





# Hybrid Professional Master's Degree

## Allergology

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 ECTS Credits

We bsite: www.techtitute.com/us/medicine/hybrid-professional-master-degree-hybrid-professional-master-degree-allergology

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## tech 06 | Introduction

Scientific and technological research related to the field of Allergology is currently focused on the search for innovative treatments that help to improve the quality of life of patients. An example of this are revolutionary methods such as immunotherapy, the application of allergen inhibitors by means of proton pumps, among others. At the same time, this health field has also found more comprehensive diagnostic strategies that have made it possible to explain and anticipate some allergic disorders that are genetically expressed. The application of all these procedures depends, to a large extent, on advanced skills in the hands of specialists. However, allergists rarely have access to update programs that cover the latest developments in these areas.

TECH has decided to break away from this context and, to this end, has devised this Hybrid Professional Master's Degree. The program not only reflects the most recent advances in this field of medicine, but also provides a pioneering study modality of its kind. Through two distinct educational phases, the professional will be able to master the subject in a holistic way. First, you will analyze in a theoretical way an updated syllabus and assimilate all its notions using innovative didactic methods such as Relearning. Among the contents to be included in this academic plan are the most modern drugs to combat allergies and the clinical expressions of respiratory, skin and food pathologies in this sector.

At the end of this period, the physician will have at his/her disposal a 3-week Internship Program in state-of-the-art hospital centers. These facilities have the most advanced technologies in the field of Allergology and an experienced staff. Based on these technical and human resources, the specialist will be able to apply everything previously learned in a face-to-face and intensive way. In addition, you will be supervised and guided by a renowned adjunct tutor in the healthcare in the health care field.

This **Hybrid Professional Master's Degree in Allergology** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Development of more than 100 clinical cases presented by professionals in this area of work and university professors with extensive experience and experience
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Comprehensive systematized action plans for major pathologies
- Presentation of practical workshops on procedures diagnosis, and treatment techniques
- An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- Practical clinical guides on approaching different pathologies
- With a special emphasis on evidence-based medicine and research methodologies
- All this will be complemented with theoretical lessons, questions to the expert, discussion forums on controversial issues and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection
- In addition, you will be able to carry out a clinical internship in one of the best hospitals in the world



The teaching materials of this program, elaborated by these specialists, have contents that are completely applicable to your professional experiences"



This Hybrid Professional Master's Degree allows you to practice first in simulated environments, which provide an immersive learning experience, and then in the real hospital environment, putting to the test everything you have studied"

In this Professional Master's Degree proposal, of professionalizing character and blended learning modality, the program is aimed at updating medical professionals in the field of Pediatric Infectious Diseases. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge into practice, and the theoretical-practical elements will facilitate the updating of knowledge and will allow decision making in patient management.

Thanks to its multimedia content developed with the latest educational technology, they will allow the professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to prepare in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. This will be done with the help of an innovative interactive video system developed by renowned experts with extensive teaching experience.

Enjoy an intensive 3-week stay and acquire all the knowledge to grow personally and professionally.

Update your skills in a health institution with the highest technological and human quality for the care of patients with severe allergic pathologies.







# tech 10 | Why Study this Hybrid Professional Master's Degree?

### 1. Updating from the latest technology available

The treatment of allergic diseases has evolved considerably in recent years and an example of this are the different technologies that are now used to apply novel methods such as Immunotherapies. All these scientific advances will be available to allergists who take this program after their practical stay in a health center of international prestige.

### 2. Gaining In-Depth Knowledge from the Experience of Top Specialists

This Hybrid Professional Master's Degree will facilitate the student's update by the hand of specialists with a distinguished trajectory in the area of Allergology. These experts will provide them with the latest protocols and the most complex tools. In turn, the physician will be supported by a designated tutor who will closely monitor his or her academic progress.

### 3. Entering First-Class Clinical Environments

TECH carefully selects all the centers available for the clinical internships of this Hybrid Professional Master's Degree. Thanks to this, the specialist will have guaranteed access to a prestigious clinical environment in the field of Allergology. In this way, you will be able to see the day-to-day work of a demanding, rigorous and exhaustive sector, always applying the latest theses and scientific postulates in its work methodology.





# Why Study this Hybrid Professional | 11 tech Master's Degree?

#### 4. Combining the Best Theory with State-of-the-Art Practice

The academic market is plagued by pedagogical programs that are poorly adapted to the daily work of the allergist. However, TECH offers a new learning model, which combines theoretical and practical study through this innovative program to which the student will dedicate 1,500 hours of updating in a 100% online learning site and a 3-week clinical stay.

### 5. Expanding the Boundaries of Knowledge

The practical training of this program may be carried out in centers of international scope. Thus, the physician will be able to expand their frontiers and catch up with the best professionals and hospital environments of excellence, located in different continents. This is a unique opportunity, only available to TECH through its wide network of partners and contacts.





The general objective of this program is to ensure that the professional updates the diagnostic and therapeutic procedures of the specialty in a complete manner. For this, the theoretical learning of the subject will be provided, with the most current and interesting contents in this sector, to finish with a hospital stay in which you will carry out the practical learning, with the help of recognized professionals in a hospital center of the highest scientific quality and technological innovation.



## tech 14 | Objectives



## **General Objective**

The latest advances in Allergology in areas such as panallergens or diagnostic
methods have brought about a great revolution in the discipline. This requires
the specialist to be up to date with the latest techniques and procedures in
the management of this type of patient. Thus, upon completion of this Hybrid
Professional Master's Degree, you will be ready to proceed according to the latest
scientific evidence on the subject



The most effective resources in online teaching, in a practical, comfortable and high-impact learning"





#### Module 1. Introduction to Allergology

- Get up to date on the basic concepts of traditional allergic diseases
- Learn about the most recent concepts of allergology in relation to new drugs
- Learn the basic criteria of the key immunological reactions: skin, respiratory, and food
- Develop skills in the use and understanding of the immunological mass mechanisms of allergic diseases: effector cells, immunoglobulins, interleukin, cytokines and complements
- Knowledge of the current numerical data on incidence and prevalence of allergic pathologies

#### Module 2. Allergens. Panallergens and their Impact on Allergic Diseases

- Know and classify allergens
- Get up to date on the concept of a panallergen and its impact on allergic diseases
- Accurately describe respiratory, food, animal, and hymenoptera allergens
- Define and describe the main pollen-food syndromes

#### Module 3. Diagnostic Techniques for Allergic Diseases

- Address diagnostic techniques for traditional allergic diseases
- Learn the characteristics of component diagnostics
- Learn the characteristics of the induced sputum technique to phenotyping patients
- Know and apply in daily clinical practice the traditional in vivo techniques for diagnosing allergic diseases: Prick test, Epicutaneous tests
- Know and apply modern *invitro* diagnostic techniques in clinical practice: Component-based diagnosis in allergic diseases due to different allergens, Basotest, Induced Sputum
- Understand and define the most commonly used equipment in the allergic specialty, from spirometry, rhinomanometry, acoustic rhinometry, measurement of exhaled nitric oxide, etc

## Module 4. Main Respiratory Allergic Diseases. Epidemiology, Diagnosis, and Treatment

- Review the allergic epidemiology of the 20th Century
- Review the main respiratory allergic pathologies
- Develop up-to-date diagnostic and treatment techniques
- · Learn how to interact with other involved specialties
- Define how modern Multidisciplinary Units operate
- Differential diagnosis and diagnostic techniques of the main respiratory allergic diseases: Rhinitis, Asthma, Polyposis
- Differential diagnosis of other allergic respiratory diseases such as Eosinophilic: Bronchitis and Allergic Bronchopulmonary Assylosis
- Know doses and indications of the different biological formats for treating allergic respiratory diseases

#### Module 5. Allergy-Related Skin Diseases

- Get up to date on new practice guidelines for skin diseases related to the field of allergology
- Learn about new biological drugs for skin conditions
- Understand and know how to diagnose the main allergic skin conditions: dermatitis, urticaria, edema
- · Know both the traditional and modern treatments for these diseases
- Know the indications and dosage of biological formats for treating allergic skin diseases

## tech 16 | Objectives

#### Module 6. Immunodeficiencies in Allergology: Diagnostics and Treatments

- Explore immunodeficiencies related to allergology
- Study advanced diagnostic procedures in this line of work
- Study updated treatments in this area
- Know the classification and definition of immunodeficiencies in adults and the child population
- Know the differential diagnosis of autoimmune diseases in allergology
- Define and treat mastocytosis
- Understand the relevance of alpha 1 antitrypsin deficiency in allergic diseases

### Module 7. Food allergies. Epidemiology, Diagnosis, and Treatment

- Study the most prevalent food allergies today
- Analyze the main forms of food allergy in pediatrics
- Learn how to use the main techniques for diagnosing and treating food allergies
- Understand the different food groups, their classification and taxonomy
- Understand the different molecular profiles of different food allergies: vegetables, fish and seafood, fruits and nuts, legumes
- Diagnose and treat the most prevalent food allergies in children: Milk and egg allergy and fish allergy

### Module 8. Main Pharmacological Groups Causing Allergic Pathology

- Training in drug allergy pathologies
- Review the main pharmacological groups causing allergic pathology
- Learn the classification of the different pharmacological groups; antibiotics, NSAIDs, chemotherapeutic contrast media, proton pump inhibitors
- Know the main differences between idiosyncratic and allergic reactions
- Know the diagnostic protocols for diagnosing allergy to beta-lactams and NSAIDs

#### Module 9. Allergy to Hymenoptera. Classification and Taxonomy

- Hymenoptera allergy analysis
- Classify and taxonomize Hymenoptera according to the patient's geographical location
- Know other types of insects of relevance in terms of their impact in different parts of the planet
- Know the classification and taxonomy of the different vespids
- Learn about diagnostic tests for hymenoptera allergy
- Become familiar with international guidelines for treating hymenoptera allergy

## Module 10. Future Allergology. Research. Food Immunotherapy and Drug Desensitization

- Discuss future approaches to allergology based on the latest advances in research
- · Learn about the development of immunotherapy with food
- Learn how drug desensitization works
- Knowledge of the different immunotherapy methods, routes, and guidelines
- Understand the current use of immunotherapy with food
- Know the different guidelines for desensitization with drugs
- Learn about future lines of research in the field of Allergology

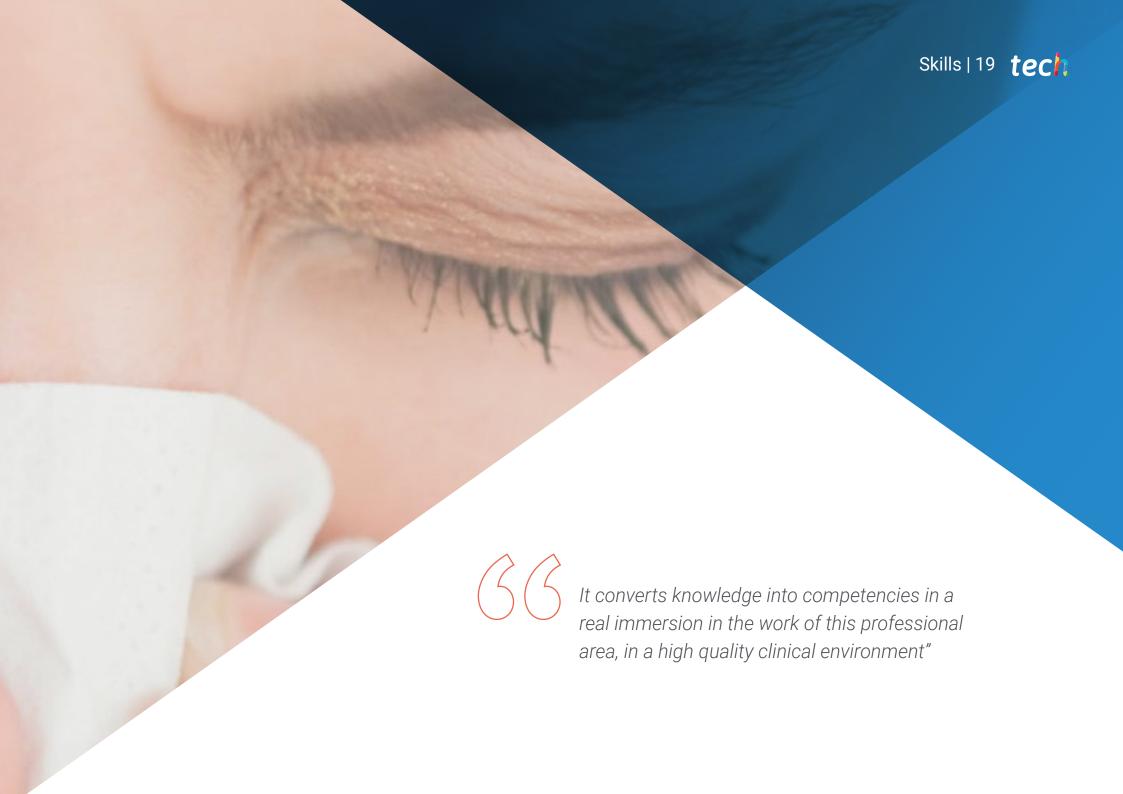
# Module 11. The Author's Professional Experience in the Diagnosis and Treatment of Allergic Diseases

- Analysis of allergic diseases in the occupational setting
- Development of new techniques for diagnosing and treating these allergic pathologies
- Define the concept of occupational respiratory disease
- Distinguish between asthma exacerbated by work and asthma caused by work
- Know the diagnostic methodology of occupational respiratory disease: specific bronchial provocations, provocation chamber, etc
- Know the main high and low molecular weight occupational agents
- Differential diagnosis between the different occupational respiratory pathologies: Rhinitis, asthma, eosinophilic bronchitis, pneumonitis, etc

#### Module 12. Miscellaneous

- Learn the basics of telemedicine and social networks in the field of allergology
- Learn about new developmental drugs in allergology
- Reflect on associationism in the field of allergology





## tech 20 | Skills



#### **General Skills**

- Be able to make a correct definition of Allergology in the 21st Century
- Recognize new manifestations of allergic diseases
- Include the new lines of work in treatment protocols
- Carry out innovative approaches based on the latest advances
- Give adequate importance to allergic pathologies in the context of primary care
- Carry out a prophylactic intervention in terms of allergen recognition and avoidance



The skills honed through this Hybrid Professional Master's Degree will make you a competitive specialist in the field of Allergology on the international scene"



## **Specific Skills**

- Possess a broad compendium of up-to-date knowledge regarding the new vision of allergology and the most current drugs
- Recognize the basic criteria for key immunologic reactions
- Be proficient in immunological mass mechanisms
- Be able to recognize, classify and describe the different allergens and pollen-food syndromes
- Diagnose the different allergic pathologies by means of different techniques, differentiating the suitability of each of them in each case: induced sputum, in vivo techniques (Prick Test, Prick-Prick, Epicutaneous Tests, Basotest, Induced Sputum)
- Diagnose the different comorbidities of allergic diseases: gastroesophageal reflux, sleep disorders, among others
- Diagnose and intervene in allergic respiratory diseases with classical and new ways
  of intervention
- Organize and carry out the interaction with other specialties and multidisciplinary units
- Work effectively with the appropriate diagnostic techniques in rhinitis, asthma, polyposis, eosinophilic bronchitis bronchopulmonary ascites, allergic bronchitis
- Be able to create a treatment protocol and master the dosages and indications of traditional and state-of-the-art drugs in allergic respiratory diseases
- Diagnose and treat allergic skin diseases, with the most traditional and the most advanced treatments
- Know how to use new drugs in skin conditions: dermatitis, urticaria, edema

- Create a treatment protocol and master the dosages and indications of traditional and state-of-the-art drugs in allergic skin diseases
- In-depth knowledge of immunodeficiencies related to allergic disease in adults and children
- Recognize the different autoimmune diseases related to allergic reaction
- Make an efficient differential diagnosis of these diseases in children and adults
- Know how to determine the presence of mastocytosis and alpha 1 antitrypsin deficiency, and create the appropriate intervention
- · Define the appropriate treatment with new and traditional drugs
- Recognize the most common food allergies and their molecular profiles according to groups: vegetables, fish and seafood, fruits and nuts, legumes
- Perform a proper diagnosis of food allergies
- Know how to treat these types of allergies properly
- Diagnose and treat the most prevalent food allergies in children: milk, egg, fish
- Recognize the most common drugs in allergic pathology, classified in groups
- Know how to differentiate between idiosyncratic and allergic differences
- Use the different diagnostic protocols for allergies to Beta Lactams and Aines
- Have an in-depth knowledge of hymenopteran allergy, its prevalence and the different types
  of insects according to geographical location
- Master the diagnostic techniques for hymenoptera allergy and the international guidelines for its treatment

- Have current data on the future of allergology: immunotherapy with food, desensitization using drugs,
- Be qualified to use immunotherapy techniques with food
- Be qualified to use desensitization tendencies with drugs or XI
- Recognize occupational allergic diseases and occupational agents of high and low molecular weight
- Use modern techniques for diagnosis and treatment of these diseases and to perform a complete differential diagnosis
- Differentiate between work-exacerbated and work-induced asthma
- Apply the diagnostic methodology of occupational respiratory disease: bronchial provocations, provocation chamber
- Use telemedicine and social networks in the field of allergology
- Use new drugs in allergology
- Know the advantages of associationism in the field of allergology



physician through a very complete syllabus that includes such innovative contents as allergy therapy based on the application of inhibitors by means of proton pumps.

#### **International Guest Director**

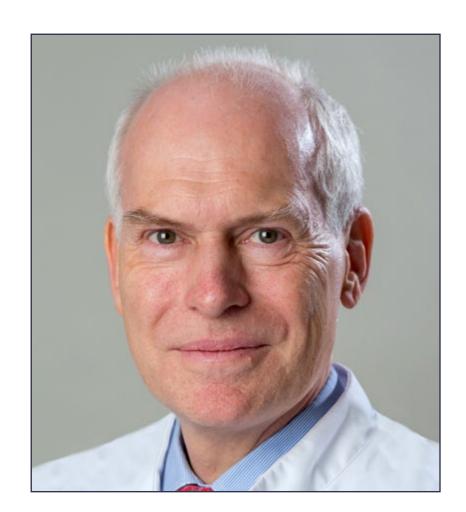
Dr. Torsten Zuberbier's outstanding professional and research career has left an indelible mark on the medical management of allergic diseases. The expert's healthcare competencies and prestige have enabled him to serve for almost two decades as President of the Foundation of the European Center for Allergy Research.

He also holds the main management positions at the Institute for Allergy Research at the Charité Berlin University and at the Fraunhofer Institute for Translational Medicine and Pharmacology, together with Professor Marcus Maurer.

On the other hand, his clinical work focuses on Urticaria, Neurodermatitis, Respiratory and Food Allergies and Allergic Rhinitis. However, his research and experimental work has been devoted to Mast Cell Biology, Mastocytosis and Atopic Dermatitis. Specifically, his studies have delved into the interaction of these immune cells with tissue-type cells. In this way, through a three-dimensional skin model, he has examined the close relationship between these processes and the development of other pathologies such as Eczema and Epidermal Neoplasia.

In this regard, this expert has numerous academic articles in scientific journals of global impact. He is Deputy Editor of the Journal of the German Dermatological Society and a member of the Advisory Board of the Allergo Journal. In these publications, the specialist has also disclosed his views on the relevance of Translational Medicine and the importance of accelerating the applied integration of the latest scientific knowledge.

In addition to this work, Dr. Zuberbier is President of the Global Allergy and Asthma Network of Excellence (GA<sup>2</sup>LEN), initiated by the European Union. He has also been Director General of the Dermatology, Venereology and Allergology Clinic of the Charité and has led the Allergie-Centrum-Charité of the Berlin-Mitte Dermatology Clinic.



## Dr. Zuberbier, Torsten

- · Co-Director of the Fraunhofer Institute for Translational Medicine and Pharmacology
- · President of the Foundation of the European Center for Allergy Research
- · Chairman of the Global Allergy and Asthma Excellence Network (GA<sup>2</sup>LEN)
- · Co-Director General of the Clinic of Dermatology, Venereology and Allergology of the Charité
- · Director of the Allergie-Centrum-Charité of the Dermatology Clinic Berlin-Mitte
- · Head Physician for Dermatology at the Virchow Clinic in Berlin
- · Honorary Doctorate of the University of Athens
- · Specialist in Dermatology at the University of Perth Australia
- · Medical Degree at the Freie Universität Berlin



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

### Management



#### Dr. María del Mar Fernández Nieto

- Specialist in Allergology of the High Complexity Asthma Unit at the Fundación Jiménez Díaz University Hospital
- Collaborating Professor of the Department of Internal Medicine at Rey Juan Carlos University
- Member of: CIBERES, MEGA, SEAIC, NeumoMadrid, SEPAR, ERS y EAACI

### **Professors**

#### Dr. Arochena González, Lourdes

- Attending Physician of the Allergology Department at Jiménez Díaz Foundation
- Medical Specialist in Allergology in Sanitas
- Medical Specialist in Allergology at the Manchester System University Hospital (England)
- Degree in Medicine from the Complutense University of Madrid
- Member of SEAIC, EAACI, AAAAI, ERS

#### Dr. Pamela Francesca Jara Gutiérrez

- Physician at Fundación Jiménez Díaz University Hospital
- PhD in Medicine and Surgery from the Autonomous University of Madrid
- Degree in Medicine from the National University of St. Augustine
- Member of the European Academy of Allergy and Clinical Immunology, Medical Association of North Rhine-Westphalia, Society of Allergy and Clinical Immunology of Madrid-Castilla La Mancha, Society of Madrid and Castilla-La Mancha of Allergy and Clinical Immunology

#### Dr. Elena Seoane Reula

- Head of the Immunodeficiency Service at the Hospital Materno Infantil Gregorio Marañón
- Medical Specialist in Immunology at the Hospital Materno Infantil Gregorio Marañon
- AEDIP Medical Advisor
- Assistant Physician of Allergology at Infanta Leonor University Hospital
- Medical Specialist in Allergology at the 12 de Octubre University Hospital
- Medical Collaborator at the John Radcliffe Hospital associated with the University of Oxford
- Doctor in Medicine and Surgery from the University of Cadiz
- Master's Degree in Pediatrics from the San Jorge University. Zaragoza
- Member of AEDIP, SEAIC, SEICAP, GISEI, ESID

#### Dr. Aída Gómez Cardeñosa

- Medical Specialist in Allergology
- Assistant Physician of the Allergy Department at the Fundación Jiménez Díaz University Hospital
- Medical Advisor at LETI Pharma
- Degree in Medicine from the Complutense University of Madrid
- Revisora colaboradora del Journal of Investigational Allergology and Clinical Immunology
- Member of the Multidisciplinary Asthma Unit at the Fundación Jiménez Díaz University Hospital and the Spanish Society of Allergology and Clinical Immunology (SEAIC)

#### Dr. Dávila Fernández, Galicia

- Assistant Physician of the Allergology Service at the University Hospital of Henares
- Training and Teaching Coordinator at the University Hospital del Henares
- Associate Professor (PAC) at the Francisco de Vitoria University. Madrid
- Member of the Spanish Society of Allergology and Clinical Immunology (SEAIC), Drug Allergy Committee of the SEAIC

#### Dr. Rojas Pérez-Ezquerra, Patricia

- Specialist Physician in Fields at the Gregorio Marañón General University Hospital
- Specialist in Allergology in Medical Writers 5.0
- Doctor of the Central Hospital of the Red Cross San Jose and Santa Adela
- Specialist in Allergology at the Alcorcón Foundation University Hospital
- Master's Degree in Clinical Management, Medical and Healthcare Management from the CEU Cardenal Herrera University
- MIR in Allergology at Gregorio Marañón General University Hospital
- Member of SEAIC

#### Dr. Nathalie Acevedo Caballero

- · Immunologist and researcher
- Researcher of the Institute of Immunological Research
- Ph.D. in Medical Sciences from Karolinska Institutet
- Degree in Medicine from the University of Cartagena





## tech 30 | Educational Plan

#### **Module 1.** Introduction to Allergology

- 1.1. Introduction
  - 1.1.1. Terminology
  - 1.1.2. Atopy
  - 1.1.3. Allergy
- 1.2. History of Allergies
  - 1.2.1. Origins and Development
- 1.3. Prevalence of allergic diseases. Pharmacoeconomics of Allergic Diseases
  - 1.3.1. Prevalence
  - 1.3.2. Pharmacoeconomics
- 1.4. Immunological Basis of Allergic Diseases
  - 1.4.1. Immunological Basis of Allergic Diseases
  - 1.4.2. Classification of Hypersensitivity Reactions
  - 1.4.3. Cells and Molecules Involved in the Immediate Hypersensitivity Immune Response
- 1.5. Pathophysiology of an Allergic Reaction. Genetic Basis of Allergic Diseases
- 1.6. Effector Cells Involved in Allergic Reactions
  - 1.6.1. Effector Cells Involved in Allergic Reactions
  - 1.6.2. Basophils, Mast Cells, Cytokines, Eosinophils, Allergy Mediators
- 1.7. Inmunoglobulina E: características. Mechanisms of IgE Synthesis Regulation. High and Low-Affinity IgE Receptors
- 1.8. The Complement System Components. Activation and Regulation Pathways
- 1.9. Immunological Mechanisms Involved in Allergic Dermatoses
- 1.10. Digestive Tract Immunology Mechanisms of Immunological Tolerance Allergic Reactions to Food Adverse Reactions to Additives and Preservatives

# **Module 2.** Allergens. Panallergens and their Impact on Allergic Diseases

- 2.1. Allergens. Types. Structure. Characterization and Purification of Allergens. Concept of Cross-Reactivity. Panallergens
- 2.2. Classification of the Main Environmental Allergens
- 2.3. Classification and Taxonomy of the Main Food Allergens
- 2.4. Classification and Description of the Main Skin Allergens
- 2.5. Allergic Reactions to Latex. Cross Allergenicity with Food. Clinical Presentation. Latex Allergy Prevention
- 2.6. Description of Pollen-Food Syndromes: Classification, Description, Prevalence
- 2.7. Classification and Description of the Main Allergic Diseases of Drug Origin
- 2.8. Classification, Description, and Taxonomy of Animal Allergens
- 2.9. Classification, Description, and Taxonomy of Vespid Allergens

### Module 3. Diagnostic Techniques for Allergic Diseases

- 3.1. General Aspects of the Diagnosis of Allergic Diseases
  - 3.1.1. Basic Criteria
- 3.2. In-Vivo Diagnostic Methods of Allergic Diseases: *Prick* Test. Epicutaneous Tests. Oral Provocation Tests
- 3.3. InVitro Methods of Allergic Diseases. Classification and Description
- 3.4. Molecular Diagnostics by Components in Pneumoallergen Allergic Respiratory Diseases: Pollens
- 3.5. Molecular Diagnostics by Components in Pneumoallergen Allergic Respiratory Diseases: Mites and Fungi
  - 3.5.1. Diagnostic Techniques
- 3.6. Molecular Diagnostics by Components in Pneumoallergen Allergic Respiratory Diseases: Animals
  - 3.6.1. Diagnostic Techniques
- 3.7. Molecular and Component-Based Diagnosis in Food Allergy
- 3.8. Molecular and Component-Based Diagnosis in Vespid Allergy
- 3.9. Basotest in the Diagnosis of Allergic Diseases
- 3.10. Induced Sputum in the Diagnosis of Respiratory Allergic Diseases
- 3.11. Apparatus in the Diagnosis of Allergic Diseases
- 3.12. Diagnosis of comorbidities of allergic diseases: obesity, gastroesophageal reflux disease and sleep disorders

# **Module 4.** Main Respiratory Allergic Diseases. Epidemiology, Diagnosis, and Treatment

- 4.1. Allergic Rhinoconjunctivitis
- 4.2. Nasosinusal Polyposis
- 4.3. Asthma
  - 4.3.1. Definition and Classification
  - 4.3.2. Diagnosis and Treatment
- 4.4. ACOS Mixed Phenotype
- 4.5. Biological Drugs in the Treatment of Asthma
- 4.6. Thermoplasty in Asthma Treatment
- 4.7. Eosinophilic Bronchitis
- 4.8. Allergic Bronchopulmonary Aspergillosis. Extrinsic Allergic Alveolitis
- 4.9. Alpha 1 Antitrypsin Deficiency and Respiratory Allergic Pathology

#### Module 5. Allergy-Related Skin Diseases

- 5.1. Atopic Dermatitis
- 5.2. Chronic Spontaneous Urticaria
- 5.3. Angioedema
- 5.4. Urticarial-Vasculitis
- 5.5. Alpha 1 Antitrypsin Deficiency and Skin Diseases in Allergology
- 5.6. Biological Drugs in the Treatment of Atopic Dermatitis
- 5.7. Biological Drugs in the Treatment of Chronic Urticaria
- 5.8. Biological Drugs in the Treatment of Angioedema

# **Module 6.** Immunodeficiencies in Allergology: Diagnostics and Treatments

- 6.1. Primary Immunodeficiencies in Pediatric Patients
- 6.2. Primary Immunodeficiencies in Adult Patients
- 6.3. Organ-Specific Autoimmune Diseases
- 6.4. Systemic Autoimmune Diseases
- 6.5. Alpha 1 Antitrypsin Deficiency
- 6.6. Cutaneous Mastocytosis
- 6.7. Systematic Mastocytosis
- 6.8. Coeliac Disease

### Module 7. Food allergies. Epidemiology, Diagnosis, and Treatment

- 7.1. Food Allergy. Classification and Taxonomy
- 7.2. Milk Allergy
- 7.3. Egg Allergy
- 7.4. Fish Allergy
- 7.5. Seafood Allergy
- 7.6. Fruit and Nut Allergy
- 7.7. Legume Allergy
- 7.8. Allergy to Other Plant-Based Foods
- 7.9. Gluten Allergy
- 7.10. Allergy to Additives and Preservatives

### Module 8. Main Pharmacological Groups Causing Allergic Pathology

- 8.1. Adverse Reactions to Medications. Immune System Adverse Reactions
- 8.2. Allergy to Beta-Lactam Antibiotics
- 8.3. Allergy to Quinolone Group Antibiotics
- 8.4. Allergy to Sulfonamide Group Antibiotics
- 8.5. Allergy to Non-Steroidal Anti-Inflammatory Drugs
- 8.6. Allergy to Chemotherapy Drugs
- 8.7. Allergy to Anticoagulants
- 8.8. Proton Pump Inhibitor Allergy
- 8.9. Allergy to Contrast Media
- 8.10. Pseudoallergic and Idiosyncratic Reactions to Drugs

## tech 32 | Educational Plan

### Module 9. Allergy to Hymenoptera. Classification and Taxonomy

- 9.1. Classification and Taxonomy
- 9.2. Epidemiology and Prevalence
- 9.3. Geographical Location of the Different Allergologically Relevant Hymenoptera
- 9.4. Systemic Allergic Reactions due to Hymenoptera: Bees
- 9.5. Systemic Allergic Reactions due to Hymenoptera. Wasps
- 9.6. Diagnosis of Allergic Reactions to Hymenoptera
- 9.7. Prophylaxis of Reactions to Hymenoptera Venoms
- 9.8. Treatment of Hymenoptera Allergy
- 9.9. Allergy to Hymenoptera Venom and Mastocytosis
- 9.10. Other Insect Bites

# **Module 10.** Future Allergology. Research. Food Immunotherapy and Drug Desensitization

- 10.1. Research and Allergy
- 10.2. Big Data in Allergy Diseases
- 10.3. Introduction to Immunotherapy of Allergic Diseases. Introduction
- 10.4. Immunotherapy of Allergic Rhinitis and Asthma
- 10.5. Food Allergy Immunotherapy
- 10.6. Desensitization for the Treatment of Drug Allergy
- 10.7. Peptide immunotherapy
- 10.8. Immunotherapy and the Use of Biological Drugs





## Educational Plan | 33 tech

# **Module 11.** The Author's Professional Experience in the Diagnosis and Treatment of Allergic Diseases

- 11.1. Classification of Occupational Respiratory Diseases
- 11.2. Occupational Asthma, Diagnosis
- 11.3. Diagnostic tests in occupational asthma: skin testing, routine respiratory testing
- 11.4. Provocation Chambers in Occupational Asthma Diagnostics
- 11.5. Use of Induced Sputum in the Diagnosis of Occupational Asthma
- 11.6. High Molecular Weight Agents
- 11.7. Low Molecular Weight Agents
- 11.8. Occupational Eosinophilic Bronchitis and Occupational Allergic Pneumonitis
- 11.9. Professional dermatoses. Classification and Description
- 11.10. Diagnosis of Occupational Dermatoses

#### Module 12. Miscellaneous

- 12.1. Anaphylaxis
- 12.2. Telemedicine and Social Media in the Field of Allergology
- 12.3. Pharmaceuticals in Development in the Field of Allergology
- 12.4. Associationism in Allergology



The theoretical phase of this program will be taught 100% online and interactive from a high performance platform designed by TECH"





## tech 36 | Clinical Internship

The Internship Program consists of a 3-week clinical internship, from Monday to Friday, with 8 consecutive hours of practical training with an attending specialist. This internship will allow to see real patients alongside a team of reference professionals applying the most innovative diagnostic procedures and planning the latest generation of therapy for each pathology.

In this Internship Program, the activities are aimed at developing and perfecting the skills necessary for the provision of healthcare in areas and conditions that require a high level of qualification, and which are oriented to the specific training for the exercise of the activity, in an environment of safety for the patient and high professional performance.

It is undoubtedly an opportunity to learn by working in the innovative hospital of the future where real-time health monitoring of patients is at the center of the digital culture of its professionals.

The practical part will be performed with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal skills for the practice of medicine (learning to be and learning to relate).

The procedures described below will be the basis of the practical part of the program, and its implementation is subject to both the suitability of patients and the availability of the center and its workload, being the proposed activities the following:



The practical training of this program will broaden your competences for the intervention and management of allergic patients with food, skin and respiratory pathologies"



# Clinical Internship | 37 **tech**

Module	Practical Activity
In vivo diagnostic techniques in allergic diseases	Indicate Skin Prick Test studies to patients with suspected allergy to pneumoallergens
	Apply Prick-Prick testing (dermal, deeper route) to patients with possible food allergies
	Implement epicutaneous tests such as the Patch test and Fotopatch test for pollen and dust mite allergies
	Perform oral challenge tests for drugs and foods that can cause allergies
	Use nasal provocation tests to evaluate the reaction of mucus to allergens in dust, pollen and others of environmental origin
	Diagnose other allergic reactions by conjunctival provocation tests
In vitro diagnostic techniques for allergic diseases	Perform respiratory function tests to prevent bronchial asthma and determine bronchial brondilation
	Indicate active anterior rhinomanometry to measure airflow and nasal fossa pressure during breathing
	Apply the FeNo (exhaled nitric oxide) test to indirectly measure the degree of airway inflammation
	Test for specific IgE antibodies, cellular mediators of inflammation and mediators of anaphylaxis
	Use of molecular diagnostic techniques by components for allergic diseases
Main pharmacological groups for the treatment of allergic pathology	Use of beta-lactam antibiotics for different allergic pathologies
	Treating allergies with nonsteroidal anti-inflammatory drugs
	Indicate Anticoagulants for patients with severe respiratory allergies
	Applying proton pump inhibitors to combat allergies
	Diagnose pseudoallergic and idiosyncratic reactions to drugs
Epidemiology, diagnosis and treatment of respiratory allergic diseases	Perform endoscopic nasosinusal surgery for nasosinusal polyposis
	Indication of biologic drugs in the treatment of asthma
	Treating asthma by thermoplasty
	Apply arterial blood gases and bronchoscopy to patients with eosinophilic bronchitis
	Use antibiotic therapies against the fungus causing allergic bronchopulmonary aspergillosis
Immunodeficiencies in Allergology and the future of the specialty	Perform tests to measure Alpha 1 Antitrypsin deficiency to prevent diseases such as emphysema and chronic obstructive pulmonary disease (COPD)
	Treating cutaneous mastocytosis through state-of-the-art antihistamine therapies
	Measuring D-xylose absorption in the laboratory for signs of celiac disease
	Indicate Immunotherapy with peptides with different allergic pathologies
	Apply Immunotherapy, combined with biological drugs, to stop allergic rhinitis and asthma

## **Civil Liability Insurance**

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this educational entity undertakes to take out civil liability insurance to cover any eventuality that may arise during the stay at the internship center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. In this way, the professional will not have to worry in case he/she has to face an unexpected situation and will be covered until the end of the practical program at the center.



## **General Conditions of the Internship Program**

The general terms and conditions of the internship agreement for the program are as follows:

- 1. TUTOR: During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.
- **2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.
- 3. ABSENCE: If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

- **4. CERTIFICATION**: Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.
- **5. EMPLOYMENT RELATIONSHIP:** the Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.
- **6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed
- 7. DOES NOT INCLUDE: The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.







# tech 42 | Where Can | Do the Clinical Internship?

The student will be able to take the practical part of this Hybrid Professional Master's Degree in the following centers:



## Hospital HM Modelo

Country La Coruña Spain

Address: Rúa Virrey Osorio, 30, 15011, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Anaesthesiology and Resuscitation - Palliative Care



## Hospital HM Rosaleda

Country La Coruña Spain

Address: Rúa de Santiago León de Caracas, 1, 15701, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Hair Transplantation - Orthodontics and Dentofacial Orthopedics



## Hospital HM San Francisco

Country City Spain León

Address: C. Marqueses de San Isidro, 11, 24004. León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

Update in Anesthesiology and Resuscitation Trauma Nursing



### Hospital HM Regla

Country City Spain León

Address: Calle Cardenal Landázuri, 2. 24003. León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Update on Psychiatric Treatment in Minor Patients



## **Hospital HM Nou Delfos**

Country Spain Barcelona

Address: Avinguda de Vallcarca, 151, 08023 Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Aesthetic Medicine - Clinical Nutrition in Medicine



## **Hospital HM Madrid**

Country City Spain Madrid

Address: Pl. del Conde del Valle de Súchil, 16, 28015. Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain

#### Related internship programs:

- Palliative Care

- Anaesthesiology and Resuscitation



## Hospital HM Montepríncipe

Country Spain Madrid

Address: Av. de Montepríncipe, 25, 28660, Boadilla del Monte, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

### Related internship programs:

- Palliative Care

Aesthetic Medicine



## **Hospital HM Torrelodones**

Country Spain Madrid

Address: Av. Castillo Olivares, s/n, 28250, Torrelodones, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

Anaesthesiology and Resuscitation - Palliative Care

## Where Can I Do the Clinical Internship? | 43





## **Hospital HM Sanchinarro**

Country City Madrid Spain

Address: Calle de Oña, 10, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Anaesthesiology and Resuscitation - Palliative Care



## Hospital HM Puerta del Sur

Country City Madrid Spain

Address: Av. Carlos V, 70, 28938, Móstoles, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Palliative Care - Clinical Ophthalmology



#### Policlínico HM Cruz Verde

Country City Madrid Spain

Address: Plaza de la Cruz Verde, 1-3, 28807, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Advanced Clinical Podiatry - Optical Technologies and Clinical Optometry



#### Policlínico HM Distrito Telefónica

Country City Spain Madrid

Address: Ronda de la Comunicación. 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Optical Technologies and Clinical Optometry - General and Digestive System Surgery



#### Policlínico HM La Paloma

Country Spain Madrid

Address: Calle Hilados, 9, 28850. Torrejón de Ardoz, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Advanced Operating Room Nursing - Orthodontics and Dentofacial Orthopedics



## Policlínico HM Moraleja

Country Spain Madrid

Address: P.º de Alcobendas, 10, 28109. Alcobendas, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Rehabilitation Medicine in Acquired Brain Injury Management



#### Policlínico HM Sanchinarro

Country City Spain Madrid

Address: Av. de Manoteras, 10, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Gynecological Care for Midwives - Nursing in the Digestive Tract Department



### Policlínico HM Imi Toledo

Country City Spain Toledo

Address: Av. de Irlanda, 21, 45005, Toledo

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

#### Related internship programs:

- Electrotherapy in Rehabilitation Medicine - Hair Transplantation





## tech 46 | Methodology

## 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.



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:

- 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.



## Methodology | 49 tech

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.

## tech 50 | Methodology

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.

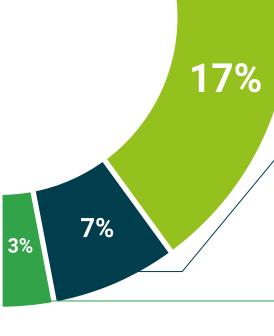
The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



## **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.









## tech 54 | Certificate

This program will allow you to obtain your **Hybrid Professional Master's Degree in Allergology** 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.

Mr./Ms. \_\_\_\_\_\_with identification document \_\_\_\_\_\_has successfully passed and obtained the title of:

Hybrid Professional Master's Degree in Allergology

This is a program of 1,620 hours of duration equivalent to 65 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

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.

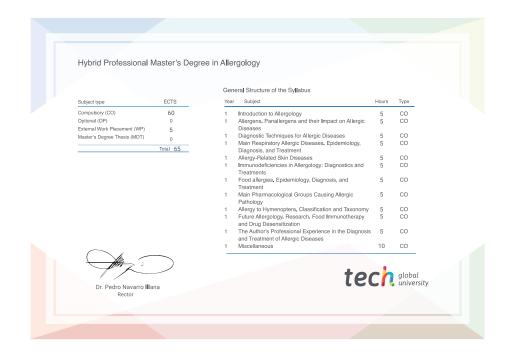
Title: Hybrid Professional Master's Degree in Allergology

Course Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

Recognition: **60 + 5 ECTS Credits** 



<sup>\*</sup>APOSTILLA DE LA HAYA. EN CASO DE QUE EL ALUMNO SOLICITE QUE SU TÍTULO EN PAPEL RECABE LA APOSTILLA DE LA HAYA, TECH GLOBAL UNIVERSITY REALIZARÁ LAS GESTIONES OPORTUNAS PARA SU OBTENCIÓN, CON UN COSTE ADICIONAL.

health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment



# Hybrid Professional Master's Degree

Allergology

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Global University

60 + 5 ECTS Credits

