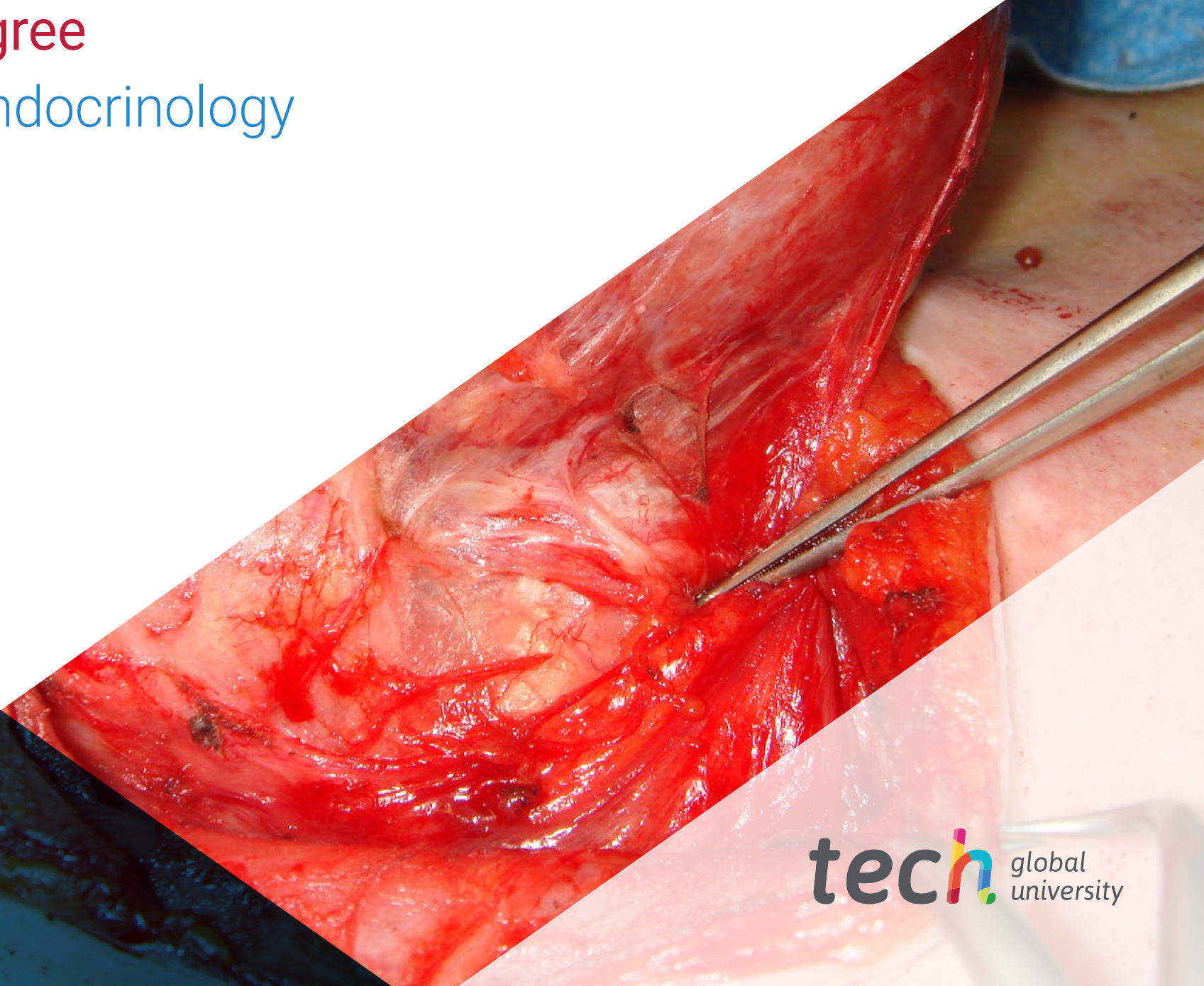


# Master's Degree

## Update on Endocrinology





## Master's Degree Update on Endocrinology

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/us/medicine/master-degree/master-update-endocrinology](http://www.techtitute.com/us/medicine/master-degree/master-update-endocrinology)

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# 01

# Introduction

Despite being a relatively recent field of medicine, Endocrinology and Nutrition today encompasses one of the broadest fields in healthcare. As one of the fields of science that fights aging, obesity or diabetes, there are many advances in this field. This means that the specialist must update their knowledge periodically, expanding their knowledge in areas such as autoimmune pathologies, adrenal gland disorders or endocrinological emergencies of various kinds. TECH has compiled in this complete university program the most current scientific developments and postulates, elaborated by a teaching team of the highest academic level.







“

*Get up to date with the most recent advances in diabetes, including special considerations and studies on insulin resistance, metabolic and molecular pathogenesis”*

Diabetes and obesity are two of the main diseases that affect a significant part of the population, both in developed and developing countries. Endocrinology therefore becomes a priority medical specialty for global organizations worldwide.

In the field of clinical practice management and in the framework of daily activity, the specialist must have the best possible information at their disposal in order to speed up and maximize their decision-making capacity. Deciding involves weighing different possible alternatives and choosing those that best meet the objectives set. Therefore, prioritization and allocation of available resources should be based on the most advanced scientific information.

In this task, pathophysiological knowledge of diseases that sometimes require a high degree of specialization comes into play. This requires frequent updating and rigorous knowledge on the part of the specialist, so TECH has assembled a teaching team with extensive experience in the clinical field of Endocrinology to provide this program with the best possible knowledge.

The specialist will give an up to date and detailed tour of the main areas of endocrinology. In this way, you will be up to date on the most important issues for your work, incorporating recent advances in insulin therapy, lipid lowering drugs and other new approaches into your daily practice.

All this in a 100% online format in which there are no pre-set classes or schedules, so it is the specialist themselves who decides the study times. A decisive advantage to be able to combine professional updating with the most demanding daily tasks.

This **Master's Degree in Update on Endocrinology** contains the most complete and up to date educational program on the market. The most important features include:

- ◆ The development of case studies presented by experts in Endocrinology
- ◆ The graphic, schematic, and eminently practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where self assessment can be used to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions for experts and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*You will have at your disposal a large amount of support material, including real clinical cases, complementary readings and video summaries prepared by the teachers themselves"*

“

*Access a modern compendium on the Etiology, Epidemiology and Pathophysiology of the main conditions of the endocrine system"*

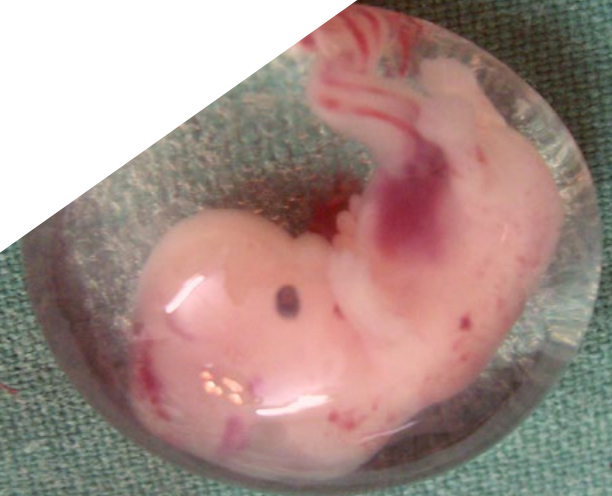
The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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 training programmed to train in 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 academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Incorporate the most modern scientific postulates into your daily practice and maintain a high level of professional practice.*

*Rely on a world class faculty, assembled by TECH for both clinical and academic merit.*



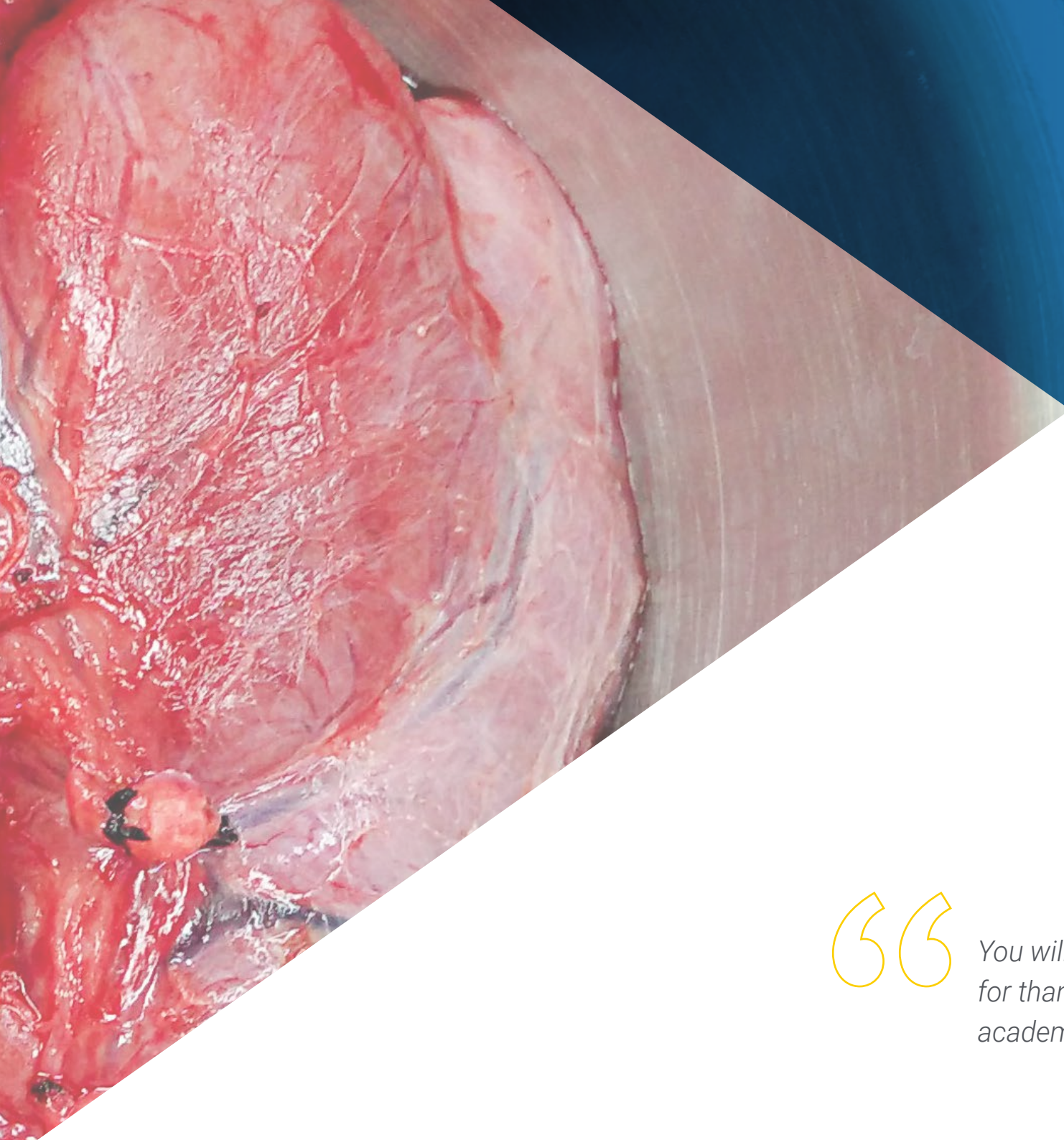


# 02 Objectives

Given the medical relevance of Endocrinology, TECH has made every effort to ensure that this program provides a deep and accurate update on the most important issues for all specialists in this area. Thus, both the contents and the exercises and supplementary material are focused on achieving a comprehensive, effective and deep update, with which the specialist will modernize all their knowledge even before finishing their own degree.







“

*You will get the update you are looking for thanks to the thoroughness and academic guarantee offered by TECH”*



## General Objective

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- ◆ Accurately interpret currently available clinical information and associate it effectively in clinical practice

“

*You will have the support of a technical team that will be ready to solve any doubts or setbacks that may arise”*







## Specific Objectives

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### Module 1. Hypothalamus, Pituitary Gland and Autoimmune Pathology

- ◆ Update knowledge in biology, biochemistry and physiopathology of the endocrine system
- ◆ Delve into the main clinical entities affecting the hypothalamic-pituitary axis
- ◆ Delve into the autoimmune polyglandular syndromes

### Module 2. Thyroid, Parathyroid Gland and MEN

- ◆ Update knowledge of the main pathologies affecting the thyroid gland and to know the main diagnostic algorithms in these diseases
- ◆ Deepen in the laboratory findings that can lead to the diagnosis of the main parathyroid diseases
- ◆ Interpret the clinical findings that should make us suspect the existence of multiple endocrine neoplasia

### Module 3. Adrenal Gland Disorders

- ◆ Provide and expand clinical and pathophysiological data on the main endocrine pathologies affecting the adrenal glands
- ◆ Incorporate the use of the main diagnostic algorithms in making the most clinically prevalent clinical judgments

### Module 4. Obesity, Metabolic Syndrome and Dyslipidemia

- ◆ Update knowledge on obesity and its pharmacological treatments
- ◆ Delve into the approach and classification of the metabolic syndrome, as well as the profound impact it is having on the healthcare landscape
- ◆ Discuss and interpret the findings in lipid profiling and the development of therapeutic knowledge that has been generated in recent years in this field

### Module 5. Diabetes Mellitus

- ◆ Provide and expand knowledge on the pathogenesis and pathophysiology of diabetes mellitus
- ◆ Provide the basis of knowledge of the main chronic complications (micro and macrovascular) of this pathology
- ◆ Discuss the different therapeutic options for this endocrinological disease

### Module 6. Endocrinological Emergencies

- ◆ Know the most frequent causes that occur in the most common endocrine and metabolic emergencies, developing the activities to be carried out with the patient in the situations described in the contents
- ◆ Prioritize the actions to be carried out according to their importance for the patient's life
- ◆ Identify the differential diagnosis in relation to the metabolic and electrolyte alterations of these pathologies
- ◆ Recognize the importance of the evaluation of blood analysis and metabolic values in the detection of related problems

**Module 7. Disorders of Intermediate Metabolism and Bone Metabolism**

- ◆ Update knowledge in this heterogeneous field of pathologies, especially in the clinical and diagnostic concept
- ◆ Provide and expand knowledge about the skeletal system and related diseases in this area

**Module 8. Clinical Nutrition and Dietetics**

- ◆ Update the knowledge in the field of dietetics and its connection with the most prevalent diseases and in which its knowledge can be transcendental to achieve a favorable clinical evolution
- ◆ Know the different types of nutrition, their indications, their singularities and their mechanics of administration







### **Module 9. Women and Endocrinology**

- ◆ Deepen the understanding of female sex hormones throughout a woman's life
- ◆ Update on the singularities of endocrinological diseases in pregnant women
- ◆ Review the most important clinical knowledge in human reproduction

### **Module 10. Miscellaneous**

- ◆ Delve the approach to the study of hypogonadism and the main algorithms involved in its study
- ◆ Update on the singularities of endocrinological diseases in the elderly patient
- ◆ Review the most important clinical knowledge in the detection of arterial hypertension of endocrinologic origin
- ◆ Deepen the role of the endocrine system in the nervous system and cardiovascular system
- ◆ Deepen the knowledge of gastrointestinal hormones in the control of food intake

# 03 Skills

In order to act quickly and accurately in the field of Endocrinology, it is necessary to accurately interpret both theoretical and practical knowledge of the corresponding diagnostic techniques, dietary measures and therapeutic plans. This degree will strengthen the specialist's knowledge with a solid clinical and scientific update, allowing them to maintain a high level of competencies and a professional practice adapted to the most avant garde discoveries and advances in this health branch.







“

*Thanks to this program's combination of cutting edge theory and practice, you will maintain a high level of competencies, which will be appropriate for your professional practice"*



## General Skills

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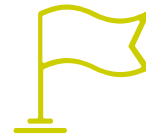
- ◆ Possess and understand knowledge that provides an opportunity in the context of Endocrinology
- ◆ Apply acquired knowledge and problem-solving skills in clinical settings in a comprehensive and solvent manner
- ◆ Integrate knowledge and face complex clinical situations, including pathophysiological reflections related to the application of knowledge
- ◆ Communicate your findings to both specialized and non-specialized audiences in a clear and unambiguous manner
- ◆ Possess the learning skills that will enable them to continue studying in a self directed and/or autonomous manner



*You will achieve greater agility in decision making and treatment thanks to the new tools that you will incorporate in your daily work"*







## Specific Skills

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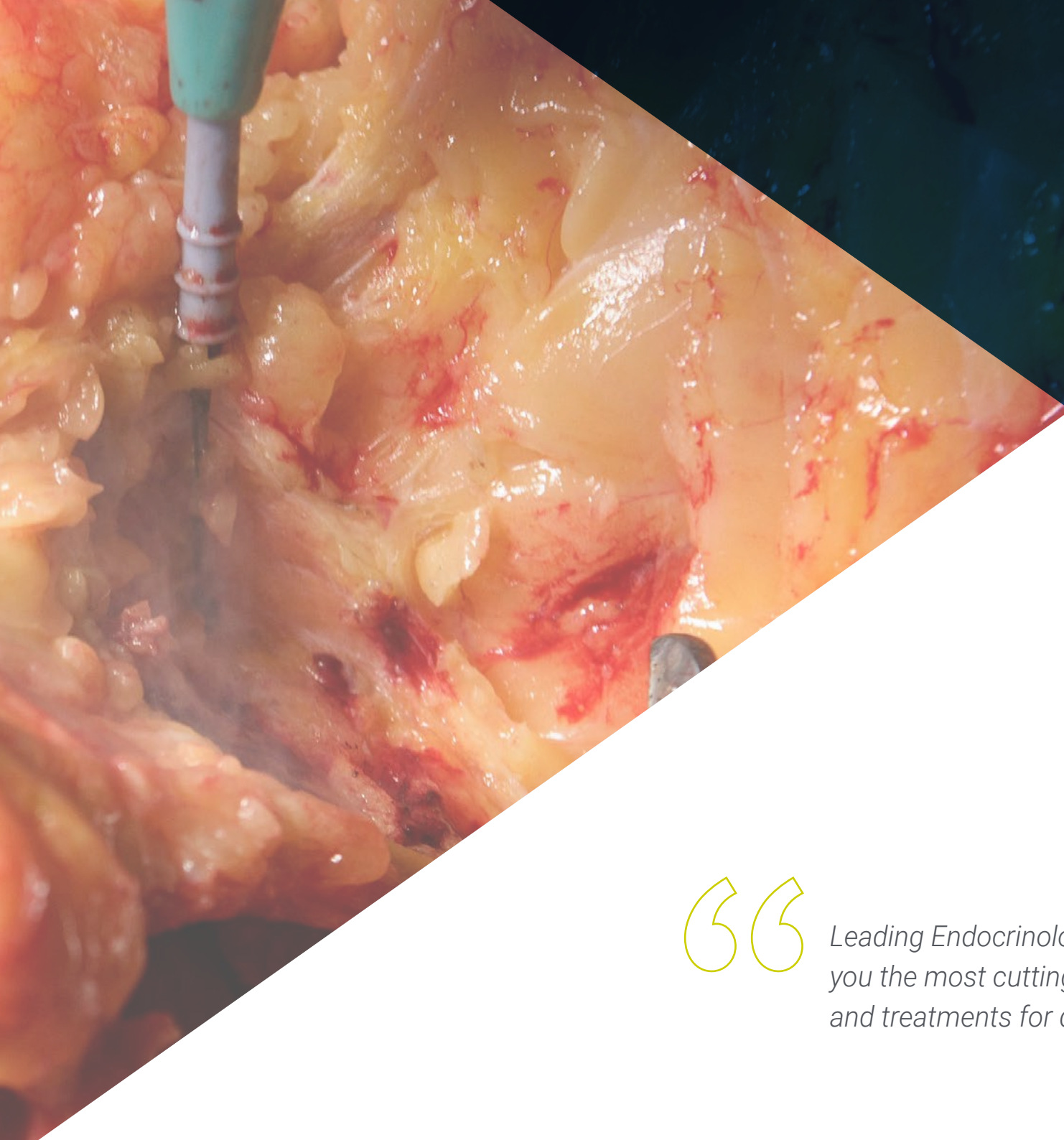
- ◆ Create a global and updated vision of the topics addressed, acquiring a useful and deep knowledge
- ◆ Generate interest in expanding knowledge in this area and discover its application to daily clinical practice
- ◆ Understand the process of knowledge discovery that includes the reading of specific information, contextualization and transversality with other medical branches
- ◆ Understand how to evaluate the performance of both supervised and unsupervised learning algorithms
- ◆ Know the most relevant diagnostic techniques and therapeutic aspects in this field of medicine

# 04

# Course Management

To shape the contents of this program TECH has brought together experts in the field of Endocrinology, taking into account their academic and clinical experience in various specialty areas of this health branch. This ensures that all teaching material has a multidisciplinary approach that meets the highest demands, combining the latest scientific theses with the most successful clinical practice.





“

*Leading Endocrinology professionals will share with you the most cutting edge procedures, techniques and treatments for different endocrine pathologies”*



## International Guest Director

Awarded on multiple occasions for her contribution to the field of Medicine, Dr. Susan Samson is a prestigious physician highly specialized in Endocrinology, Diabetes and Metabolism. In fact, she has devoted most of her professional career to optimizing the overall well-being of patients with endocrine disorders, ranging from Diabetes Mellitus to Hyperthyroidism.

Therefore, she has carried out her duties in health institutions of international reference such as the Mayo Clinic Hospital in the United States. Among her main achievements, she has developed innovative evaluation methodologies based on the latest scientific evidence. This has enabled healthcare professionals to design personalized and more effective treatments, taking into account the specific needs of each user. At the same time, it has implemented various monitoring programs based on emerging technologies such as Telemedicine and even Artificial Intelligence. Thanks to this, it has enabled real-time monitoring of the clinical status of numerous individuals with chronic diseases to improve their quality of life.

On the other hand, she has balanced these tasks with her role as President of the American Association of Clinical Endocrinology. In this way, she has contributed significantly to the creation of care protocols for people with different conditions. She has also collaborated with regulatory agencies to develop health policies to address the optimization of care for patients with long-term conditions.

In her commitment to clinical excellence, she has led several scientific research projects in areas ranging from addressing Pituitary Pathologies or Acromegaly to Cushing's Disease. Likewise, these findings have driven advances to maximize the quality of care. In this sense, her work has been rewarded in the form of awards, such as the "Rising Star Award" given by the Baylor College of Medicine for her outstanding leadership.





## Dr. Samson, Susan

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- ♦ President of the Department of Endocrinology at Mayo Clinic Hospital in Florida, United States
- ♦ President of the American Association of Clinical Endocrinology
- ♦ Director of the Baylor St. Luke's Pituitary Center in Texas
- ♦ Internship in Endocrinology, Diabetes and Metabolism at Baylor College of Medicine
- ♦ M.D. from Queen's University
- ♦ Doctor of Philosophy with specialization in Molecular Biology, University of Calgary.
- ♦ Member of the Royal College of Physicians and Surgeons of Canada

“

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

## Management



### Dr. Gargantilla Madera, Pedro

- ◆ Chief of Internal Medicine Service of El Escorial University Hospital
- ◆ Professor of the Francisco de Vitoria University
- ◆ Science communicator and regular contributor to various media (RNE, Abc digital, Huffington post, Cinco Noticias)
- ◆ Member of the Association of Medical Writers and Artists (ASEMEYA)
- ◆ Master's Degree in Clinical Unit Management

### Dr. Albi Rodríguez, Salomé

- ◆ Assistant, Pediatrics Department, 12 de Octubre University Hospital, Madrid
- ◆ University Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ Doctor in Medicine and Surgery at the Autonomous University of Madrid
- ◆ Specialty of Pediatrics and Specific Areas

### Dr. Barrio Martínez, Nina Marina

- ◆ Gynecology and Obstetrics Service Fundación Alcorcón University Hospital

### Dr. Belda Bilbao, Luis

- ◆ Specialist in Internal Medicine El Escorial Hospital San Lorenzo de El Escorial
- ◆ Specialty in Internal Medicine performed in Great Britain
- ◆ Master in Cardiovascular Diseases at Barcelona University
- ◆ University Expert in HIV Infection and Associated Diseases, at the Miguel Hernández University of Elche

## Professors

### Dr. Calvo Urrutia, Marta

- ◆ Assistant Physician at the Women's Health Institute Professor Botella Llusía (Hospital Clínico San Carlos)
- ◆ Coordinator of the Reproduction Unit of ISM Botella Llusía
- ◆ Degree in Medicine and Surgery from the Autonomous University of Madrid.
- ◆ Specialist in Obstetrics and Gynecology at San Carlos Clinical Hospital
- ◆ D. in Gynecology and Obstetrics (Cum Laude) from the Complutense University of Madrid
- ◆ Master's Degree in Human Reproduction, Rey Juan Carlos I University

### Dr. Cuenca Abarca, Ana

- ◆ Attending Physician of Internal Medicine at Hospital El Escorial
- ◆ Medical Specialist in Internal Medicine at Puerta de Hierro University Hospital
- ◆ Clinical Teaching Collaborator for the Francisco de Vitoria University
- ◆ Medical Degree from the University of Castilla-La Mancha 2003 - 2009
- ◆ PhD in Medicine and Surgery from the Autonomous University of Madrid.

### Dr. Climent Martínez, Nieve

- ◆ Assistant Physician at the University Hospital Fundación Hospital de Alcorcón
- ◆ Gynecology Resident Tutor at the University Hospital Foundation of Alcorcón
- ◆ Specialist in Gynecology and Obstetrics

### Dr. Mattei, Isabella

- ◆ Assistant Physician in Endocrinology and Nutrition at the Hospital 12 de Octubre in Madrid and at the Hospital Fundación Jiménez Díaz, spending two days a week in general practice
- ◆ Resident Physician in Endocrinology and Nutrition at the 12 de Octubre University Hospital in Madrid
- ◆ Degree in Medicine and Surgery from the University of Florence

### Dr. Martín de Francisco, Elisa

- ◆ Medical Specialist in Geriatrics at El Escorial Hospital in Madrid
- ◆ Medical Specialist in Geriatrics at the Infanta Elena Hospital in Valdemoro
- ◆ Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ MIR in Geriatrics at the Getafe University Hospital

### Dr. Romero Gaudix, Barbara

- ◆ Specialist in Obstetrics and Gynecology at the Virgen de las Nieves University Hospital in Granada
- ◆ Coordinator of the Public Centers Interest Group of the Spanish Fertility Society
- ◆ Author of the Master's Degree in Human Infertility and Infertility of the Spanish Society of Gynecology and Obstetrics 2021
- ◆ Degree in Medicine and Surgery from the University of Granada
- ◆ Specialist in Obstetrics and Gynecology via EIR 2008

**Dr. de la Fuente Bitaine, Laura**

- ◆ Area Specialist Physician at Hospital 12 de Octubre
- ◆ Coordinator of the Reproduction Unit of the Hospital 12 de Octubre, Madrid
- ◆ Member of the Human Reproduction Unit at Hospital 12 de Octubre and Tambre Clinic
- ◆ Co-director and Professor of the Master's Degree in Human Reproduction at UCM and SEF
- ◆ Associate Professor of the Complutense University of Madrid
- ◆ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ◆ Doctor Cum Laude of Medicine from the Complutense University of Madrid

**Dr. Carrasco Lara, Pablo**

- ◆ Specialist Physician in Endocrinology and Nutrition at the El Escorial University Hospital
- ◆ Specialist in Endocrinology and Nutrition at Hospital La Luz, University Hospital of Getafe, University Hospital of Fuenlabrada and General University Hospital Gregorio Marañón
- ◆ Degree in Medicine at the Faculty of Health Sciences of the Rey Juan Carlos University in Madrid
- ◆ Master's Degree in Integration and Clinical Problem Solving in Medicine at the University of Alcalá, Madrid
- ◆ Specialty in Endocrinology and Nutrition via MIR at the University Hospital of Getafe
- ◆ Expert in Chronic Complications of Diabetes Mellitus at the University of Barcelona
- ◆ Master's Degree in Clinical Nutrition in Medicine at the CEU-Cardenal Herrera University

**Dr. Fiorante, Silvana**

- ◆ Internal Medicine Service at El Escorial Hospital in Madrid
- ◆ Professor in the Faculty of Health Sciences in the Degree in Dietetics and Nutrition at the Catholic University of Avila
- ◆ Degree in Medicine from the National University of La Plata
- ◆ Doctor of Medicine and Surgery from the Complutense University of Madrid with Cum Laude distinction
- ◆ Master's Degree on Human Immunodeficiency Virus Infection by the Ministry of Health, Consumption and Social Welfare at the Universidad Rey Juan Carlos with Cum Laude distinction
- ◆ Master's Degree in Clinical Management of Health Care Units at the International University Menéndez Pelayo with Cum Laude distinction

**Dr. García Tobaruela, Almudena**

- ◆ Assistant Physician in the Internal Medicine Department of El Escorial Hospital, Madrid
- ◆ Internal Medicine Service Safety Officer
- ◆ Assistant Physician in the Emergency Department of Hospital La Paz, Madrid
- ◆ Degree in Medicine and Surgery from the Autonomous University of Madrid.
- ◆ Specialist in Internal Medicine with training at La Paz University Hospital in Madrid

**Dr. Torres Rodríguez, Enrique**

- ◆ Chief of the Emergency Department of the Hospital de El Escorial in Madrid
- ◆ Specialist in Internal Medicine
- ◆ Master's Degree in Healthcare Unit Management



**Dr. López Velasco, Nuria**

- ◆ Assistant Gynecologist at the University Hospital Fundación de Alcorcón, in the Assisted Human Reproduction Unit
- ◆ Gynecologist Specialist in Assisted Human Reproduction in GINEFIV
- ◆ Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ Master's Degree in Assisted Human Reproduction at Complutense University of Madrid
- ◆ Master's Degree in Minimally Invasive Surgery in Gynecology by CEU

**Dr. Martín Cabrejas, Berta María**

- ◆ Area Specialist Physician at the University Hospital Foundation of Alcorcon
- ◆ Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ Specialist in Gynecology and Obstetrics via MIR
- ◆ Master's Degree of Human Reproduction from the Complutense University of Madrid
- ◆ Master's Degree in Health Management from the Distance University of Madrid

**Dr. Montoro Lara, Juan**

- ◆ Specialist in Internal Medicine at the University Hospital El Escorial
- ◆ Clinical Teaching Collaborator at the Francisco de Vitoria University
- ◆ Clinical Teaching Collaborator at the Autonomous University of Madrid
- ◆ Master's Degree in Emergency Medical Care
- ◆ Master in Hyperbaric Medicine
- ◆ University Expert in Clinical Ultrasound

**Dr. Ortega Carbonell, Amaya**

- ◆ Assistant of Gynecology and Obstetrics at University Hospital Fundación Alcorcón in Madrid (HUFA)
- ◆ Degree in Medicine from the Complutense University of Madrid

**Dr. Pérez Blanco, Carmen**

- ◆ Specialist Physician in Endocrinology and Nutrition at El Escorial Hospital
- ◆ Specialist in Endocrinology and Nutrition at Hospital 12 de Octubre and Hospital de Getafe
- ◆ Doctorate in Medicine from the Autonomous University of Madrid.
- ◆ Specialty in Endocrinology and Nutrition via MIR at the University Hospital of Getafe
- ◆ Master's Degree in Bases for the Care and Education of People with Diabetes at the University of Barcelona
- ◆ Diploma in the Treatment of diabetes mellitus type 2: future experts in diabetes at the Autonomous University of Barcelona
- ◆ Online Master's in Clinical Nutrition in Medicine at the CEU-Cardenal Herrera University

**Dr. Álvarez Gómez, Esther**

- ◆ Area Specialist at the San José Hospital in Teruel
- ◆ Residence of Geriatrics Speliacity at Nuestra Señora de Gracia Hospital
- ◆ Graduated in Medicine from the Complutense University of Madrid
- ◆ Master's Degree in Bioethics at the University of La Rioja
- ◆ Master's Degree in Palliative Care at CEU, Cardenal Herrera University

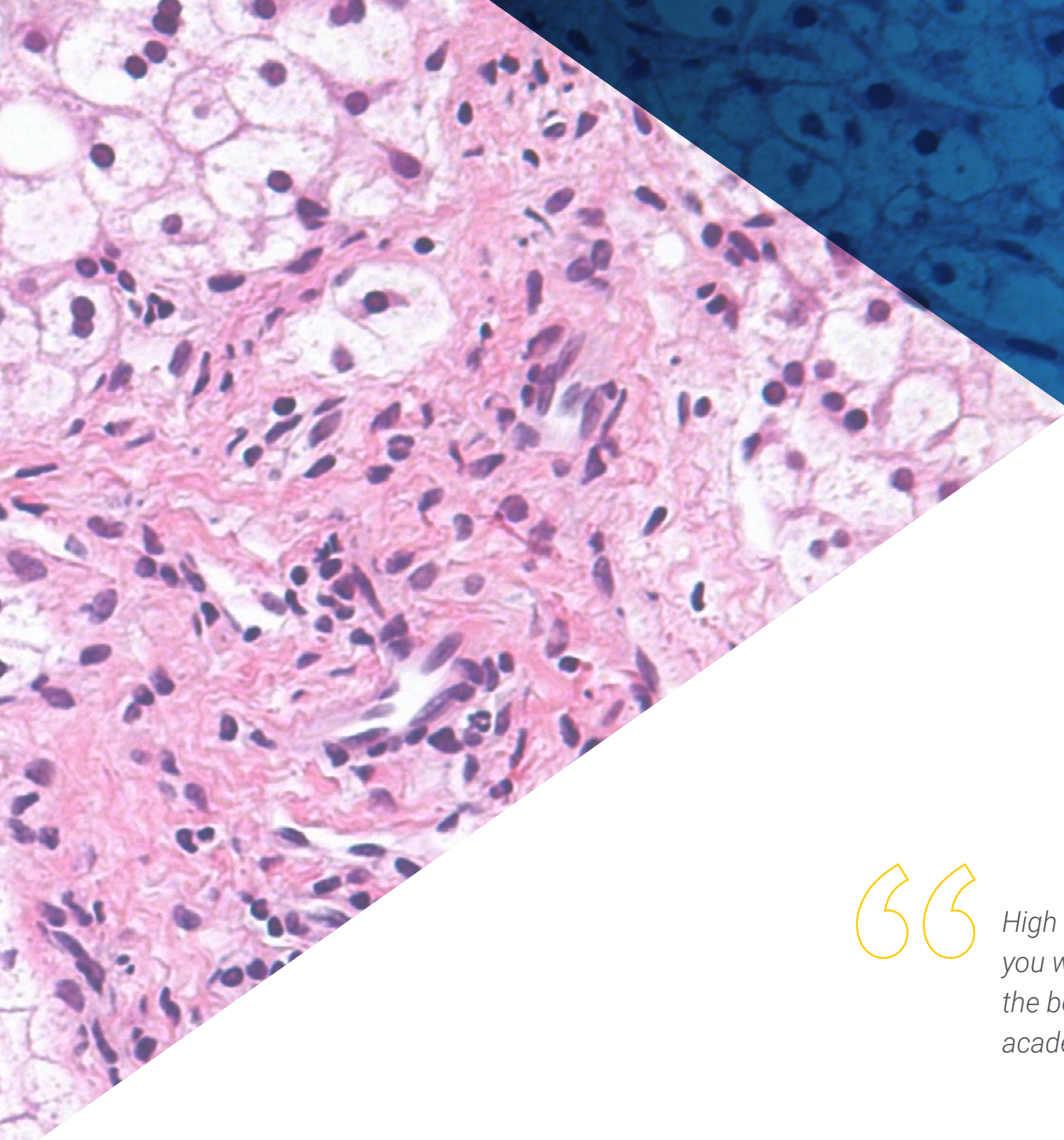
# 05

# Structure and Content

Following the most effective pedagogical methodology, both the structure and contents of this program have been designed by a team of professionals from prestigious hospitals. This gives a unique practical aspect to the program, as the teachers themselves are sharing with the specialist the techniques and theses they use in their daily work, where they have to deal with the most complex endocrine clinical cases.







“

*High quality content that will provide you with a thorough update, with the best didactic resources in the academic panorama"*

## Module 1. Hypothalamus, Pituitary Gland and Autoimmune Pathology

- 1.1. Endocrinology
  - 1.1.1. Types of Hormones
  - 1.1.2. Synthesis, Processing and Degradation of Hormones
  - 1.1.3. Hormone Receptors
  - 1.1.4. Regulatory Systems
  - 1.1.5. Endocrine Autoimmunity
  - 1.1.6. Genetic Bases of Endocrine Diseases
- 1.2. Endocrine Pathophysiology
  - 1.2.1. Biosynthesis Disorders
  - 1.2.2. Secretion Disorders
  - 1.2.3. Transportation Disorders
  - 1.2.4. Action Disorders
  - 1.2.5. Regulatory Disorders
  - 1.2.6. Autonomous Hormone Production
- 1.3. Metabolism, Hormones and Coenzymes
  - 1.3.1. Nutrients
  - 1.3.2. Glucose Pathways
  - 1.3.3. Lipids
  - 1.3.4. Proteins
  - 1.3.5. Energy Procurement and Use
  - 1.3.6. Specific Metabolic Peculiarities
- 1.4. Hypothalamic and Pituitary Physiology
- 1.5. Hypopituitarism
- 1.6. Pineal Gland Pathology
- 1.7. Pituitary Tumor Syndromes
- 1.8. Inadequate ADH Secretion
- 1.9. Central Diabetes Insipidus
- 1.10. Autoimmune Polyglandular Syndromes
  - 1.10.1. Type 1 Autoimmune Polyglandular Autoimmune Syndrome
  - 1.10.2. Type 2 Autoimmune Polyglandular Autoimmune Syndrome

## Module 2. Thyroid, Parathyroid Gland and MEN

- 2.1. Physiology and Thyroid Function Tests
- 2.2. Goiter and the Euthyroid Patient Syndrome
- 2.3. Hypothyroidism
- 2.4. Hyperthyroidism
- 2.5. Tiroiditis
- 2.6. Thyroid Nodule and Thyroid Cancer
- 2.7. Biology of Mineral Metabolism
  - 2.7.1. Parathyroid Hormone
  - 2.7.2. Vitamin D
  - 2.7.3. Regulation of Mineral Metabolism
  - 2.7.4. Laboratory Assessment of Mineral Metabolism
- 2.8. Hypoparathyroidism and Pseudohypoparathyroidism
- 2.9. Hyperparathyroidism
  - 2.9.1. Primary
  - 2.9.2. Secondary
- 2.10. Multiple Endocrine Neoplasms
  - 2.10.1. Type I MEN
  - 2.10.2. Type II MEN

## Module 3. Adrenal Gland Disorders

- 3.1. Anatomy
- 3.2. Adrenal Gland Physiology
- 3.3. Cushing's Syndrome
- 3.4. Adrenal Insufficiency
- 3.5. Hyperaldosteronism
- 3.6. Hypoaldosteronism
- 3.7. Pheochromocytoma
- 3.8. Congenital Adrenal Hyperplasia
- 3.9. Incidentalomas
- 3.10. Adrenal Tumors and Metastases

**Module 4. Obesity, Metabolic Syndrome and Dyslipidemia**

- 4.1. Epidemiology and Measurement of the Obesity
- 4.2. Adipocyte, Etiology and Consequences of Obesity
- 4.3. Epidemiology and Etiology of Metabolic Syndrome
- 4.4. Pathophysiology of Metabolic Syndrome
- 4.5. Clinical Manifestations and Diagnosis of Metabolic Syndrome
  - 4.5.1. Relationship of Metabolic Syndrome with AHT
  - 4.5.2. Relationship of Metabolic Syndrome to Heart Failure
- 4.6. Prevention and Treatment of Metabolic Syndrome
  - 4.6.1. Importance of Lifestyle
  - 4.6.2. Vasculoprotective and Etiopathogenic Treatment
- 4.7. Lipoprotein Metabolism and Classification of Dyslipidemias
- 4.8. Lipid-Lowering Drugs and Therapeutic Strategies
- 4.9. Dyslipidemia Management in Different Clinical Situations
  - 4.9.1. Familial Dyslipidemia
  - 4.9.2. Woman
  - 4.9.3. Elderly people
  - 4.9.4. Diabetes and Metabolic Syndrome
  - 4.9.5. Secondary prevention
- 4.10. Non-Pharmacological Methods
  - 4.10.1. Lifestyle
  - 4.10.2. Functional Food
  - 4.10.3. Medicinal Plants

**Module 5. Diabetes Mellitus**

- 5.1. Etiology, Classification and Prevalence
- 5.2. Etiopathogenesis, Insulin Resistance and Metabolic and Molecular Pathogenesis
- 5.3. Type 1 Diabetes Mellitus
- 5.4. Genetic Basis of Type 2 Diabetes Mellitus
- 5.5. Microvascular Complications
  - 5.5.1. Pathogenesis.
  - 5.5.2. Diabetic Retinopathy.
  - 5.5.3. Diabetic Nephropathy
  - 5.5.4. Diabetic Neuropathy
- 5.6. Macrovascular Complications
  - 5.6.1. Ischemic Heart Disease
  - 5.6.2. Diabetic Cardiomyopathy
  - 5.6.3. Heart Failure
  - 5.6.4. Stroke
  - 5.6.5. Peripheral Arterial Disease
- 5.7. Oral Antidiabetics
- 5.8. Insulin Therapy
- 5.9. Special Considerations
  - 5.9.1. Lipodystrophic Diabetes Mellitus
  - 5.9.2. Total Parenteral Nutrition
  - 5.9.3. Glucocorticoids
- 5.10. Diabetes and Public Health
  - 5.10.1. Type 2 Diabetes Mellitus Screening
  - 5.10.2. Prevention of Type 2 Diabetes Mellitus



## Module 6. Endocrinological Emergencies

- 6.1. Thyrotoxic Crisis
- 6.2. Myxedematous Coma.
- 6.3. Non-Ketotic Hyperglycemic Hyperosmolar Crisis
- 6.4. Diabetic ketoacidosis
- 6.5. Acute Adrenal Insufficiency
- 6.6. Hypoglycemia
- 6.7. Pituitary Apoplexy
- 6.8. Hypocalcemia
- 6.9. Hypercalcemia
- 6.10. Pediatric Endocrinologic Emergencies

## Module 7. Disorders of Intermediate Metabolism and Bone Metabolism

- 7.1. Hemochromatosis
- 7.2. Wilson's Disease
- 7.3. Porphyrrias
- 7.4. Purine and Pyrimidine Metabolism Disorders
- 7.5. Lysosomal Storage Diseases
  - 7.5.1. Pathogenesis
  - 7.5.2. Tay-Sachs Disease
  - 7.5.3. Fabry Disease
  - 7.5.4. Gaucher Disease
  - 7.5.5. Niemann-Pick Disease
  - 7.5.6. Mucopolysaccharidosis
  - 7.5.7. Pompe Disease
  - 7.5.8. Lysosomal Acid Lipase Deficiency
- 7.6. Inherited Disorders of Carbohydrate Metabolism
  - 7.6.1. Glycogenosis
  - 7.6.2. Galactose Metabolism Disorders
  - 7.6.3. Fructose Metabolism Disorders
- 7.7. Inherited Membrane Transport Disorders
  - 7.7.1. Cystinuria
  - 7.7.2. Lysinuria
  - 7.7.3. Citrulinemia
  - 7.7.4. Hartnup Disease
  - 7.7.5. Cystinosis
- 7.8. Osteomalacia, Rickets and Osteogenesis Imperfecta
  - 7.8.1. Bone Remodeling
  - 7.8.2. Osteomalacia
  - 7.8.3. Rickets
  - 7.8.4. Osteogenesis Imperfecta
- 7.9. Osteoporosis
  - 7.9.1. Epidemiology
  - 7.9.2. Pathophysiology
  - 7.9.3. Microbiological
  - 7.9.4. Treatment
  - 7.9.5. Osteoporosis Secondary to Glucocorticoids
- 7.10. Paget's Disease and Other Bone Dysplasias
  - 7.10.1. Paget's Osteopathy
  - 7.10.2. Sclerosing Bone Disorders
  - 7.10.3. Defective Mineralization
  - 7.10.4. Fibrous Dysplasia
  - 7.10.5. McCube-Albright Syndrome

## Module 8. Clinical Nutrition and Dietetics

- 8.1. General Principles
  - 8.1.1. Assessment of Nutritional Status
  - 8.1.2. Nutritional Requirements
  - 8.1.3. Food Groups
  - 8.1.4. Markers of Malnutrition
- 8.2. Dietetics and Dietethotherapy
  - 8.2.1. Dietary Recommendations
  - 8.2.2. Characteristics of the Different Types of Diets
  - 8.2.3. Nutritional Requirements
- 8.3. Enteral Nutrition
  - 8.3.1. Methods and Mechanics of Administration
  - 8.3.2. Indications, Contraindications and Complications
- 8.4. Parenteral Nutrition
  - 8.4.1. Types
  - 8.4.2. Routes and Mechanics of Administration
  - 8.4.3. Indications, Contraindications and Complications
  - 8.4.4. Nutrients in Parenteral Nutrition
  - 8.4.5. Preparation of Mixtures for Parenteral Nutrition
- 8.5. Dietary and Pharmacological Treatment of Obesity
  - 8.5.1. Pretreatment Assessment
  - 8.5.2. Modifications in Caloric Content
  - 8.5.3. Modifications in Dietary Macronutrients
  - 8.5.4. Specific Role in the Control of Obesity
  - 8.5.5. Pharmacological Treatment of Obesity
- 8.6. Diabetes Mellitus
  - 8.6.1. Objectives
  - 8.6.2. Types of Diets
  - 8.6.3. Nutrition Strategies
  - 8.6.4. Recommended Caloric Intakes
  - 8.6.5. Macronutrient Distribution
  - 8.6.6. Other Nutrients

- 8.7. Nutritional Aspects of Hyperlipemia
  - 8.7.1. Influence of Fatty Acids on Cardiovascular Risk
  - 8.7.2. Effects of Sterols on Cardiovascular Risk
  - 8.7.3. Recommendations to Reduce the Impact of the Atherogenic Diet
  - 8.7.4. Other Nutritional Recommendations
- 8.8. Hydrosaline Metabolism
  - 8.8.1. Sodium-Controlled Diet
  - 8.8.2. Potassium-Controlled Diet
  - 8.8.3. Diet in Arterial Hypertension
- 8.9. Nutrition in Gastrointestinal Pathologies
  - 8.9.1. Celiac Disease Diet
  - 8.9.2. Diet and Hepatobiliary Disease
  - 8.9.3. Diet and Inflammatory Bowel Disease
  - 8.9.4. Lactose Intolerance
  - 8.9.5. Probiotics, Prebiotics, Symbiotics, and Fiber
- 8.10. Nutrition and Renal Pathology
  - 8.10.1. Malnutrition as a Morbidity and Mortality Factor
  - 8.10.2. Nutritional Assessment in Renal Patients
  - 8.10.3. Nutritional Recommendations
  - 8.10.4. Nutritional Treatment

## Module 9. Women and Endocrinology

- 9.1. Physiology of the Menstrual Cycle
- 9.2. Amenorrhea
  - 9.2.1. Classification
  - 9.2.2. Primary Amenorrhea
  - 9.2.3. Secondary Amenorrhea
- 9.3. Polycystic Ovarian Syndrome and Chronic Anovulation
- 9.4. Hyperandrogenism and Hirsutism
- 9.5. Hyperprolactinemia
- 9.6. Gestational Diabetes

- 9.7. Endocrinology of Pregnancy
  - 9.7.1. Pituitary Hormones
  - 9.7.2. Thyroid Hormones
  - 9.7.3. Sexual Hormones
  - 9.7.4. Placental Hormones
- 9.8. Hormonal Contraception
- 9.9. Hormones and Reproduction
- 9.10. Climacteric
  - 9.10.1. Hormonal Changes
  - 9.10.2. Clinical Manifestations
    - 9.10.2.1. Vasomotor Symptoms
    - 9.10.2.2. Menstrual Alterations
    - 9.10.2.3. Psychological Sphere
  - 9.10.3. Osteoporosis and Menopause
  - 9.10.4. Cardiovascular Diseases and Menopause
  - 9.10.5. Hormone Replacement Therapy

## Module 10. Miscellaneous

- 10.1. Gonadal Pathology
  - 10.1.1. Male Hypogonadism
  - 10.1.2. Male Hypergonadism
- 10.2. Endocrinologic Diseases in the Elderly
  - 10.2.1. Endocrinological Changes in Aging
  - 10.2.2. Endocrinopathies in the Elderly
  - 10.2.3. Diabetes Mellitus in the Elderly
  - 10.2.4. Thyroid Diseases in the Elderly
- 10.3. Endocrine Neoplasms of the Pancreas
- 10.4. Carcinoid syndrome
- 10.5. Paraneoplastic Endocrinopathies
- 10.6. Arterial Hypertension of Endocrine Origin

- 10.7. Gastrointestinal Hormones in the Control of Dietary Intake
  - 10.7.1. Anorexigenic Hormones
  - 10.7.2. Orexigenic Hormones
- 10.8. Central Nervous System and Hormones
  - 10.8.1. Thyroid Hormones
  - 10.8.2. Steroids
  - 10.8.3. Testosterone
- 10.9. Short Stature: Diagnostic Approach and Therapeutic Basis
- 10.10. Endocrine System and Heart
  - 10.10.1. Pituitary and Cardiovascular System
  - 10.10.2. Cushing's Syndrome and Cardiovascular Disease
  - 10.10.3. Thyroid and Cardiovascular System
  - 10.10.4. Parathyrin and Cardiovascular System
  - 10.10.5. Adrenal Gland and Cardiovascular System



*You will be able to ask the teachers any questions you may have about the syllabus, with full and personalized attention”*





06

# 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.



“

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



“

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

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

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





## Relearning Methodology

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

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

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



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

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

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

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

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



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



#### Study Material

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

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



#### Surgical Techniques and Procedures on Video

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



#### Interactive Summaries

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

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



#### Additional Reading

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





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

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



#### Testing & Retesting

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



#### Classes

There is scientific evidence on the 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.





# 07 Certificate

The Master's Degree in Update on Endocrinology guarantees students, in addition to the most rigorous and up to date education, access to a Master's Degree 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 program will allow you to obtain your **Master's Degree diploma in Update on Endocrinology** 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.

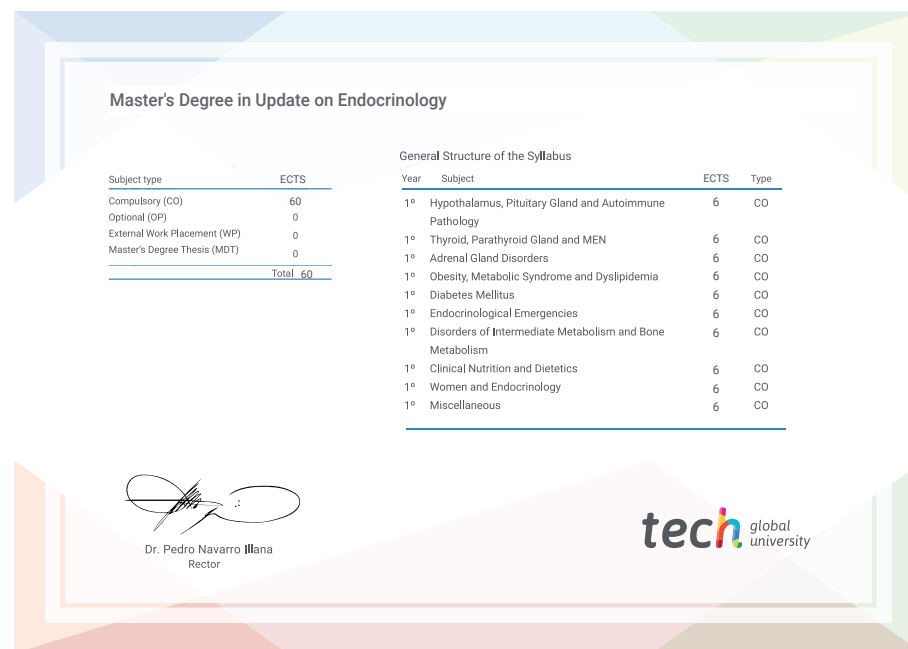
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Master's Degree in Update on Endocrinology**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**



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

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



## Master's Degree

### Update on Endocrinology

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online



# Master's Degree

## Update on Endocrinology

