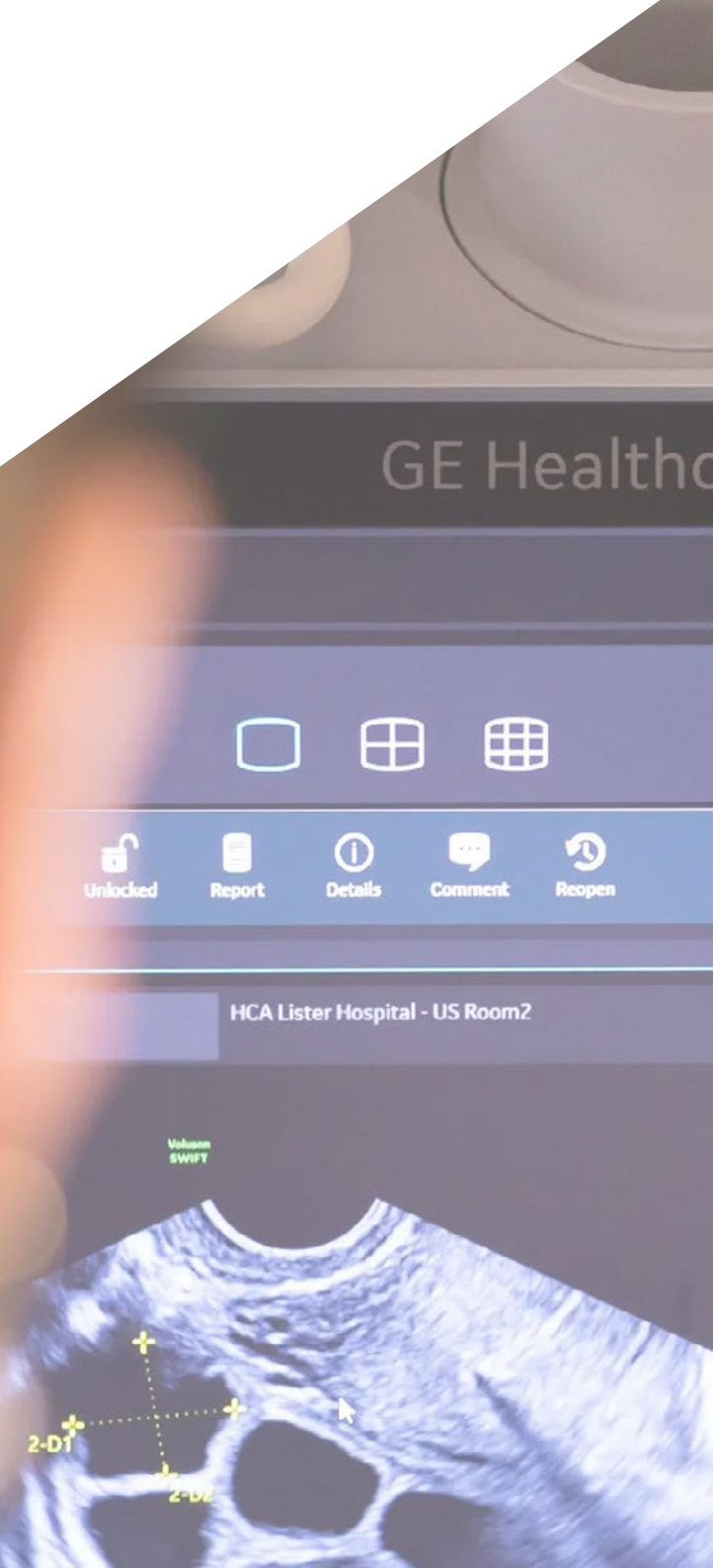




07

Teaching Staff

The essential principle of TECH is to offer the most practical, up-to-date and comprehensive university programs available in the field of education. For this reason, it carries out a detailed process to select its teaching staff. Thanks to this commitment, the Postgraduate Diploma features the participation of true experts in the field of Urology. These experts have worked in prestigious international healthcare institutions, using the most advanced minimally invasive techniques to improve the quality of life of numerous patients. In this way, graduates will have access to an intensive, high-level experience that will enhance their daily clinical practice.





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You will enjoy personalized guidance from the teaching team, made up of renowned experts in Lithotripsy and Endourology in 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. García Fadrique, Gonzalo

- ♦ Director of the Urologic Oncology Unit at Manises Hospital
- ♦ President of the Valencian Community Urology Association
- ♦ Expert in Laparoscopic Surgery
- ♦ Specialist Urology Physician at La Fe Hospital
- ♦ Clinical Researcher
- ♦ PhD in Health Sciences with specialization in Urology from the Catholic University of Valencia
- ♦ Master's Degree in Advanced Prostate Cancer from the University of Salamanca
- ♦ Bachelor's Degree in Medicine from the University of Valencia
- ♦ Certification as Fellow of the European Board of Urology
- ♦ Member of: European Association of Urology, Spanish Association of Urology and Association of Urology of the Valencian Community

Dr. Sanz del Pozo, Mónica

- ♦ Urologist at Miguel Servet University Hospital
- ♦ Physician at Quirón Zaragoza Clinic
- ♦ Pelvic Floor Specialist
- ♦ Lithiasis Residency at Puigvert Foundation
- ♦ Internship in Laparoscopy and Pediatric Surgery at the University Hospital Complex of Pontevedra
- ♦ PhD in Health Sciences from San Jorge University
- ♦ Master's Degree in Urologic Oncology from CEU Cardenal Herrera University
- ♦ Master's Degree in Clinical Medicine from Camilo José Cela University
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid

Dr. Sebastián González, Mariano

- ♦ Head of the Endourology, Lithiasis and Laser Section at the Italian Hospital of Buenos Aires
- ♦ Director of the Laser Area of the Urology Department at the Italian Hospital of Buenos Aires
- ♦ Specialist in Endourology and Lithiasis Diseases
- ♦ Staff Physician, Renal Transplant Section at the Italian Hospital of Buenos Aires
- ♦ Residency in Urology at the Italian Hospital of Buenos Aires
- ♦ PhD in Urology from the Argentine Society of Urology
- ♦ Degree in Medicine from the H.A. Barceló Foundation
- ♦ Member of: Argentine Society of Urology, Endourological Society, International Society of Urology, Ecuadorian Society of Urology, Venezuelan Society of Urology, Mexican Society of Urology and Urological Association of Central America and the Caribbean

Dr. Serrano Frango, Patricia

- ♦ Specialist in Urology at the Reina Sofia Hospital
- ♦ Specialist in Lithiasis and Endourology at the Miguel Servet University Hospital
- ♦ Evaluator for the Accreditation Committee of the Health Professions Commission of Aragon
- ♦ Clinical Researcher
- ♦ Doctor of Health Sciences from the University of Zaragoza
- ♦ Bachelor of Medicine and Surgery

Dr. Bahilo Mateu, Pilar

- ♦ Specialist in Urology. Expert in Lithotripsy
- ♦ Urologist at La Fe University and Polytechnic Hospital
- ♦ Urologist at the Quirónsalud Valencia Hospital
- ♦ Author and co-author of articles published in scientific journals

Dr. Soria González, Federico

- ♦ Head of the Experimental Surgery Service at the Ramón y Cajal University Hospital
- ♦ President of the Animal Experimentation Ethics Committee
- ♦ Specialist in Endourology and Minimally Invasive Surgery applied to Urology
- ♦ Veterinarian at the Jesús Usón Minimally Invasive Surgery Center
- ♦ Clinical Researcher in Endoscopy at the Jesús Usón Minimally Invasive Surgery Center
- ♦ PhD in Animal Health and Medicine from the University of Extremadura
- ♦ Bachelor's Degree in Veterinary Medicine from the University of Extremadura
- ♦ Member of: Spanish Association of Veterinary Specialists in Small Animals, Spanish Society of Veterinary Surgery and Official College of Veterinarians

Dr. Mora Christian, Jorge Alberto

- ♦ Specialist in Lithiasis, Endourology and Functional Pathology in Clinical Urology Bilbao
- ♦ Doctor in the Urology Department at Cruces University Hospital
- ♦ Urologist at Galdakao-Usánsolo Hospital
- ♦ Specialist in Advanced Renal Surgery
- ♦ Residency in Urology at Cruces University Hospital
- ♦ PhD in Medicine and Surgery from the Central University of Venezuela
- ♦ Master's Degree in Update in Urological Surgery from the Cardenal Herrera University
- ♦ University Expert in Lower Urinary Tract Surgery from the Cardenal Herrera University
- ♦ Certification as a Fellow of the European Board of Urology

Dr. Sureda Riera, Joan

- ♦ Urologist at the Hospital of Manacor
- ♦ Surgical SAP Instructor at the Clinical Hospital of Barcelona
- ♦ Specialist in Advanced Prostate Cancer Management
- ♦ Residency in Reconstructive Urology at the Urological Institute of London
- ♦ Master's Degree in Localized, Advanced and Metastatic Prostate Cancer from the University of Salamanca
- ♦ Master's Degree in Research Design and Analysis in Health Sciences from the Autonomous University of Barcelona
- ♦ Degree in Medicine and Surgery from the University of Barcelona
- ♦ Certification as a Fellow of the European Board of Urology
- ♦ Member of the Spanish Society of Radiation Oncology

Dr. Guimerá García, Jordi

- ♦ Medical Director of the Urology Clinic of Dr. Guimerá
- ♦ Specialist in Urology at Son Espases University Hospital
- ♦ Occupational Physician at Asepeyo
- ♦ Internship at the Miami Transplant Institute
- ♦ Urology residency at the Son Espases University Hospital
- ♦ PhD in Public Health and Prevalent Diseases from the University of the Balearic Islands
- ♦ Degree in Medicine from the Autonomous University of Madrid
- ♦ Certification as a Fellow of the European Board of Urology

Dr. Budía Alba, Alberto

- ♦ Head of the Lithotripsy and Endourology Unit at La Fe University and Polytechnic Hospital in 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. Campos Valverde, Daniel

- ♦ Physician in the Lithiasis and Endourology Unit of the Jiménez Díaz Foundation University Hospital
- ♦ Expert in Advances in the Diagnosis, Treatment and Monitoring of Urothelial Carcinoma
- ♦ Specialist in 3D Bioprinting
- ♦ Residency in Urology at the University Hospital of Ciudad Real
- ♦ Master's Degree in Urologic Oncology from TECH University
- ♦ Degree in Medicine from Universidad San Pablo CEU
- ♦ Certification as a Fellow of the European Board of Urology

Dr. Valdivia Uría, José Gabriel

- ♦ Director of the Urology Department at Lozano Blesa University Hospital
- ♦ Specialist in Animal, Applied and Experimental Surgery
- ♦ Scientific Researcher with more than 200 specialist publications
- ♦ President of the Spanish Association of Videosurgery
- ♦ Founder of the In Vivo Group of Biomedical Applications of the Nanoscience Institute of Aragon
- ♦ He has received more than 21 awards for his clinical contribution
- ♦ PhD in Medicine and Surgery from the University of Zaragoza
- ♦ Member of:
 - ♦ Spanish Urology Association
 - ♦ Spanish National Commission of the Specialty

Dr. Martínez Vela, Josué

- ♦ Urology Specialist at Dr. Balmis General University Hospital
- ♦ Expert in Resuscitation and Pain Therapy
- ♦ Specialist in Anesthesiology and Resuscitation at Dr. Balmis University General Hospital
- ♦ Clinical Researcher
- ♦ Degree in Medicine from the University of Castilla-La Mancha

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

Dr. Caballero Romeu, Juan Pablo

- ♦ Urologist at the University General Hospital of Alicante
- ♦ Urology Specialist at the General University Hospital of Elche
- ♦ Urology Specialist at Monumental Clinic
- ♦ Urology Specialist at Vithas Medimar Hospital
- ♦ Collaborating researcher in several R&D projects
- ♦ Author of several scientific publications
- ♦ Doctor of Medicine from the University Miguel Hernández
- ♦ Master's Degree CAP in Advanced Prostate Cancer at the AEU University of Salamanca
- ♦ Master's Degree in Comprehensive Medical and Surgical Management of Localized, Advanced and Metastatic Renal Cancer by the AEU University of Salamanca

Dr. González Lara, Diego Mauricio

- ♦ Urologist at Dr. Balmis General University Hospital
- ♦ Nephrology Physician at Toledo University Hospital Complex
- ♦ Urology Residency at Dr. Balmis General University Hospital of Alicante
- ♦ Degree in Medicine and Surgery from the Universidad Mayor de San Simón

Dr. Aranda Pérez, Javier

- ♦ Urology Specialist at the University Hospital of Cáceres
- ♦ Urologist at the University Hospital of Vinalopó
- ♦ Clinical Projects Manager at the Spanish Association of Urology
- ♦ Residency in Urology at the University Hospital of Cáceres
- ♦ PhD in Conservative Management of Urothelial Carcinoma from the University of Extremadura
- ♦ Master's Degree in Advanced Minimally Invasive Urological Surgery from the University of Extremadura
- ♦ Master's Degree in Localized, Advanced and Metastatic Prostate Cancer from the University of Salamanca
- ♦ Master's Degree in Multidisciplinary Approach to Prostate Cancer from the Complutense University of Madrid
- ♦ Master's Degree in Integration of Medical Knowledge and Clinical Problem Solving from UCAM
- ♦ Degree in Medicine from the Complutense University of Madrid
- ♦ Certification as a Fellow of the European Board of Urology

Dr. Canós Nebot, Ángela

- ♦ Urology Specialist at Dr. Balmis General University Hospital
- ♦ Clinical Researcher
- ♦ Residency in Urology at Dr. Balmis General University Hospital
- ♦ Degree in Medicine and Surgery from the University of Valencia



Dr. Rivero Cárdenes, Alberto

- ◆ Director of Endourology at the University Hospital of Burgos
- ◆ Urologist at San Roque Hospitals
- ◆ Expert in Urinary Lithiasis
- ◆ Physician at Recoletas Burgos Hospital
- ◆ Clinical Researcher
- ◆ Residency in Urology at the Río Hortega University Hospital
- ◆ Degree in Medicine and Surgery from the University of Santiago de Compostela
- ◆ Member of: Spanish Society of Urology, European Association of Urology and Endourological Society

Dr. Aranda Rodríguez, Marta

- ◆ Urologist at Dr. Balmis General University Hospital
- ◆ Specialist in Urology
- ◆ Clinical Researcher
- ◆ Residency in Urology at Dr. Balmis General University Hospital
- ◆ Degree in Medicine from the University of Castilla-La Mancha



Take this opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

08 Certificate

The Postgraduate Diploma in Lithotripsy and Endourology in Renal Lithiasis guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Postgraduate Diploma issued by TECH Global University.



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*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 Lithotripsy and Endourology in 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.

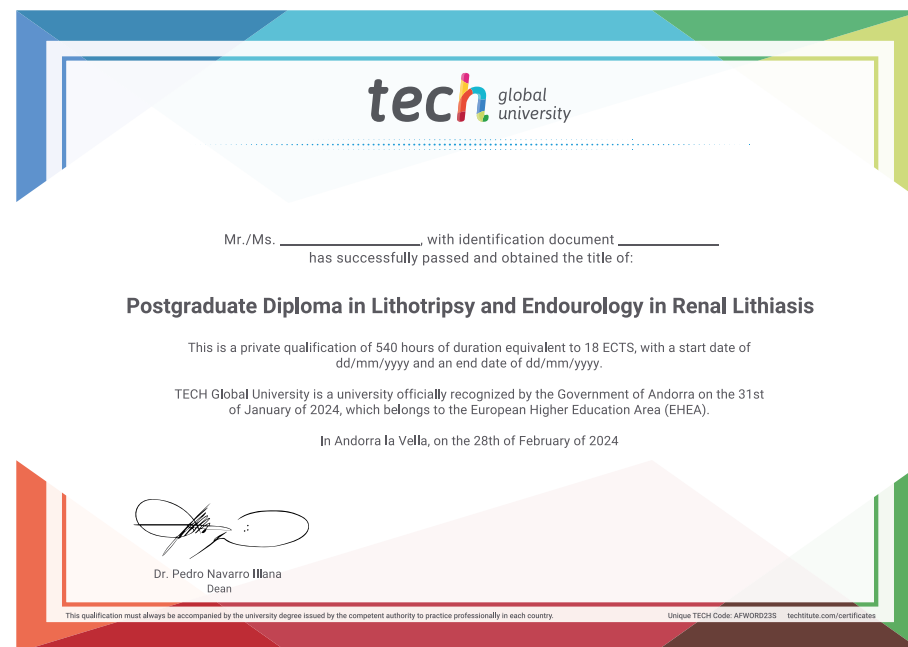
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Lithotripsy and Endourology in Renal Lithiasis**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





Postgraduate Diploma
Lithotripsy and Endourology
in Renal Lithiasis

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

Postgraduate Diploma

Lithotripsy and Endourology in Renal Lithiasis

