

# Advanced Master's Degree Allergology





## Advanced Master's Degree Allergology

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

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

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Skills

---

*p. 18*

04

Course Management

---

*p. 24*

05

Structure and Content

---

*p. 34*

06

Methodology

---

*p. 48*

07

Certificate

---

*p. 56*

# 01

# Introduction

Recent epidemiological studies show a worrying increase in the rates of allergic population in virtually all parts of the world. Whether respiratory, food or other allergies, the number of patients with these conditions is expected to increase in the coming decades. This opens up a preferential field of action for specialists in the area, with important advances such as those made in molecular diagnostics or immunotherapy. In view of this situation, TECH has prepared a very complete program that compiles the most outstanding novelties, based on the clinical experience of renowned immunologists and experts. A unique academic opportunity to update in Allergology in a 100% online way, without presential classes or fixed schedules.





“

*Get up to date on the main allergens and diagnostic techniques, including Prick test, Prick by Prick and epicutaneous tests"*

Various factors such as pollution, changes in eating habits, overweight or a more sedentary lifestyle have contributed significantly to the progressive increase in the number of people suffering from some type of allergy. This trend is worrying, especially in the elderly and children, where certain food or pharmacological allergies can be more sensitive.

In fact, the most common allergies are respiratory, food and contact allergies, with particular emphasis on reactions to egg and milk protein, mites, pollens, metals and some types of topical medications. This situation has boosted innovation and research in the field, with outstanding advances in areas such as immunotherapy or diagnostic devices. Specialists are therefore called upon to an almost continuous updating process in view of the growth of both the number of cases to be treated and the methodologies used to treat them.

It is at this juncture that TECH's Advanced Master's Degree in Allergology is justified, as it compiles the most relevant scientific postulates and developments in both common allergies in adulthood and those treatments and approaches more specific to the pediatric area. The specialist will have access to a myriad of multimedia resources, complementary readings, analysis of real cases and more material with which to be updated in a reliable way in epidemiology, approaches, diagnosis and the most modern allergological research.

The entire syllabus has been developed by a team of experts with extensive experience in the care of allergic patients, working in major clinical centers and hospitals. This is essential to provide the entire syllabus with the necessary practical vision, giving the specialists not only the most innovative work methodology but also the way to apply it and carry it out in the real clinical field.

A completely online and flexible program, without the usual ties of face-to-face classes or fixed schedules. It is the specialists who decide how to distribute the entire teaching load, being able to adapt it to their own work and personal responsibilities. To this end, the entire syllabus is available on the Virtual Campus for downloading from any device with an Internet connection.

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

- ♦ The development of case studies presented by experts in allergies
- ♦ 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
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Its special emphasis on innovative methodologies in allergy diagnosis and management
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*It delves into the most prevalent fields of Allergology today, highlighting food, respiratory and pharmacological allergens"*

“

*You will have a Virtual Campus available 24 hours a day, being able to choose when, where and how to take on the entire teaching load”*

It includes in its teaching staff professionals belonging to the field of pediatrics, who pour into this program the experience of their work, in addition to recognized specialists of reference 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 an immersive learning experience designed to prepare for real-life situations.

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

*Delve into the future of Allergology at the research level in this TECH Advanced Master's Degree.*

*Benefit from high quality multimedia material, rich in details on the most relevant allergic cases in the clinical setting.*



02

# Objectives

As Allergology is a field of growing opportunities both scientifically and clinically, the objective of this Advanced Master's Degree is to offer a comprehensive and detailed review of all the most relevant areas of this field. Both in adults and pediatric patients, the specialists will delve into the areas of immunology, allergy and diagnosis of greater rigor and validity, provided by a complete teaching team of experts in the field.







“

*The most important novelties in Allergology,  
compiled in a single academic qualification  
at the forefront of the clinical field”*



## General Objectives

---

- ♦ Defining Allergology in the 21st Century
- ♦ Recognize new forms of allergic disease conditions
- ♦ Review the latest international practices in allergology
- ♦ Learn the new international lines of research in allergology
- ♦ Become familiar with new approaches
- ♦ Recognize the importance of allergic disease in primary care morbidity
- ♦ Recognize allergens for appropriate preventive intervention and reduce the risk of exposure as a priority preventive measure
- ♦ Have a comprehensive view of the most prevalent allergic pathologies in childhood
- ♦ Study the basis, physiopathology, diagnosis and treatment of each pathology
- ♦ Have the theoretical basis of complementary tests and their correct interpretation
- ♦ Achieve adequate knowledge of component diagnosis in food and respiratory allergy
- ♦ Know to manage asthma in the child, making a correct diagnosis and an appropriate treatment approach





## Specific Objectives

---

### 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. Allergic Disease

- ◆ Gain knowledge about the cells involved in the immune system, and the inflammatory mediators related to allergic diseases
- ◆ Understand the mechanisms of allergen recognition and allergic inflammatory response
- ◆ Know the main primary immunodeficiencies, and be able to suspect them and make a diagnostic orientation
- ◆ Become familiar with the terminology used in allergic pathology
- ◆ Delve into available *in vivo* and *in vitro* tests
- ◆ Delve into the mechanisms by which tolerance is achieved

### **Module 3. 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 4. 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 phenotype patients
- ♦ Understand and apply in daily clinical practice the traditional *in vivo* techniques for the diagnosis of allergic diseases: *Prick test*, *Prick by Prick*, *Epicutaneous tests*
- ♦ Know and apply modern *in vitro* 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 5. Main Respiratory Allergic Diseases. Epidemiology, Diagnosis, and Treatment**

- ♦ Review the allergic epidemiology of the 20th century.. 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 6. 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

**Module 7. 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 8. 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 9. Food Allergy and the Most Frequent Food Allergens in the Pediatric Age Group**

- ♦ Analyze how an oral food tolerance test is performed
- ♦ Delve into the indications for restrictive diets and active treatments for food allergy
- ♦ Get to know the pathways of sensitization and tolerance to food allergens
- ♦ Be able to comprehensively care for the patient with cow's milk protein allergy
- ♦ Be able to comprehensively care for the patient with egg allergy
- ♦ Get to know the common non-IgE-mediated food allergies of onset in infancy
- ♦ Get to know the possible primary prevention measures in food allergy

**Module 10. 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 11. Drug Allergies

- ♦ Delve into the different mechanisms of hypersensitivity to drugs and their clinical manifestations
- ♦ Analyze how drugs act as allergens
- ♦ Gain knowledge about the technique and interpretation of *in vivo* drug tests: skin tests, intradermal tests, *patch test*
- ♦ Analyze the main reasons for suspicion of drug allergy in pediatrics
- ♦ Know how to make a correct diagnosis of NSAID allergy
- ♦ Know the difference between allergy and idiosyncrasy, and their peculiarities
- ♦ Delve into the alternatives that exist in pediatrics as anti-inflammatory drugs in patients allergic to NSAIDs
- ♦ Know how to diagnose other antibiotics frequently used in pediatrics
- ♦ Delve into the bases and indications to perform desensitization to drugs, knowing the existing protocols for its realization and how to assess the risk to which we expose the patient
- ♦ Perform an etiological diagnostic approach in severe reactions

### Module 12. 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 13. Allergic Cutaneous, Systemic and Respiratory Manifestations

- ♦ Delve into the pathophysiology of acute urticaria and angioedema
- ♦ Delve into the most frequent causes of acute urticaria and angioedema in the pediatric age group
- ♦ Analyze the steps of treatment in chronic urticaria
- ♦ Know how to define recurrent angioedema and make a correct differential diagnosis
- ♦ Get to know the most frequent causes of recurrent angioedema in pediatric age
- ♦ Know how to suspect the diagnosis of hereditary angioedema due to C1 inhibitor deficiency and perform a correct screening
- ♦ Gain knowledge about the treatment possibilities in hereditary angioedema due to C1 inhibitor deficiency
- ♦ Early recognition of anaphylaxis
- ♦ Know how to give recommendations to the patient with anaphylaxis
- ♦ Gain knowledge about the manifestations of mastocytosis in the pediatric age
- ♦ Delve into the pathophysiology of exercise-induced anaphylaxis
- ♦ Know how to recognize this condition, its possible causes, and give appropriate recommendations to the patient
- ♦ Recognize asthma attacks and know how to assess their severity at different ages

**Module 14. Other Allergens Causing Food Allergy in Childhood**

- ♦ Gain knowledge about the prevalence of the different food allergies
- ♦ In-depth study of the characteristics of the different allergenic sources
- ♦ Get to know the natural history of food allergies in the pediatric age
- ♦ Gain knowledge about how to perform and interpret a diagnosis by components in nut and seed allergy
- ♦ Analyze the different patterns of sensitization to fruits and vegetables
- ♦ Know how to make a correct diagnosis of cereal allergy
- ♦ Identify possible adverse effects of some food additives, and differentiate them from allergic reactions
- ♦ Gain knowledge about the pathophysiology of eosinophilic esophagitis, the possible treatment routes and its relationship with food allergy in the pediatric age

**Module 15. Asthma in the Infant and Young Child**

- ♦ Gain knowledge about what we call asthma in the young child, its pathophysiology and natural history
- ♦ Delve into the different developmental and trigger phenotypes and their implications for the management of asthma in children
- ♦ Get to know the prevalence of asthma in the young child, and the factors that promote it
- ♦ Delve into the differential diagnosis and the tests necessary to rule out certain pathologies
- ♦ Know the correct use of inhalers

**Module 16. Asthma in Older Children and Adolescents**

- ♦ Delve into the pathophysiology of asthma, through the study of inflammatory cells and mediators
- ♦ Delve into the current classification of phenotypes in asthma
- ♦ Be able to make a correct diagnosis of asthma in the older child
- ♦ Gain knowledge about the complementary tests that support the diagnosis of asthma in the older child
- ♦ Get to know which are the pathologies that usually coexist in the patient with asthma and their approach

**Module 17. Allergen-Specific Immunotherapy (AIT)**

- ♦ Get to know the history and evolution of allergen-specific immunotherapy (AIT)
- ♦ Delve into the mechanism of action by which they produce tolerance
- ♦ Gain knowledge about the content of allergenic vaccines, and the role of each of the components
- ♦ Delve into the different routes and patterns of administration, as well as the available allergens
- ♦ Analyze future developments in immunotherapy and innovations in this line of treatment

**Module 18. Eye-Nasal Allergy**

- ♦ Delve into the impact of allergic rhinoconjunctivitis on the patient and society
- ♦ Further treatment of rhinoconjunctivitis according to the ARIA guidelines
- ♦ Get to know the geographic and climatic distribution of the different allergens
- ♦ Be able to make a diagnosis by components to discern cross reactivities from real ones

### Module 19. Atopic Dermatitis

- ♦ Be able to make a diagnosis of atopic dermatitis
- ♦ Delve into clinical forms throughout the lifespan
- ♦ Learn about the available scales for severity assessment
- ♦ Perform health education advice for the care of atopic skin
- ♦ Delve into the possible complications of atopic dermatitis and its treatment
- ♦ Become familiar with the different drugs and routes of administration used in atopic dermatitis

### Module 20. 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 21. 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 22. 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

“

*You will examine the methodology and clinical practice currently most effective for the major allergic diseases”*

# 03 Skills

The competences that a specialist in the field of Allergology must develop are multiple, both in the diagnostic and therapeutic field and even in research. Therefore, throughout this Advanced Master's Degree, the relevance of all these competencies for a clinical practice of the highest level will be discussed, providing plenty of practical examples and real analysis that contextualize all the information covered.





“

*Incorporate the most avant-garde diagnostic and therapeutic methods into your daily practice, endorsed by the teaching staff of the Advanced Master's Degree”*



## General Skills

---

- ♦ 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
- ♦ Carry out a prophylactic intervention in terms of allergen recognition and avoidance
- ♦ Effectively address all aspects of Pediatric Allergology
- ♦ Use the most up-to-date pathophysiological bases in allergic diseases
- ♦ Have the most up-to-date allergy diagnosis and treatment available

“

*Develops the skills necessary to successfully manage audiovisual companies”*





## 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 mechanisms
- ♦ Recognize, classify, and describe the different allergens
- ♦ 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
- ♦ Use of new drugs in skin pathologies: dermatitis, urticaria, edema, etc
- ♦ Create a treatment protocol and master the dosages and indications of traditional and state-of-the-art drugs in allergic skin diseases
- ♦ 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
- ♦ 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
- ♦ 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
- ♦ 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
- ♦ Perform a complete history and physical examination looking for stigmata of atopy

- ♦ Analyze the techniques for the evaluation of respiratory function in the child, being able to interpret them correctly
- ♦ Recognize acute urticaria and angioedema and perform correct treatment
- ♦ Define chronic urticaria, assess its severity and its impact on the patient's quality of life
- ♦ Perform differential and causal diagnosis in the child with chronic urticaria
- ♦ Perform a correct study of the patient with idiopathic anaphylaxis
- ♦ Treat asthma attack according to the latest recommendations
- ♦ Treat anaphylaxis in both in-hospital and out-of-hospital settings
- ♦ Perform skin tests with extract and with fresh food, knowing the technique and the correct interpretation of the tests
- ♦ Proper history taking in the pediatric patient with suspected food allergy
- ♦ Get to know the different protocols of oral immunotherapy to cow's milk and egg
- ♦ Perform and interpret a diagnosis by components in allergy to shellfish, fish, legumes, fruits and vegetables
- ♦ Make dietary recommendations in patients with suspected food allergy
- ♦ Suspect eosinophilic esophagitis and know its diagnostic criteria
- ♦ Perform the care of the patient with eosinophilic esophagitis in conjunction with the pediatric gastroenterologist
- ♦ Perform a proper controlled drug exposure test
- ♦ Correctly diagnose suspected beta-lactam allergy in a child
- ♦ Perform a cross-reactivity profile on the patient in order to develop a search for treatment alternatives
- ♦ Recognize serious reactions, infrequent in children, such as DRESS syndrome or Stevens-Johnson syndrome, among others
- ♦ Recommend and teach different inhalation techniques according to the age of the patient





- ◆ Diagnose asthma in infants and preschoolers
- ◆ Get to know the GINA and GEMA guidelines and their stepwise treatment
- ◆ Analyze how inhaled therapy works and the factors that condition pulmonary deposition
- ◆ Perform differential diagnosis of asthma in this age fraction
- ◆ Be able to identify and manage severe asthma in the child
- ◆ Know and manage the stepwise treatment of asthma, and the assessment of control
- ◆ Analyze approved biologic therapies for the treatment of severe asthma in children
- ◆ Assess response and carry out activities to improve therapeutic adherence
- ◆ Know the factors related to possible adverse reactions in order to be able to prevent them
- ◆ Get to know the pathophysiology and etiopathogenesis of allergic rhinoconjunctivitis
- ◆ Be able to make a diagnosis and differentiate it from other rhinitis due to other causes
- ◆ Analyze particle characteristics and their relationship to potential clinical
- ◆ Perform maintenance treatment to prevent exacerbations
- ◆ Treat the exacerbation of atopic dermatitis
- ◆ Know when it is recommended to screen for food allergy as a causal factor in atopic dermatitis, and how to do it
- ◆ Analyze the differential characteristics of contact dermatitis and the most frequent causes in children

# 04

# Course Management

The professionals in charge of the elaboration of this Advanced Master's Degree are experts in Allergology. Coming from different areas such as Pediatrics, Immunology and Allergology, they have poured into all the didactic content their theoretical and practical knowledge on the subject. In this way, the specialists will deepen both in the most relevant scientific theory and analysis as well as in the way to bring it to the clinical practical field, backed by the extensive experience of all teachers.





“

*You will be supported by an exceptional teaching staff with whom you will be able to consult all your doubts directly"*

## International Guest Director

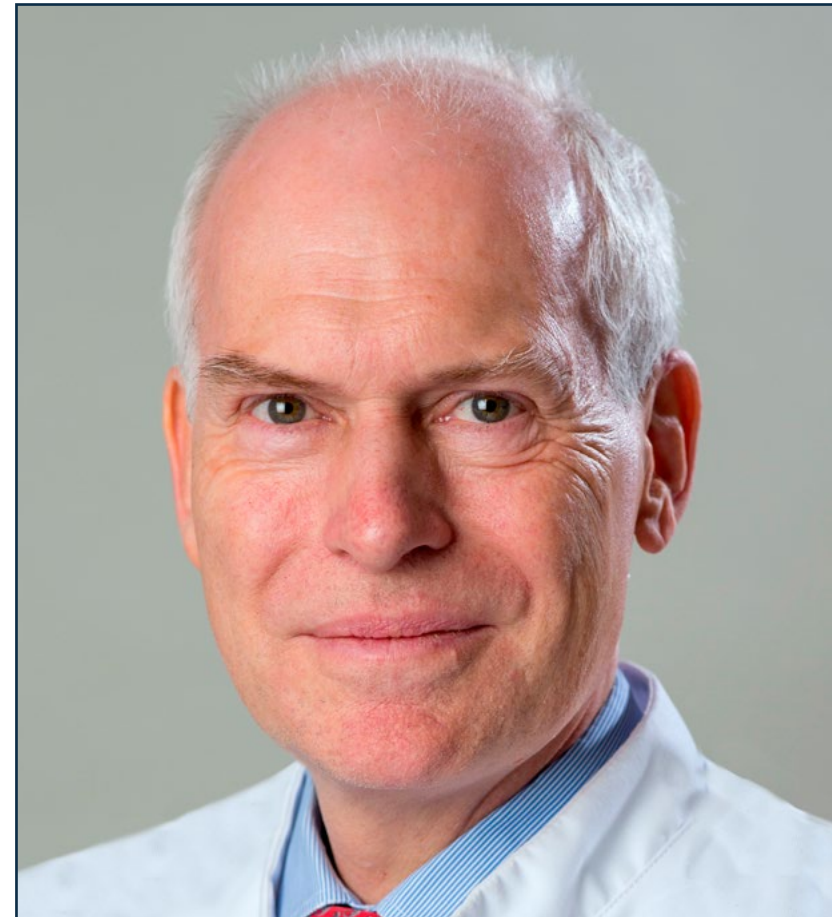
Dr. Torsten Zuberbier's outstanding professional and research career has left an indelible mark on the medical management of allergic diseases. The expert's healthcare competencies and prestige have enabled him to serve for almost two decades as President of the Foundation of the European Center for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

- ♦ Assistant Physician of the Pediatrics Department in the Allergy and Pediatric Pulmonology Section of the 12 de Octubre Hospital
- ♦ Collaborating Professor at the Complutense University of Madrid
- ♦ Degree in Medicine from the Complutense University of Madrid
- ♦ MIR Specialist in Pediatrics and its specific areas at the La Fe University Hospital, Valencia



### Dr. Fernández Nieto, María del Mar

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

## Professors

### Dr. Acevedo Caballero, Nathalie

- ♦ Medical Immunologist, Institute of Immunological Research, Cartagena, Colombia
- ♦ PhD in Medical Sciences, Karolinska Institute

### 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 University Hospital of South Manchester (England)
- ♦ Degree in Medicine from the Complutense University of Madrid
- ♦ Member of SEAIC, EAACI, AAAAI, ERS

### Dr. Gómez Cardeñosa, Aída

- ♦ Physician specializing in Allergology
- ♦ Adjunct Physician of the Allergy Service Fundación Jiménez Díaz
- ♦ Medical Advisor at LETI Pharma
- ♦ Degree in Medicine from the Complutense University of Madrid
- ♦ Collaborating reviser for the *Journal of Investigational Allergology and Clinical Immunology*
- ♦ Member of the Multidisciplinary Unit of Asthma. Fundación Jiménez Díaz, Spanish Society of Allergology (SEAIC)

### Dr. Jara, Pamela Francesca

- ♦ Member of the Medical Association of Rhineland-Westphalia Germany
- ♦ Allergy Physician trained at the Jiménez Díaz Foundation. Spain
- ♦ Physician - Surgeon from San Agustín National University Peru
- ♦ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Member of the *European Academy of Allergy and Clinical Immunology*
- ♦ Member of the Society of Allergy and Clinical Immunology of Madrid, Castilla La Mancha
- ♦ Publications P Jara-Gutiérrez, et al. "Comparison of impulse oscillometry and spirometry for detection of airway hyperresponsiveness to methacholine, mannitol, and eucapnic voluntary hyperventilation in children" *Pediatr Pulmonol.* 2019 Aug;54(8):1162-1172. doi: ppul.24409. Epub 2019 Jun 18

### Dr. Dávila Fernández, Galicia

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

**Dr. Seoane Reula, Elena**

- ♦ Head of the Immunodeficiency Service at the Gregorio Marañón Maternity and Children's Hospital
- ♦ Immunologist. Gregorio Marañón Hospital. Madrid
- ♦ AEDIP Medical Advisor
- ♦ Allergology Attending Physician, Hospital Infanta Leonor
- ♦ Allergist. Doce de Octubre Hospital. Madrid
- ♦ Medical collaborator at the John Radcliffe Hospital associated with the University of Oxford
- ♦ PhD in Medicine and Surgery from the University of Cadiz
- ♦ Master's Degree in Pediatrics from the University of San Jorge de Zaragoza
- ♦ Member of AEDIP, SEAIC, SEICAP, GISEI, ESID

**Dr. Rojas Pérez-Ezquerro, Patricia**

- ♦ Doctor Specialist in Allergology, Gregorio Marañón General University Hospital
- ♦ Specialist in Allergology at Medical Writers 5.0
- ♦ Specialist in Allergology at the Red Cross Central Hospital
- ♦ Specialist in Allergology at the Alcorcón Foundation University Hospital
- ♦ Master's degree in clinical management, medical and healthcare management from CEU-UCH
- ♦ MIR in Allergology at Gregorio Marañón General University Hospital
- ♦ Member of SEAIC

**Dr. Garriga Baraut, Teresa**

- ♦ Specialist in Allergology at Valle de Hebron Hospital
- ♦ Resident Allergology Physician at Valle de Hebron Hospital
- ♦ Doctorate in Medicine at the Autonomous University of Barcelona
- ♦ Degree in Medicine from the University of Barcelona



**Dr. Quevedo Teruel, Sergio**

- ♦ Specialist Pediatrician at Severo Ochoa Hospital
- ♦ PhD in Advances in Pediatrics from the Autonomous University in Madrid
- ♦ Doctorate in Social and Health Research at the Alfonso X El Sabio University
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Master's Degree of Neonatology of the Seneo at the Catholic University of Valencia San Vicente Martir

**Dr. Valderrama Arnay, Sara**

- ♦ Specialist in Pediatric Allergy and Pulmonology at the Móstoles University Hospital
- ♦ Honorary Tutor at Rey Juan Carlos University
- ♦ Degree in Medicine from the Complutense University of Madrid
- ♦ Specialty in Pediatric Allergy and Pulmonology at the 12 de Octubre University Hospital

**Dr. Muñoz Archidona, Cristina**

- ♦ Pediatric Specialist in outpatient Allergology and Pediatric Pulmonology at the Móstoles University Hospital
- ♦ Responsible for and coordinator of outpatient consultations in Pediatric Pulmonology at the General Hospital of Villalba
- ♦ Pediatric Specialist at the Ramón y Cajal University Hospital and Henares University Hospital
- ♦ Degree in Medicine from the Autonomous University Madrid
- ♦ Specialty in Pediatrics at the Severo Ochoa University Hospital
- ♦ Master's Degree in Pediatric Emergencies at the CEU Cardenal Herrera University
- ♦ Expert in Pediatric Trauma, Pediatric Critical Patient, Pediatric Emergencies and Pediatric Vital Emergencies at CEU Cardenal Herrera University

**Dr. Mesa del Castillo Payá, María**

- ♦ Specialist in Pediatrics and Allergology at El Escorial University Hospital
- ♦ Vice President of SEICAP, Spanish Society of Clinical Immunology, Allergy and Pediatric Asthma
- ♦ Hospital Tutor for Family and Community Medicine Residents at the El Escorial University Hospital
- ♦ Specialty via MIR in Allergology and Clinical Immunology at the San Carlos Clinical Hospital
- ♦ Specialty via MIR in Pediatrics and Specific Areas at the Ramón y Cajal Hospital

**Dr. García Magán, Carlos**

- ♦ Specialist in Pediatrics at the Santiago de Compostela Hospital
- ♦ Degree in Medicine from the University of Santiago de Compostela
- ♦ Specialty in Pediatrics at the Santiago de Compostela Hospital
- ♦ Master's Degree in Genetics, Nutrition and Environmental Conditional Factors for Growth and Development
- ♦ Master's Degree in Neonatology

**Dr. Canals Candela, Francisco José**

- ♦ Associate Professor of Pediatrics at the Miguel Hernández d'Elx University
- ♦ Specialist in Pediatrics and Head of the Pediatric Allergology Clinic at the General University Hospital of Elche
- ♦ Specialist in Pediatrics at the ASISA Elche Medical Center
- ♦ Specialist in Pediatrics at the Denia Hospital and the General University Hospital of Elda
- ♦ Doctorate in Medicine from the University of Murcia
- ♦ Degree in Medicine in the University of Miguel Hernández de Elche
- ♦ Specialist in Pediatrics and its specific areas at the Elche General University

**Dr. Cortés Álvarez, Nuria**

- ♦ Pediatrician attached to the Pediatric Allergy Section of the Mútua Terrassa University Hospital
- ♦ Pediatrician on duty in Neonatology and Pediatrics at the Mútua Terrassa University Hospital
- ♦ Pediatrician in Pediatric Allergy consultation at the Children's Hospital of Barcelona
- ♦ Pediatrician
- ♦ D. in Pediatrics from the University of Barcelona
- ♦ Degree in Medicine and Surgery from the University of Barcelona
- ♦ Specialty in Pediatrics and its Specific Areas via MIR at the Maternal-Children's Hospital of Vall d'Hebron
- ♦ Master's Degree in Pediatric Immunology and Allergy at the Sant Joan de Déu Hospital

**Dr. Morales Tirado, Ana**

- ♦ Specialist in Pediatrics at Ramón y Cajal University Hospital
- ♦ Specialist in Pediatrics at 12 de Octubre University Hospital, Móstoles Hospital and San Rafael Hospital
- ♦ Degree in Medicine from the Complutense University of Madrid

**Dr. Mansilla Roig, Beatriz**

- ♦ Specialist in Pediatric Allergology
- ♦ PhD in Medicine from the University of Valencia
- ♦ Specialist in Pediatrics and Specialized Areas Doctor Peset Hospital
- ♦ Master's Degree in Pediatrics in Primary Care by the Complutense University of Madrid
- ♦ Master's Degree in Pediatric Dermatology by CEU Cardenal Herrera University CEU Cardenal Herrera University (2020- 2021)







**Dr. Tortajada Girbés, Miguel**

- ♦ Head of Pulmonology and Pediatric Allergy at the La Fe University and Polytechnic Hospital of Valencia
- ♦ Doctor in Medicine and Surgery from the Faculty of Medicine of the University of Valencia with the mention of "Excellent Cum Laude"
- ♦ European Accreditation in Pediatric Allergy and Clinical Immunology by the European Academy of Allergology and Clinical Immunology (EAACI), Spanish Accreditation in Pediatric Allergy, Clinical Immunology, Asthma and Pulmonology by the Spanish Association of Pediatrics (AEP)

**Dr. Navío Anaya, María**

- ♦ Specialist in Pediatrics and its specific areas at Doctor Peset University Hospital, Valencia
- ♦ Degree in Medicine. Jaime Primero University. Castellón
- ♦ Some of its professional associations include the Official College of Physicians of Valencia, the Valencian Society of Pediatrics, the Spanish Association of Pediatrics, and the Spanish Association of Pediatrics

# 05

## Structure and Content

The entire Advanced Master's Degree has been developed following the pedagogical methodology of *Relearning*, based on the reiteration of content and in which TECH is a pioneer. Thus, the most relevant key concepts in the field of Allergology are given to the specialist in a natural way throughout the program, resulting in a much more effective learning and saving a considerable number of hours of study.





“

*Download all the content available in the Virtual Campus and compile a complete and essential reference guide in the field of Allergology”*

## Module 1. Introduction to Allergology

- 1.1. Introduction. Terminology. Atopy and allergy
  - 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. Prevalence of allergic diseases
  - 1.3.1. Prevalence
  - 1.3.2. Pharmacoeconomics
- 1.4. Immunological basis of allergic diseases. Classification of hypersensitivity reactions
  - 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. Immunological 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. Immunoglobulin E: Features. 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. Allergic Disease

- 2.1. Epidemiology
  - 2.1.1. Prevalence of Allergic Disease
  - 2.1.2. Genetic, Epigenetics and Environmental Factors
- 2.2. Immune System Development
  - 2.2.1. Fetal Immunity
  - 2.2.2. Immune System Maturation
- 2.3. Inborn Errors of the Immune System
  - 2.3.1. Main Primary Immunodeficiencies
  - 2.3.2. Warning Signs
  - 2.3.3. Allergic Manifestations
  - 2.3.4. Diagnostic Approximation
  - 2.3.5. Treatment
- 2.4. Allergic Sensitization
  - 2.4.1. Cells Involved
  - 2.4.2. Inflammatory Mediators
  - 2.4.3. Sensitization Pathways
- 2.5. Tolerance Mechanisms
  - 2.5.1. Factors Influencing the Achievement of Tolerance
  - 2.5.2. Immunological Basis
- 2.6. Atopic Gait
- 2.7. General Evaluation of the Allergic Patient
  - 2.7.1. General Medical Records
  - 2.7.2. Findings on Physical Examination Suggestive of Atopy
  - 2.7.3. General Notions of Diagnostic Tests in Allergy



- 2.8. Terminology
  - 2.8.1. Allergy. Sensitization
  - 2.8.2. Allergenic Source. Allergens. Cross-Reactivity
- 2.9. Molecular diagnosis
  - 2.9.1. Current Indications and Limitations
  - 2.9.2. Approach to Molecular Diagnostics
  - 2.9.3. Most Relevant Allergen Families
- 2.10. Respiratory Function Tests in Children
  - 2.10.1. Spirometry and Bronchodilation Test
  - 2.10.2. Bronchial Provocation Tests
  - 2.10.3. Tests for Measuring Eosinophilic Inflammation
  - 2.10.4. Others Diagnostic Methods

### Module 3. Allergens. Panallergens and their Impact on Allergic Diseases

- 3.1. Allergens. Types. Structure. Characterization and Purification of Allergens. Concept of Cross-Reactivity. Panallergens
- 3.2. Classification of the Main Environmental Allergens
- 3.3. Classification and Taxonomy of the Main Food Allergens
- 3.4. Classification and Description of the Main Skin Allergens
- 3.5. Allergic Reactions to Latex. Cross Allergenicity with Food. Latex Allergy Prevention Clinic
- 3.6. Description of Pollen-Food Syndromes: Classification, Description, Prevalence
- 3.7. Classification and Description of the Main Allergic Diseases of Drug Origin
- 3.8. Classification, Description, and Taxonomy of Animal Allergens
- 3.9. Classification, Description, and Taxonomy of Vespidae Allergens

#### Module 4. Diagnostic Techniques for Allergic Diseases

- 4.1. General Aspects of the Diagnosis of Allergic Diseases
  - 4.1.1. Basic Criteria
- 4.2. *In Vivo* Diagnostic Methods of Allergic Diseases: *Prick-test Prick Prick* Epicutaneous tests. Oral provocation tests
- 4.3. *In-Vitro* Methods of Allergic Diseases. Classification and Description
- 4.4. Molecular Diagnostics by Components in Pneumoallergen Allergic Respiratory Diseases: Pollens
- 4.5. Molecular Diagnostics by Components in Pneumoallergen Allergic Respiratory Diseases: Mites and Fungi
  - 4.5.1. Diagnostic techniques
- 4.6. Molecular Diagnostics by Components in Pneumoallergen Allergic Respiratory Diseases: Animals
  - 4.6.1. Diagnostic techniques
- 4.7. Molecular and Component-Based Diagnosis in Food Allergy
- 4.8. Molecular and Component-Based Diagnosis in Vespid Allergy
- 4.9. Basotest in the Diagnosis of Allergic Diseases
- 4.10. Induced Sputum in the Diagnosis of Respiratory Allergic Diseases
- 4.11. Apparatus in the Diagnosis of Allergic Diseases
- 4.12. Diagnosis of Comorbidities of Allergic Diseases: Obesity, Gastroesophageal Reflux Disease, and Sleep Disorders

#### Module 5. Main Respiratory Allergic Diseases. Epidemiology, Diagnosis, and Treatment

- 5.1. Allergic Rhinoconjunctivitis
- 5.2. Nasosinusual Polyposis
- 5.3. Asthma
  - 5.3.1. Definition and Classification
  - 5.3.2. Diagnosis and Treatment
- 5.4. ACOS Mixed Phenotype
- 5.5. Biological Drugs in the Treatment of Asthma
- 5.6. Thermoplasty in Asthma Treatment
- 5.7. Eosinophilic Bronchitis
- 5.8. Allergic Bronchopulmonary Aspergillosis. Extrinsic Allergic Alveolitis
- 5.9. Alpha 1 Antitrypsin Deficiency and Respiratory Allergic Pathology

#### Module 6. Allergy-Related Skin Diseases

- 6.1. Atopic Dermatitis
- 6.2. Chronic Spontaneous Urticaria
- 6.3. Angioedema
- 6.4. Urticarial-Vasculitis
- 6.5. Alpha 1 Antitrypsin Deficiency and Skin Diseases in Allergology
- 6.6. Biological Drugs in the Treatment of Atopic Dermatitis
- 6.7. Biological Drugs in the Treatment of Chronic Urticaria
- 6.8. Biological Drugs in the Treatment of Angioedema

#### Module 7. Immunodeficiencies in Allergology: Diagnostics and Treatments

- 7.1. Primary Immunodeficiencies in Pediatric Patients
- 7.2. Primary Immunodeficiencies in Adult Patients
- 7.3. Organ-Specific Autoimmune Diseases
- 7.4. Systemic Autoimmune Diseases
- 7.5. Alpha 1 Antitrypsin Deficiency
- 7.6. Cutaneous Mastocytosis
- 7.7. Systematic Mastocytosis
- 7.8. Celiac Disease

#### Module 8. Food allergies. Epidemiology, Diagnosis, and Treatment

- 8.1. Food Allergy. Classification and Taxonomy
- 8.2. Fish Allergy
- 8.3. Seafood Allergy
- 8.4. Fruit and Nut Allergy
- 8.5. Legume Allergy
- 8.6. Allergy to Other Plant-Based Foods
- 8.7. Gluten Allergy
- 8.8. Allergy to Additives and Preservatives

## Module 9. Food Allergy and the Most Frequent Food Allergens in the Pediatric Age Group

- 9.1. Approach to the Patient with Food Allergy
  - 9.1.1. Medical History
  - 9.1.2. Diagnostic Generalities
    - 9.1.2.1. Skin Tests
    - 9.1.2.2. Oral Tolerance Tests
    - 9.1.2.3. In Vitro Determination
  - 9.1.3. Treatment of Food Allergy
    - 9.1.3.1. Avoidance
    - 9.1.3.2. Active Treatments
- 9.2. Food Allergens Approach
  - 9.2.1. General Aspects
  - 9.2.2. Protein Stability
  - 9.2.3. Effects of Processing
  - 9.2.4. The Digestive System as an Immune Organ
- 9.3. Allergy to Cow's Milk Proteins
  - 9.3.1. Epidemiology
  - 9.3.2. Natural History
  - 9.3.3. Diagnosis
- 9.4. Avoidance Therapy in Cow's Milk Protein Allergy
  - 9.4.1. Hydrolyzed Formulas
  - 9.4.2. Vegetable Formulas
- 9.5. Oral Immunotherapy to Cow's Milk Proteins
  - 9.5.1. Indications
  - 9.5.2. Rapid Protocol
  - 9.5.3. Slow Protocol for Anaphylactic Patients

- 9.6. Egg Allergy
  - 9.6.1. Epidemiology
  - 9.6.2. Natural History
  - 9.6.3. Diagnosis
  - 9.6.4. Treatment
- 9.7. Oral Egg Immunotherapy
  - 9.7.1. Indications
  - 9.7.2. Tolerance Induction with Raw Egg
  - 9.7.3. Tolerance Induction with Boiled Egg
  - 9.7.4. Tolerance Induction with Baking
- 9.8. Non-IgE-Mediated Allergies
  - 9.8.1. Allergic Proctocolitis
  - 9.8.2. Food Protein-Induced Enterocolitis
  - 9.8.3. Food Protein Enteropathy
- 9.9. Nutritional Aspects of Food Allergy
- 9.10. Possible Interventions in the Primary Prevention of Cow's Milk and Egg Allergy

## Module 10. Main Pharmacological Groups Causing Allergic Pathology


- 10.1. Allergy to Quinolone Group Antibiotics
- 10.2. Allergy to Sulfonamide Group Antibiotics
- 10.3. Allergy to Non-Steroidal Anti-Inflammatory Drugs
- 10.4. Allergy to Chemotherapy Drugs
- 10.5. Allergy to Anticoagulants
- 10.6. Proton Pump Inhibitor Allergy
- 10.7. Allergy to Contrast Media
- 10.8. Pseudoallergic and Idiosyncratic Reactions to Drugs

## Module 11. Drug Allergies

- 11.1. Adverse Reactions to Medications
  - 11.1.1. Classification of Hypersensitivity Reactions
  - 11.1.2. Drugs as Allergens
- 11.2. Diagnostic Approximation
  - 11.2.1. Peculiarities in the Child
  - 11.2.2. Medical History
- 11.3. Allergy to Beta-Lactams
  - 11.3.1. Penicillin. Chemical Structure and Classification
  - 11.3.2. Side Chain Allergens
  - 11.3.3. Allergens by Central Core
  - 11.3.4. Medical History
  - 11.3.5. Diagnosis
  - 11.3.6. Avoidance Recommendations According to Results
  - 11.3.7. Allergy to Cephalosporins and Cross-Reactivity with Penicillin Derivatives
- 11.4. Allergy to NSAIDs
  - 11.4.1. Classification of NSAIDs
  - 11.4.2. Types of Reactions to NSAIDs
  - 11.4.3. Diagnosis
  - 11.4.4. Avoidance Recommendations
  - 11.4.5. Possible Alternative Drugs in Children
- 11.5. Allergy to Other Antibiotics
  - 11.5.1. Macrolides
  - 11.5.2. Aminoglycosides
  - 11.5.3. Glycopeptides
- 11.6. Allergy to Local Anesthetics and Perioperative Anaphylaxis
  - 11.6.1. Suspicion of Perioperative Allergic Reaction
  - 11.6.2. Tests to be Performed for Screening of the Responsible Drug
  - 11.6.3. Suspicion of Allergy to Local Anesthetics





- 
- A close-up photograph of a person's face, focusing on the eye and hand holding a tissue. The person's eye is closed, and their hand is holding a white tissue to their face. The skin is fair, and the hair is light brown. The background is blurred.
- 11.7. Vaccine Allergy
    - 11.7.1. Types of Vaccine Reactions
    - 11.7.2. Vaccine Content
    - 11.7.3. Epidemiology of Vaccine Allergic Reactions
    - 11.7.4. Reactions that May Simulate Allergic Reaction After Vaccination
    - 11.7.5. Diagnosis of Allergy to Vaccines
    - 11.7.6. Vaccination Recommendations for those Allergic to any of the Following Components
  - 11.8. Drug Desensitization
    - 11.8.1. Introduction
    - 11.8.2. Desensitization Mechanism
    - 11.8.3. Risk Evaluation
    - 11.8.4. Desensitization Protocols
  - 11.9. Severe Manifestations of Non-IgE-Mediated Reactions to Drugs
    - 11.9.1. DRESS
    - 11.9.2. Lynch-Like Stevens-Johnson
    - 11.9.3. Acute Generalized Exanthematous Pustulosis
    - 11.9.4. Other Systemic Manifestations
  - 11.10. Approach to Diagnosis in Severe Non-IgE Mediated Reactions

## **Module 12.** Allergy to Hymenoptera. Classification and Taxonomy

- 12.1. Classification and Taxonomy
- 12.2. Epidemiology and prevalence
- 12.3. Geographical Location of the Different Allergologically Relevant Hymenoptera
- 12.4. Systemic Allergic Reactions due to Hymenoptera: Bees
- 12.5. Systemic Allergic Reactions due to Hymenoptera: Wasps
- 12.6. Diagnosis of Allergic Reactions to Hymenoptera
- 12.7. Prophylaxis of Reactions to Hymenoptera Venoms
- 12.8. Treatment of Hymenoptera Allergy
- 12.9. Allergy to Hymenoptera Venom and Mastocytosis
- 12.10. Other Insect Bites

### Module 13. Allergic Cutaneous, Systemic and Respiratory Manifestations

- 13.1. Acute Urticaria
  - 13.1.1. Pathophysiology
  - 13.1.2. Frequent Etiology in the Child
  - 13.1.3. Anamnesis and Physical Examination
  - 13.1.4. The Role of Antihistamines in the Treatment of Acute Urticaria
- 13.2. Chronic Urticaria
  - 13.2.1. Etiopathogenesis
  - 13.2.2. Classification
  - 13.2.3. Diagnosis
  - 13.2.4. Treatment
- 13.3. Acute Angioedema
  - 13.3.1. Pathophysiology
  - 13.3.2. Frequent Etiology in the Child
  - 13.3.3. Anamnesis and Physical Examination
  - 13.3.4. Treatment
- 13.4. Recurrent Angioedema
  - 13.4.1. Etiopathogenesis
  - 13.4.2. Classification
  - 13.4.3. Diagnosis
  - 13.4.4. Treatment
- 13.5. Angioedema due to C1 Inhibitor Deficiency
  - 13.5.1. Etiopathogenesis
  - 13.5.2. Classification
  - 13.5.3. Diagnosis
  - 13.5.4. Treatment
- 13.6. Anaphylaxis
  - 13.6.1. Pathophysiology
  - 13.6.2. Etiology
  - 13.6.3. Treatment
  - 13.6.4. Prevention

- 13.7. Idiopathic Anaphylaxis
  - 13.7.1. Differential Diagnosis
  - 13.7.2. Diagnosis
  - 13.7.3. Treatment
- 13.8. Exercise-Induced Anaphylaxis
  - 13.8.1. Etiopathogenesis
  - 13.8.2. Classification
  - 13.8.3. Diagnosis
  - 13.8.4. Treatment
- 13.9. Mastocytosis in Children
  - 13.9.1. Prevalence
  - 13.9.2. Mastocytoma
  - 13.9.3. Urticaria Pigmentosa
  - 13.9.4. Diagnosis and Monitoring
  - 13.9.5. Treatment
- 13.10. Treatment of Asthma Attack
  - 13.10.1. Severity Assessment
  - 13.10.2. Treatment Algorithm
  - 13.10.3. Response Assessment and Discharge Recommendations

### Module 14. Other Allergens Causing Food Allergy in Childhood

- 14.1. Nut and Seed Allergy
  - 14.1.1. Epidemiology
  - 14.1.2. Natural History
  - 14.1.3. Diagnosis
  - 14.1.4. Treatment
- 14.2. Allergy to Shellfish and Fish
  - 14.2.1. Shellfish Allergy
    - 14.2.1.1. Epidemiology
    - 14.2.1.2. Natural History
    - 14.2.1.3. Diagnosis
    - 14.2.1.4. Treatment

- 14.2.2. Fish Allergy
  - 14.2.2.1. Epidemiology
  - 14.2.2.2. Natural History
  - 14.2.2.3. Diagnosis
  - 14.2.2.4. Treatment
- 14.3. Legume Allergy
  - 14.3.1. Epidemiology
  - 14.3.2. Natural History
  - 14.3.3. Diagnosis
  - 14.3.4. Treatment
- 14.4. Oral Allergy Syndrome
  - 14.4.1. Epidemiology
  - 14.4.2. Natural History
  - 14.4.3. Diagnosis
  - 14.4.4. Treatment
  - 14.4.5. Latex-Fruit Syndrome
- 14.5. LTP Sensitization Syndrome
  - 14.5.1. Epidemiology
  - 14.5.2. Natural History
  - 14.5.3. Diagnosis
  - 14.5.4. Treatment
- 14.6. Allergy to Cereals
  - 14.6.1. Epidemiology
  - 14.6.2. Natural History
  - 14.6.3. Diagnosis
  - 14.6.4. Treatment
- 14.7. Allergy to Food Additives and Preservatives
- 14.8. Induction of Tolerance to Other Foods
  - 14.8.1. Current Evidence
  - 14.8.2. New Forms of Immunotherapy with Food
- 14.9. Eosinophilic Esophagitis and its Relation to Food Allergy
- 14.10. Legislation on Allergen Labeling in the Food Industry
  - 14.10.1. Recommendations to the Patient

## Module 15. Asthma in the Infant and Young Child

- 15.1. The Debate Between Recurrent Wheezing and Asthma
- 15.2. Prevalence Around the World and in Spain BORRAR
- 15.3. Natural History
  - 15.3.1. Tucson Phenotypes
  - 15.3.2. Phenotypes by Triggers
  - 15.3.3. IPA Index
- 15.4. Etiopathogenesis
- 15.5. Risk Factors
  - 15.5.1. From the Guest
  - 15.5.2. Perinatal
  - 15.5.3. Environmental
- 15.6. Diagnosis
  - 15.6.1. Clinical and Anamnesis
  - 15.6.2. Complementary Tests
  - 15.6.3. Evaluation of Severity
  - 15.6.4. Assessment of Control
- 15.7. Differential Diagnosis
- 15.8. Medical treatment
  - 15.8.1. Treatment Steps
  - 15.8.2. Drugs Available for Asthma in Children under 3 Years of Age
- 15.9. Non-Pharmacological Treatment
  - 15.9.1. Environmental Measurements
  - 15.9.2. Immunizations
- 15.10. Inhaled Therapy in Children
  - 15.10.1. Fundamentals of Inhaled Therapy: Particle Characteristics and Pulmonary Deposition
  - 15.10.2. Correct use of Inhalers According to Age

## Module 16. Asthma in Older Children and Adolescents

- 16.1. Prevalence
- 16.2. Pathophysiology
  - 16.2.1. Cells Involved in Asthma
  - 16.2.2. Inflammatory Mediators
  - 16.2.3. Airway Obstruction Mechanisms
- 16.3. Phenotypes of Asthma
  - 16.3.1. Th2 Phenotype
  - 16.3.2. Non-Th2 Phenotype
- 16.4. Diagnosis
  - 16.4.1. Pulmonary Function
  - 16.4.2. Reversibility
  - 16.4.3. Other Markers of Inflammation
- 16.5. Differential Diagnosis
- 16.6. Comorbidities
  - 16.6.1. Rhinosinusitis
  - 16.6.2. Sleep Apnea-Hypopnea Syndrome (SAHS)
  - 16.6.3. Gastroesophageal Reflux
  - 16.6.4. Obesity
  - 16.6.5. Atopic Dermatitis
- 16.7. Medical treatment
  - 16.7.1. Treatment Steps
  - 16.7.2. Available Drugs
- 16.8. Non-Pharmacological Treatment
  - 16.8.1. Asthma Education
- 16.9. Uncontrolled Severe Asthma
- 16.10. Approved Biological Treatments in the Pediatric Population

## Module 17. Allergen-Specific Immunotherapy (AIT)

- 17.1. Immunotherapy
- 17.2. Mechanism of Action
- 17.3. Content of Allergenic Vaccines
  - 17.3.1. Types of Extracts
  - 17.3.2. Adjuvants
- 17.4. Indications and Contraindications of Immunotherapy
- 17.5. Effectiveness of Immunotherapy
  - 17.5.1. Short-Term Efficacy
  - 17.5.2. Long-Term Efficacy
  - 17.5.3. Improving Efficiency through Molecular Diagnostics
  - 17.5.4. Allergen Mixtures and Immunotherapies
- 17.6. Safety of Immunotherapy
  - 17.6.1. Local Reactions
  - 17.6.2. Systemic Reactions
- 17.7. Types of Immunotherapy
  - 17.7.1. By Route of Administration
  - 17.7.2. By Guidelines of Administration
  - 17.7.3. By Type of Allergen
- 17.8. Practical Management of Immunotherapy
  - 17.8.1. Starting Guidelines
  - 17.8.2. Duration of Immunotherapy
  - 17.8.3. Dose Adjustments
- 17.9. Monitoring and Adherence
  - 17.9.1. Evaluation of the Response
  - 17.9.2. How to Improve Adherence
- 17.10. Advances in Immunotherapy
  - 17.10.1. New Adjuvants
  - 17.10.2. New Routes of Administration

**Module 18. Eye-Nasal Allergy**

- 18.1. Prevalence
  - 18.1.1. Quality of Life of the Patient with Eye-Nasal Allergy
  - 18.1.2. Socio-Economic Cost
- 18.2. Etiopathogenesis
- 18.3. Diagnosis of Rhinoconjunctivitis
  - 18.3.1. Clinical symptoms
  - 18.3.2. Etiological
- 18.4. Differential Diagnosis
- 18.5. Pharmacological Treatment of Allergic Rhinoconjunctivitis
- 18.6. Health Education for Allergen Avoidance
- 18.7. Pollen Allergy
  - 18.7.1. Epidemiology
  - 18.7.2. The Pollen Molecule
  - 18.7.3. Pollen Classification
  - 18.7.4. Geographical Distribution of Pollens
  - 18.7.5. Main Allergens
  - 18.7.6. Molecule Diagnostics in Pollen Allergy
- 18.8. Allergy to Animal Epithelia
  - 18.8.1. Epidemiology
  - 18.8.2. Main Allergens
  - 18.8.3. Molecular Diagnosis in Allergy to Animal Epithelia
- 18.9. Dust Mite Allergy
  - 18.9.1. Epidemiology
  - 18.9.2. Mites
  - 18.9.3. Distribution of Mites according to Climate
  - 18.9.4. Main Allergens
  - 18.9.5. Molecular diagnosis
- 18.10. Allergy to Damp Fungi
  - 18.10.1. Epidemiology
  - 18.10.2. Moisture Molds
  - 18.10.3. Distribution of Fungi according to Climate
  - 18.10.4. Main Allergens
  - 18.10.5. Molecular diagnosis

**Module 19. Atopic Dermatitis**

- 19.1. Etiopathogenesis
  - 19.1.1. Predisposing Factors
  - 19.1.2. Skin Barrier Dysfunction
  - 19.1.3. Immunological Alterations
- 19.2. Diagnosis
  - 19.2.1. Clinical diagnosis
  - 19.2.2. Severity Assessment
  - 19.2.3. Differential Diagnosis
- 19.3. Complications of Atopic Dermatitis
  - 19.3.1. Infectious
  - 19.3.2. Non-infectious
- 19.4. General Guidelines for Atopic Skin Care
  - 19.4.1. Hygiene
  - 19.4.2. Feeding
  - 19.4.3. Dresses and Clothing
  - 19.4.4. Environmental Guidelines
- 19.5. Treatment Objectives
  - 19.5.1. Treatment of the Inflammation
  - 19.5.2. Itching Control
  - 19.5.3. Restoration of the Skin Barrier
- 19.6. Topical Drugs
  - 19.6.1. Emollients
  - 19.6.2. Topical corticosteroids
  - 19.6.3. Use of Topical Immunomodulators
- 19.7. Systemic Treatment
  - 19.7.1. Antihistamines
  - 19.7.2. Systemic Corticoids
  - 19.7.3. Systemic Immunomodulators
  - 19.7.4. Biological Drugs

- 19.8. Treatment of Infectious Complications
  - 19.8.1. Infections of Viral Etiology
  - 19.8.2. Infections of Bacterial Etiology
- 19.9. When and How to Assess Food Allergy as a Cause of Atopic Dermatitis
- 19.10. Contact Dermatitis

### Module 20. Future Allergology. Research. Food Immunotherapy and Drug Desensitization

- 20.1. Research and Allergy
- 20.2. Big Data in Allergic Diseases
- 20.3. Immunotherapy of Allergic Diseases. Introduction
- 20.4. Immunotherapy of Allergic Rhinitis and Asthma
- 20.5. Food Allergy Immunotherapy
- 20.6. Desensitization for the Treatment of Drug Allergy
- 20.7. Peptide immunotherapy
- 20.8. Immunotherapy and the Use of Biological Drugs

### Module 21. The Author's Professional Experience in the Diagnosis and Treatment of Allergic Diseases

- 21.1. Classification of Occupational Respiratory Diseases
- 21.2. Occupational Asthma. Diagnosis
- 21.3. Diagnostic Tests in Occupational Asthma: Skin Tests, Routine Respiratory Tests
- 21.4. Provocation Chambers in Occupational Asthma Diagnostics
- 21.5. Use of Induced Sputum in the Diagnosis of Occupational Asthma
- 21.6. High Molecular Weight Agents
- 21.7. Low Molecular Weight Agents
- 21.8. Occupational Eosinophilic Bronchitis and Pneumonitis Allergic Pneumonitis
- 21.9. Professional dermatoses: Classification and Description
- 21.10. Diagnosis of Occupational Dermatoses





## Module 22. Miscellaneous

- 22.1. Anaphylaxis
- 22.2. Telemedicine and Social Media in the Field of Allergology
- 22.3. Pharmaceuticals in Development in the Field of Allergology
- 22.4. Associations in the field of Allergology

“*Delve into all the most relevant details of each topic through multiple complementary readings, compiled by the teachers themselves*”

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. 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:

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.

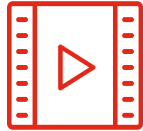
*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

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

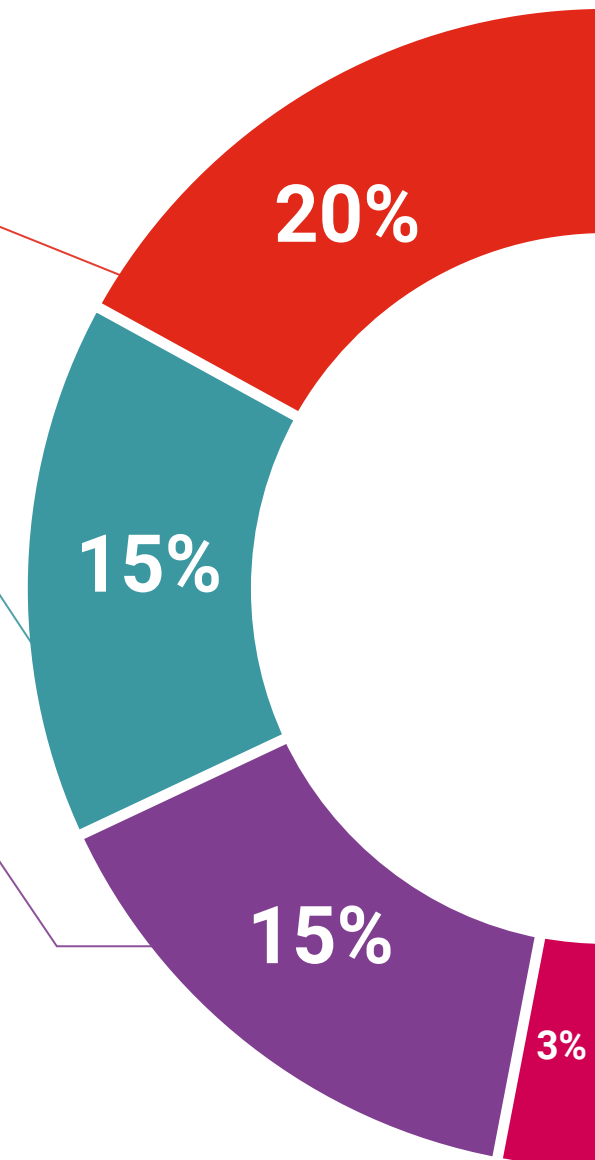
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

This Advanced Master's Degree in Allergology guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Technological University.





“

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

This **Advanced Master's Degree in Allergology** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Advanced Master's Degree** issued by **TECH Technological University** via tracked delivery\*.

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

Title: **Advanced Master's Degree in Allergology**

Official N° of hours: **3,000 h.**



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



## Advanced Master's Degree Allergology

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Advanced Master's Degree Allergology



Allergy Test