

# Postgraduate Certificate

## Basic Fundamentals of Metabolic Surgery



## Postgraduate Certificate Basic Fundamentals of Metabolic Surgery

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

Website: [www.techtitute.com/us/medicine/postgraduate-certificate/basic-fundamentals-metabolic-surgery](http://www.techtitute.com/us/medicine/postgraduate-certificate/basic-fundamentals-metabolic-surgery)

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# 01

# Introduction

With this high-level program, the student will learn the basic general aspects of metabolic surgery, as well as the role of bariatric surgery in other important aspects such as intestinal microbiota, NASH, hypogonadism or polycystic ovary syndrome. A unique opportunity to specialize in the Basic Fundamentals of Metabolic Surgery, from the hand of professional surgeons with extensive experience in the field.





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*A Postgraduate Certificate created to take the professional through the essential knowledge in each and every one of the areas that make up a high-level Bariatric Unit"*

We speak of metabolic surgery, to the set of surgical techniques that, by altering the intestinal transit, aims to correct or improve certain diseases such as diabetes mellitus, hypertension and dyslipidemia.

In 1995, an American surgeon named Pories, in his article: "Who would have thought?", an operation proves to be the most effective therapy for adult diabetes mellitus. He describes that the resolution of diabetes in morbidly obese people undergoing bariatric surgery occurs before the weight loss is significant.

From that moment on, there is an increase in medical and surgical research lines with the aim of clarifying the pathophysiological mechanisms involved in this process. Nowadays, bariatric surgery is also indicated in patients with poorly controlled diabetes mellitus and a BMI < 35 kg/m<sup>2</sup>.

In addition, this very complete educational itinerary is based on a 100% online teaching modality. In turn, for this program, students have a unique opportunity to acquire skills and knowledge from an internationally renowned expert. The International Guest Director of this Postgraduate Certificate provides the students with the most disruptive criteria on Metabolic Surgery through an intensive and rigorous Masterclass.



*Through an exclusive Masterclass, the International Guest Director of this program will update you on the main advances in Metabolic Surgery"*

This **Postgraduate Certificate in Basic Fundamentals of Metabolic Surgery** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The latest technology in online teaching software
- ♦ A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- ♦ Practical cases presented by practicing experts
- ♦ State-of-the-art interactive video systems
- ♦ Teaching supported by telepractice
- ♦ Continuous updating and recycling systems
- ♦ Autonomous learning: full compatibility with other occupations
- ♦ Practical exercises for self-assessment and learning verification
- ♦ Support groups and educational synergies: questions to the expert, debate and knowledge forums
- ♦ Communication with the teacher and individual reflection work
- ♦ Content that is accessible from any fixed or portable device with an Internet connection
- ♦ Supplementary documentation databases are permanently available, even after the program

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*The professors of this Postgraduate Certificate have been selected on the basis of two criteria: excellence in their medical practice in the field of the creation, promotion and maintenance of bariatric units, and their proven teaching skills. To offer you the high-quality program you need"*

Our teaching staff is composed of medical professionals, practicing specialists. That way we are sure to offer the educational update we intend to provide. A multidisciplinary cadre of physicians prepared and experienced in different environments, who will develop the theoretical knowledge efficiently, but, above all, will put at the service of the graduate the practical knowledge derived from their own experience: one of the differential qualities of this program.

This mastery of the subject is complemented by the effectiveness of the methodological design of this Postgraduate Certificate. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. This way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your education.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice: with the help of an innovative interactive video system, and learning from an expert, you will be able to acquire the knowledge as if you were actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

*This Postgraduate Certificate offers you access to the most innovative protocols in the organization of an increasingly advanced service.*

*With a methodological design based on proven teaching techniques, this Postgraduate Certificate will take you through different teaching approaches to allow you to learn in a dynamic and effective way.*



# 02 Objectives

This program aims to specialize highly qualified professionals for the workplace. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is focused on helping surgical professionals reach a much higher level of expertise and control, meeting all the requirements in the field of bariatric surgery. A goal that, in just a few months, can you will be able achieved with a high intensity and precision Postgraduate Certificate.







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*Our goal is yours: to provide you with the best online program and specialization course in Bariatric Surgery on the market. A highly qualified step, from the hands of the best professionals in this specialty"*



## General Objectives

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- ♦ Know the history, concept and indications of metabolic surgery
- ♦ Understand the Anatomic-Physiological basis of metabolic surgery and inflammatory mediators
- ♦ Study the role of gastrointestinal hormones in the resolution of Type 2 Diabetes Mellitus after bariatric surgery

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*Achieve your objectives by updating you in the latest techniques and medical advances in the area of bariatric surgery through a highly demanding educational and scientific Postgraduate Certificate”*





## Specific Objectives

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- Understand the importance of loop lengths in bariatric surgery
- Determine the influence of the microbiota on bariatric surgery
- Study the relationship between obesity and NASH
- Present the metabolic effects of manipulating intestinal bile acid availability after bariatric surgery
- Analyze the influence of bariatric surgery on hypogonadism and polycystic ovary syndrome
- Understand the regeneration changes in the pancreas and hyperinsulinism after bariatric surgery

03

# Course Management

Within the concept of total quality of our Postgraduate Certificate, we are proud to put at your disposal a teaching staff of the highest level, chosen for their proven experience in the field of Bariatric Surgery. A multidisciplinary team that will contribute with their vision and experience in this very complete Program. A unique opportunity to learn from the best.



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*A team of professionals with a solid professional background will be your professors in this Postgraduate Certificate: a unique opportunity to learn directly from the best in the field"*

## International Guest Director

Dr. Alec Beekley is an international reference in **Bariatric and Metabolic Surgery**. Throughout his career, this specialist has mastered the most disruptive tools and procedures to intervene patients with **pathologies such as Morbid Obesity, Diabetes**, among others. Thanks to his extensive experience and continuous updating, he has become the **Director of the surgical program**, focused on this area, at Thomas Jefferson University Hospital in the United States.

At the same time, the expert maintains close ties with the **el Trauma and Intensive Care Service** of the same health institution. Through this work, he has performed operations on people in serious or acute conditions and, in turn, supervises the progress of residents and interns under his care. In addition, he is an **instructor of Advanced Trauma Life Support**.

Likewise, his research career has been linked to clinical analysis projects. In particular, Dr. Beekley has dealt in depth with the management of the **Roux-en-Y gastric bypass technique** and its subsequent results such as weight loss and ulceration, as well as being a **scientific reviewer** for multiple specialized publications such as the journals **Surgery for Obesity and Related Diseases** and the **Journal of Trauma**.

On the other hand, this specialist has a long career in the **medical-war context**. His beginnings in the field of **military surgery** have been linked to combat and extreme situations such as the wars in Afghanistan and Iraq. Given his merits in this complex field, he has received various awards such as the **Bronze and Meritorious Service Medals** awarded by his country's army.

Dr. Beekley has also been an active member of **several scientific societies and committees**. In this way, through his intense healthcare management, he has become a true reference in world medicine.



## Dr. Beekley, Alec

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- ♦ Specialist in Bariatric, Metabolic and Trauma Surgery
- ♦ Director of the Metabolic and Bariatric Surgery Program at Thomas Jefferson University Hospital
- ♦ Advanced Life Support Instructor in the Trauma and Intensive Care Service at Thomas Jefferson University Hospital
- ♦ Director of the Combat Casualty Research Team at the 28th Combat Support Hospital in Baghdad, Iraq
- ♦ Staff Surgeon General, 102nd Forward Surgical Team, Kandahar, Afghanistan
- ♦ Surgeon General, Madigan Army Medical Center, Tacoma
- ♦ Surgeon General at Blanchfield Army Community Hospital in Kentucky
- ♦ Medical Degree from Case Western Reserve University

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*Thanks to TECH you will be able to learn with the best professionals in the world"*

## Management



### Dr. Priego Jiménez, Pablo

- Surgeon of the Laparoscopic Surgery Unit at Viamed Virgen de la Paloma Hospital. Madrid
- Clinical Head of General Surgery of the Bariatric and Metabolic Surgery Unit at the Viamed Virgen de la Paloma University Hospital. Madrid
- Specialist in Surgery in the General Surgery Service, Esophagogastric and Bariatric Surgery Unit at the Ramón y Cajal University Hospital
- Specialist in Surgery in the General Surgery Service, Esophagogastric, Hepatobiliopancreatic and Thoracic Surgery Unit at the General University Hospital of Castellón
- Degree in Medicine and Surgery from the Complutense University of Madrid
- Master's Degree in Advanced Laparoscopic Surgery from the University of Alcalá
- Member of: Spanish Association of Surgeons, Section of Esophagogastric Surgery and the Section of Minimally Invasive Surgery and Technological Innovation of the ACS, Spanish Society of Obesity Surgery (SECO), International Federation for the Surgery of Obesity (IFSO), European Association of Endoscopic Surgery (EAES), Paraguayan Society of Endoscopic Surgery, Madrid Association of Surgeons





### **Dr. Ruiz-Tovar Polo, Jaime**

- ♦ Specialist in General and Digestive System Surgery
- ♦ Responsible for Neurostimulation at Garcilaso Clinic
- ♦ Bariatric Surgeon in the Centre for Excellence for the Study and Treatment of Obesity in the Bariatric Surgery Unit. Valladolid
- ♦ Specialist Physician in the Bariatric Surgery Unit at the Rey Juan Carlos University Hospital
- ♦ Coordinator of the Bariatric Surgery Unit at Elche University General Hospital
- ♦ Doctorate in Medicine from the Autonomous University Madrid
- ♦ Degree in Medicine from the Autonomous University Madrid
- ♦ Master's Degree in Advanced Laparoscopic Surgery from the University of Alcalá

## **Professors**

### **Dr. Guijarro Moreno, Carlos**

- ♦ Medical Specialist in General and Digestive System Surgery
- ♦ Physician at the University Hospital of Henares
- ♦ General and Digestive System Surgeon at the Infanta Cristina University Hospital
- ♦ Physician at the Medina del Campo Hospital
- ♦ Master's Degree in General and Digestive System Surgery
- ♦ Degree in Medicine from the Autonomous University Madrid

### **Dr. Lorenzo González, Óscar**

- ♦ Researcher at the Jiménez Díaz Foundation
- ♦ Researcher at Marqués de Valdecilla Hospital
- ♦ Participation in dozens of R&D projects
- ♦ Author and co-author of numerous scientific articles
- ♦ Professor in university studies of Medicine and Nursing
- ♦ Doctor in Biochemistry from the Autonomous University of Madrid
- ♦ Degree in Biology from the Complutense University of Madrid

**Dr. Wolfgang Vorwald, Peter**

- ♦ Head of the Esophagogastric and Bariatric Surgery Unit at the Jimenez Diaz Foundation University Hospital
- ♦ Head of the Esophagogastric and Bariatric Surgery Unit at the Villalba General University Hospital
- ♦ Coordinator of Esophagogastric Surgery Working Group in the Spanish Multimodal Rehabilitation Group (GERM)
- ♦ Specialist Physician at the University Hospital "Klinikum Rechts der Isar". Munich
- ♦ Specialist Physician at the Alcorcón Foundation niversity Hospital
- ♦ Associate Professor in Health Sciences at the Autonomous University of Madrid
- ♦ Associate Professor at the Technical University of Munich
- ♦ Member of the Esophagogastric Surgery Section of the Spanish Association of Surgeons
- ♦ Ph.D. in Medicine from the Complutense University of Madrid
- ♦ Degree in Medicine from the Autonomous University Madrid

**Dr. Barragán Serrano, Cristina**

- ♦ Assistant from the Esophagogastric and Obesity Unit at the Jiménez Díaz Foundation
- ♦ Fellowship at the University Hospital Jiménez Díaz Foundation
- ♦ Doctorate in Medicine from the University of Alcalá
- ♦ Degree in Medicine from the University of Alcalá
- ♦ First cycle at the University of the Basque Country
- ♦ Second cycle at the Guadalajara University Hospital of the University of Alcalá
- ♦ Collaborator in practical classes at the Autonomous University of Madrid
- ♦ Training lecture on mechanical sutures at La Paz University Hospital
- ♦ AEC Speaker at the Course on Minimally Invasive Surgery in the MIS-ITEC section. Virtual AEC Classroom. Teaching in times of crisis

**Dr. Posada González, María**

- ♦ Medical Specialist in General, Esophagogastric and Digestive System Surgery
- ♦ Physician at the Esophagogastric and Bariatric Surgery Unit at the Jimenez Díaz Foundation University Hospital
- ♦ Medical Specialist in the Department of General Surgery and Digestive System at the University Hospital of Basurto
- ♦ Physician in the Esophagogastric Surgery Unit at the Keck Medical Center of the University of Southern California. United States
- ♦ Specialist Physician at La Princesa University Hospital
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Member of: Spanish Association of Surgeons and Spanish Society of Obesity Surgery

**Dr. Mayo Ossorio, Maria De los Angeles**

- ♦ Coordinator in the Bariatric Surgery and Esophagogastric Unit of the Puerta del Mar University Hospital
- ♦ Specialist in the Department of General Surgery and Digestive System at the Puerta del Mar University Hospital
- ♦ Assistant of the surgical team of General Surgery at the Social Institute María de Cádiz
- ♦ Associate Professor of Surgery at the Faculty of Medicine in the University of Cádiz
- ♦ Ph.D. in Medicine and Surgery from Cádiz University with the qualification of outstanding Cum Laude
- ♦ Degree in Medicine and Surgery from the University of Cádiz
- ♦ Master's Degree in Obesity Surgery from the Francisco de Vitoria University
- ♦ University Expert in Esophagogastric and Bariatric Surgery by the CEU Cardenal Herrera University



**Dr. García Gómez de las Heras, Soledad**

- ◆ Specialist in Health Sciences, Human Histology, Pathological Anatomy, Human Anatomy and Cell Biology
- ◆ Professor of Human Histology and Pathological Anatomy at the Faculty of Health Sciences of the Rey Juan Carlos University
- ◆ Professor of Human Anatomy at the Faculty of Health Sciences of the Rey Juan Carlos University
- ◆ Professor of the subject of Human Histology in the Degree of Medicine
- ◆ Professor of Cell Biology and Human Histology in the Nursing, Physiotherapy and Dentistry Degrees
- ◆ Professor of Human Anatomy in Nursing, Physiotherapy and Dentistry Degrees
- ◆ Doctor Cum Laude in Medicine and Surgery from the Faculty of Medicine of the Complutense University of Madrid
- ◆ Degree in Medicine and Surgery from the Faculty of Medicine of the Complutense University of Madrid

# 04

# Structure and Content

The contents of this program have been developed by the different experts on this course, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field. A complete and well-structured program that will take you to the highest standards of quality and success.





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*A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life"*

## Module 1. Fundamentals of Metabolic Surgery

- 1.1. Metabolic Syndrome and Mediators of Inflammation
  - 1.1.1. Bariatric Surgery vs. Metabolic Surgery. Anatomophysiological Basis of Metabolic Surgery
  - 1.1.2. Control Mechanisms for Various Obesity Comorbidities
  - 1.1.3. Future Perspectives of Metabolic Surgery
- 1.2. Pathophysiology of Diabetes Medical and Dietary Treatment of Diabetes
  - 1.2.1. Insulin and Alteration in its Cellular Response.
  - 1.2.2. Hyperglycemia, Hyperlipidemia and Tissue Damage
  - 1.2.3. Energetic Metabolism Alterations
  - 1.2.4. Associated Phenomena: Inflammation, Apoptosis, Steatosis and Cellular Fibrosis
- 1.3. Role of Gastrointestinal Hormones in the Resolution of Type 2 Diabetes Mellitus after Bariatric Surgery
  - 1.3.1. Introduction
  - 1.3.2. Gastrointestinal Hormones Involved in the Metabolism of Glucose
    - 1.3.2.1. Incretinic Effect
  - 1.3.3. Pathophysiology and Etiopathogenesis of Type 2 Diabetes in Obese Patients
    - 1.3.3.1. Role of Gastrointestinal Hormones in Resistance to Insulin
  - 1.3.4. Contribution of Bariatric Surgery to the Resolution of Type 2 Diabetes
    - 1.3.4.1. Weight Loss
    - 1.3.4.2. Modification of Nutrients and Microbiota
    - 1.3.4.3. Effect of Gastrointestinal Hormones: Proximal and Distal Gut Theory
  - 1.3.5. Evidence of Bariatric Surgery in Type 2 Diabetes
    - 1.3.5.1. Short and Long Term Impact of Bariatric Surgery in Regulating Glucose Metabolism
    - 1.3.5.2. Surgical Treatment vs. Doctor
    - 1.3.5.3. BPGL vs. GV
- 1.4. Concept of Metabolic Surgery, Concept and Scientific Evidence
  - 1.4.1. Introduction: History of Metabolic Surgery
  - 1.4.2. Concepts of Metabolic Surgery
    - 1.4.2.1. General Concepts: Obesity Surgery and Metabolic Complications
    - 1.4.2.2. Specific Concept: Diabetes Surgery



- 1.4.3. Indications of Metabolic Surgery
  - 1.4.3.1. Indications in Diabetic Patients with Morbid Obesity
  - 1.4.3.2. Indications in Type 2 Diabetic Patients with BMI 35-40
  - 1.4.3.3. Indications in Diabetic Patients with BMI < 30
- 1.4.4. Surgical Techniques
  - 1.4.4.1. Traditional Techniques: (Gastric Banding, Vertical Gastrectomy, Gastric Bypass and Biliopancreatic Bypass)
  - 1.4.4.2. New Techniques: BAGUA, SADI-S, Gastroileal Bypass of One Anastomosis, and Others
- 1.4.5. Current Scientific Evidence on Metabolic Surgery
- 1.4.4. Ethical and Deontological Aspects of Metabolic Surgery
- 1.5. Importance of Loop Lengths in Bariatric Surgery
  - 1.5.1. Determining Cutting Points
  - 1.5.2. Patient Monitoring
  - 1.5.3. Comorbidity Remission
- 1.6. Influence of the Microbiota in Bariatric Surgery
  - 1.6.1. Microbiome: Basic Concepts
  - 1.6.2. Microbiome and Obesity
  - 1.6.3. Changes in Microbiome after Bariatric Surgery
- 1.7. Obesity and NASH. Role of the Liver as Metabolism Regulator
  - 1.7.1. Role of the Liver as Metabolism Regulator
  - 1.7.2. Obesity and Non-Alcoholic Fatty Liver Disease
  - 1.7.3. Bariatric Surgery and Non-Alcoholic Fatty Liver Disease
- 1.8. Influence of Bile Acids
  - 1.8.1. Bile Acid Synthesis and Hepatic Circulation
  - 1.8.2. Regulation of Dietary Fat Availability by Bile Acids
  - 1.8.3. Main Bile Acid Receptors: TGR5 - FXR
  - 1.8.4. Regulation of Metabolism by the Bile Acids
  - 1.8.5. Metabolic Effects of Manipulating Intestinal Bile Acid Availability after Bariatric Surgery
- 1.9. Influence of Bariatric Surgery on Hypogonadism and Polycystic Ovary Syndrome (POS)
  - 1.9.1. Prevalence of Male Hypogonadism and POS in Bariatric Surgery Candidates
  - 1.9.2. Effects of Bariatric Surgery in the Hormonal Concentrations of Patients with Male Hypogonadism and Semen Quality
  - 1.9.3. Effects of Bariatric Surgery on the Resolution of POS and Female Fertility
- 1.10. Timing of Metabolic Surgery and Its Effect on the Pancreas
  - 1.10.1. Time as a Predictor of Diabetes Resolution following Metabolic Surgery
  - 1.10.2. Pancreas Remodeling Capacity of the Pancreas in Human vs. Animal Models
  - 1.10.3. Regeneration of the Pancreas and Hyperinsulinism after Bariatric Surgery



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

# 05 Methodology

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

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





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

## At TECH we use the Case Method

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

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



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

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

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

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



## Relearning Methodology

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

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

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



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

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

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

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

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



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



#### Study Material

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

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



#### Surgical Techniques and Procedures on Video

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



#### Interactive Summaries

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

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



#### Additional Reading

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





#### Expert-Led Case Studies and Case Analysis

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



#### Testing & Retesting

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



#### Classes

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



#### Quick Action Guides

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



# 06 Certificate

The Postgraduate Certificate in Basic Fundamentals of Metabolic Surgery guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.





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

This **Postgraduate Certificate in Basic Fundamentals of Metabolic Surgery** contains the most complete and up-to-date scientific on the market.

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

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

Title: **Postgraduate Certificate in Basic Fundamentals of Metabolic Surgery**

Official N° of Hours: **150 h.**



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

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

**tech** technological  
university

personalized service innovation

knowledge present of Metabolic Surgery

online training

development language

virtual classroom

## Postgraduate Certificate

Basic Fundamentals  
of Metabolic Surgery

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