



# Postgraduate Diploma

# Biostatistics and Health Research

» Modality: online

» Duration: 6 months

» Certificate: TECH Global University

» Credits: 18 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-biostatistics-health-research

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Certificate

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# tech 06 | Presentación

The accumulation of real-world data that begins to be collected through multiple informatics technologies is integrated into virtual platforms to generate real-world evidence (RWE), facilitating clinical decision making and the design of health policies based on real patient outcomes.

Faced with this scenario, Medical Affairs has seen how its functions require technological mastery, an even more advanced scientific knowledge not only in medical aspects, but also in the latest advances in health studies or statistical methods, which allow to obtain a greater effectiveness of treatments through the measurement of experience and results obtained by the patient. A set of needs, to which TECH responds with this Postgraduate Diploma in Biostatistics and Health Research given exclusively online.

A university program that will take the specialist for 6 months to deepen in the latest developments in the structure and operation of the hospital pharmacy, pharmacological studies conducted in these spaces, the information obtained, the preservation of patient data and the substantial cost savings involved in such research.

For this purpose, the professionals will have access to innovative multimedia didactic material (video summaries, detailed videos, diagrams), essential readings or simulations of case situations, which will provide them with a global and practical vision of methodologies and strategies that they will be able to apply in their daily practice.

This academic institution thus offers a university program that can be accessed conveniently, whenever and wherever the specialist wishes. Students only requires an computer, Tablet or cell phone with an Internet connection to consult the syllabus hosted on the virtual campus. A flexible academic option, in which there is also the possibility of distributing the teaching load according to the physician's needs.

This **Postgraduate Diploma in Biostatistics and Health Research** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Practical cases presented by experts in Medicine and Ultrasound- in the pharmaceutical industry
- Graphic, schematic, and practical contents which provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection



A 100% online Postgraduate Diploma will lead you to learn about the main challenges of Medical Affairs in the face of digital transformation"



A 100% online academic option, which will bring you up to date on the most recent actions to maintain safety in the use of medication"

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

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

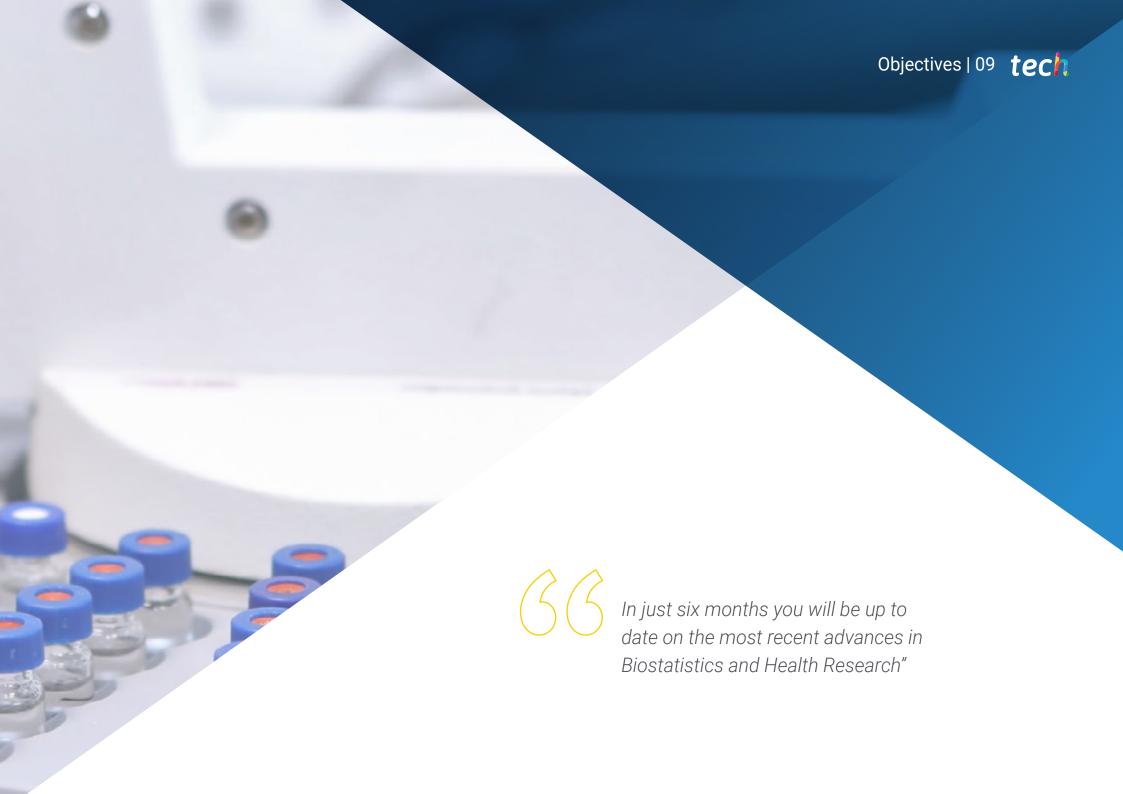
This program is designed around Problem-Based Learning, whereby students must try to solve the different professional practice situations that arise throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

This program will lead you to enhance your skills in the identification of the necessary requirements for the authorization and marketing of medicines.

With this university program you will be able to delve into PROMs and PREMs measurements and the interpretation of results.







# tech 10 | Objectives



- Assimilate the scientific and technical knowledge necessary to perform the functions in the Medical Affairs department
- Understanding in depth the relationship between the MSL and the Medical Advisor with the rest of the departments
- \* Analyze and learn about different structures of Medical Affairs departments
- Train the professional, through the necessary skills, to improve problem solving and develop essential professional competencies
- Gain in-depth knowledge of new projects of value for the pharmaceutical industry, such as Lean methodology and digital transformation
- Show the vision of hospital pharmacy as an agent of collaboration in research
- Gain in-depth knowledge of the latest research support tools
- Develop actions and initiatives that improve health outcomes, in collaboration with physicians, industry personnel and health departments
- Develop skills in scientific communication to train and inform other departments and improve the relationship with the physician and patient
- Train the professional in the critical reading of articles and in evidence management
- Design effective leadership strategies in work teams and with other departments
- Train the professional in conflict resolution in the workplace
- Implement emotional intelligence in the pharmaceutical industry sector

- Interpret the priorities of the pharmaceutical company and establish cooperation with health institutions, understanding the strategic competencies of the medical department, within the ethical framework
- Manage scientific databases for carrying out reviews and bibliographic searches of scientific studies
- Use medical information as a strategy for updating the medical team
- Train the practitioner to communicate medical information to the patient and the health professional



You will be able to deepen in this degree in the latest developments on the use of software in pharmaceutical research"



# Module 1. Vision from hospital pharmacy, clinical research and new tools to investigate and new tools for research

- Describe the characteristics, structure and functions of a hospital pharmacy
- Research the role of the hospital pharmacist in terms of access to and positioning and selection of medicines in hospitals
- Learn about the new models of patient follow-up by telepharmacy
- Define the Safety in the Use of Medicines
- Recognize the importance of medication safety and medication error reporting
- \* Recognize the organizational structure of a hospital center
- Simulate an incident reporting system
- Know the importance of vaccines and their necessity
- Define the benefits of general vaccination
- Recognize risk groups and risk situations for the use of vaccines
- Learn new ways of research with the use of latest generation software
- Describe the sound data as the basis for the truthful investigation
- Recognize new technologies applied to health data management

# Module 2. New value projects of the pharmaceutical industry Digital transformation in Medical Affairs

- Describe the most relevant characteristics of change management in the health care environment
- \* Learn about *Lean* methodology in health care
- Research organizational transformation models
- Recognize Organizational Culture

- Simulate an organizational change
- Define digital transformation in Medical Affairs
- Recognize the training strategy and define the training objective
- Investigate how to measure the implementation of the strategy
- Evaluate the strategy based on indicators
- Define Agile Mindset
- Use predictive analytics as a tool for decision making
- Design a training plan for opinion leaders

### Module 3. Professional competencies to work in Medical Affairs

- Acquire the necessary knowledge to speak in public effectively
- Manage emotions in conflict situations
- Describe the most relevant characteristics of the negotiation process
- Know the importance of personal branding and what it brings to the table
- Health Research models of Adaptation to Change
- \* Recognize problems, understand them, know their causes in order to solve them
- Simulate the management of a team
- Know the importance of time management and use time management tools
- Describe and learn about the labor market insertion process Know the tools to define to define the professional goal





# tech 14 | Course Management

## Management



# Dr. Cuchí Alfaro, Miguel Ignacio

- Medical Director of Hospital Universitario Puerta de Hierro Majadahonda in Spain
- Medical Coordinator of Hospital Audits in the Madrid Service
- Deputy Manager of the Ramón y Cajal University Hospital of Madrid
- Deputy Medical Director of the Ramón y Cajal University Hospital of Madrid
- Degree in Medicine

## **Professors**

## Ms. Lozano Llano, Carla

- Pharmacist at Puerta del Hierro University Hospital, Majadahonda
- Assistant Pharmacy Technician
- Degree in Pharmacy from the Complutense University of Madrid

### Ms. De Santiago Álvarez, Raquel

- Pharmacist at Puerta del Hierro University Hospital, Majadahonda
- Master's Degree Own in Pharmaceutical Oncology by the University of Valencia
- Degree in Pharmacy from the Complutense University of Madrid

## Dr. Gracia Sanromán, Javier

- Head of Preventive Medicine at MD Anderson Cancer Center Madrid
- Master's Degree in Total Quality from the Universidad Politécnica de Madrid, a Master's Degree in Health Services Management from the Universidad de Alcalá de Henares
- Specialist in Preventive Medicine and Public Health, Hospital Universitario La Paz
- Degree in Medicine from the Autonomous University Madrid





### Mr. Jiménez Alonso, Carlos

- Academics Executive Leader at General Electric Healthcare
- Industrial Engineer from ICAI
- Director of Strategic Solutions and Projects at General Electric Healthcare
- Director of Services at Dräger Medical Iberia
- Regional Head of Services at Dräger Medical Iberia
- Development Engineer at Veolia

### Mr. Alcaraz López, Juan Ignacio

- Pharmacist at Hospital Universitario Puerta de Hierro Majadahonda in Spain
- Pharmacology researcher
- Graduated in Pharmacy from the Complutense University of Madrid

## Mr. Aller Álvarez, Rubén

- Specialist in Health Technologies
- Expert in circular economy applied to the health sector
- Member of the Board of Directors, Spanish Society of Clinical Engineering Therapy

### Mr. González Francisco, Alfredo

- Senior Account Manager at SOAINT, IT Consulting Company
- Senior Business Strategy and Innovation Consultant at CEGOS, a Consulting, Learning and Competence Development company
- Business Director at Woork Smart Business Solutions
- Senior Account Manager in the Public Sector





# tech 18 | Structure and Content

# **Module 1.** Vision from the hospital pharmacy, clinical research and new tools to investigate and new tools for research

- 1.1. Structure and Function of the Hospital Pharmacy. Service
  - 1.1.1. Structure and Organization of the Hospital Pharmacy. Service
  - 1.1.2. Objectives and Functions of a Hospital Pharmacy Service
  - 1.1.3. Prioritization in the Development of the Functions of a Pharmacy Department
  - 1.1.4. Portfolio of services and areas of work
  - 1.1.5. Resources, Teamwork
- 1.2. Drug research in the hospital: hospital pharmacy vision
  - 1.2.1. Clinical Research and Trials
  - 1.2.2. Medications used and participants in a clinical trial
  - 1.2.3. Functions of the Pharmacy/Medicine Management System of the drug of the clinical trial
  - 1.2.4. Financing of studies and contracts
- 1.3. The pharmacist's role in access and positioning of medicines in the hospital
  - 1.3.1. Authorization and marketing of medicines
  - 1.3.2. Drug selection: drug selection
  - 1.3.3. Selection of Evidence-Based Medicine
  - 1.3.4. Therapeutic Positioning Reports
- 1.4. Pharmacotherapeutic monitoring: health outcomes and telepharmacy
  - 1.4.1. Patient-perceived health outcomes (PROMs): What Are They? and how to measure them?
  - 1.4.2. Health outcomes patient reported experience (PREMs): What Are They and How to Measurement Them?
  - 1.4.3. Application in clinical practice of health outcomes
  - 1.4.4. Telepharmacy towards a new patient follow-up model
- 1.5. Safety in the Use of ICTs in the At Hospital
  - 1.5.1. The Importance of Security/Safety
  - 1.5.2. Medication errors
  - 1.5.3. Risk Management and Notification Systems Incident
  - 1.5.4. Prevention of Medication Errors

- 1.6. Advantages of Vaccines in General
  - 1.6.1. Why are vaccines necessary?
  - 1.6.2. Impact of Vaccines on Health
  - 1.6.3. Vaccine Safety
  - 1.6.4. Phases in the Development of vaccines are
- 1.7. Vaccination in Risk Groups
  - 1.7.1. Risk Groups
  - 1.7.2. Risk Situations
  - 1.7.3. Vaccination highlights: What's new?
- 1.8. Hospital research support platform
  - 1.8.1. State of the art software as an aid to research
  - 1.8.2. Website Architecture
  - 1.8.3. Regulatory requirements
- 1.9. The healthy data
  - 1.9.1. The logistics of sound data
  - 1.9.2. OSHMS Certification
- 1.10. New Technology Applied to Research
  - 1.10.1. La New Technologies in Data Visualization
  - 1.10.2. New technology in data analysis
  - 1.10.3. New technology in the prediction of research data

# **Module 2.** New value projects of the pharmaceutical industry. Digital transformation in Medical Affairs

- 2.1. Change management, value-added services in strategic projects
  - 2.1.1. Time of change or change of era
  - 2.1.2. Why do changes fail?
  - 2.1.3. People are at the center of change
  - 2.1.4. Three elements to facilitate change
  - 2.1.5. Eight steps to drive change

# Structure and Content | 19 tech

- 2.2. Introduction to Lean,, an essential ingredient in any collaborative project
  - 2.2.1. Empathy
  - 2.2.2. History of Lean
  - 2.2.3. Lean in health care
  - 2.2.4. Five Lean principles
  - 2.2.5. Lean Toolbox
- 2.3. Emotional leadership, development of skills needed to drive innovation
  - 2.3.1. Pull vs. vs. Push
  - 2.3.2. What is Leadership?
  - 2.3.3. Leadership without hierarchy
  - 2.3.4. Hierarchical leadership traps
  - 2.3.5. Leader 5.0.
- 2.4. Team Building, reinforcement dynamics in organizational transformation processes
  - 2.4.1. The four dimensions of personality
  - 2.4.2. Necessary personality types
  - 2.4.3. The five dysfunctions of a team
  - 2.4.4. The five waves of trust
  - 2.4.5. Creating High-Performance Teams
- 2.5. Cultural change strategies in healthcare organizations
  - 2.5.1. What is Management Culture?
  - 2.5.2. Why is it relevant in a change management process?
  - 2.5.3. Barriers
  - 2.5.4. Hoshin Kanri
  - 2.5.5. Examples of major organizational changes
- 2.6. Digital Transformation
  - 2.6.1. Know and understand the customer
  - 2.6.2. Player: profiles: professionals, patients, institutions and medical societies and medical societies
  - 2.6.3. Real-time information
  - 2.6.4. Efficient, effective and certified information mapping
- 2.7. Educational and training strategy
  - 2.7.1. Definition and objectives
  - 2.7.2. Data Science
  - 2.7.3. Living information as constantly evolving
  - 2.7.4. Continuous training as a Medical Affairs tool

- 2.8. Content at the center
  - 2.8.1. Generador y gestor de contenidos
  - 2.8.2. Know the needs of the Player
  - 2.8.3. Create ad hoc material based on your needs
  - 2.8.4. Reference: Based Content Quality
- 2.9. Measurement the implementation of the strategy
  - 2.9.1. Definition and objectives
  - 2.9.2. What are Assets of Cultural Interest?
  - 2.9.3. Indicator-Based Assessment
  - 2.9.4. Visualization as an Analysis Tool
- 2.10. Agile Mindset
  - 2.10.1. What is Agile Mindset?
  - 2.10.2. Predictive as a tool for decision making
  - 2.10.3. Advantages and Disadvantages
  - 2.10.4. Design of a training plan for the creation of opinion leaders

### **Module 3.** Professional competencies to work in Medical Affairs

- 3.1. Effective public speaking
  - 3.1.1. Ensure the success of your presentation: overcoming stage fright. Rely on oneself to occupy all the space. Harmonize (voice, gestures, posture, gaze)
  - 3.1.2. Clearly present your ideas: organize your thinking. Define your objectives to maintain a direction. Structure your message
  - 3.1.3. Establish an authentic dialogue: understanding the keys to communication. Use and take advantage of the group's resources. Encourage and control public participation. How to get ideas across?
  - 3.1.4. Make the public your ally: keep them interested with or without media. Know how to react during exchanges with improvisation. Know how to close
- 3.2. Manage emotions in conflict situations
  - 3.2.1. Understanding emotions: the role of the brain. Identifying Emotions
  - Develop emotional balance: managing incoherent emotional reactions.
     Develop Self-confidence
  - 3.2.3. Using emotions to build trust
  - 3.2.4. Resolve conflict situations
  - 3.2.5. Develop Control skills

# tech 20 | Structure and Content

#### 3.3. Leadership

- 3.3.1. Strategic planning: tools to build the vision focused on achieving the objectives. Planning as a Success Warranties
- 3.3.2. Decision-making: decision-making process with a clear methodology to avoid unnecessary subjectivity. Balance between reason and emotion
- 3.3.3. Achievement orientation: work by objectives. Tools to define objectives and their follow-up. Introduction to OKRs
- 3.3.4. Continuous improvement: continuous learning. The Deming Cycle

#### 3.4. Influence and negotiation

- 3.4.1. Basic principles of negotiation: I actively promote collaboration to provide the best solution for my clients and colleagues
- 3.4.2. The negotiation process: elements. Objectives. Trading band
- 3.4.3. Negotiation Strategies How to approach the negotiation?
- 3.4.4. Communication and influence: convincing and making winning proposals

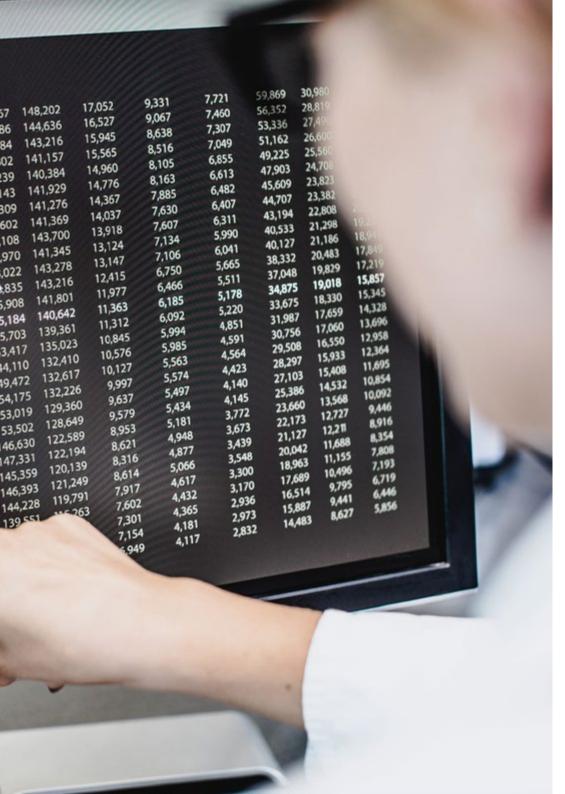
#### 3.5. Personal Brand

- 3.5.1. Understanding what personal branding is: Why is it important and what does it bring us?
- 3.5.2. Building and managing your personal brand: five universal goals for building your personal brand. How to establish a network of contacts?
- 3.5.3. Social networks: choose your social networks (Linkedin, Twitter, Facebook, Instagram)
- 3.5.4. Launching your personal brand: personal branding campaigns and how to measure success

#### 3.6. Adaptation to Change

- 3.6.1. Accepting change: this is the phase of understanding the need for change, when people are stabilized and accept the new situation
- 3.6.2. Resistance to change: knowing how to identify the barriers and difficulties that position people against change is a way to find solutions that help to incorporate new ways of doing things
- 3.6.3. Change process. The hero's journey: understanding the process of change from denial to transformation of individuals
- 3.6.4. Change management in organizations: understanding Kotter-like models of change management in organizations





# Structure and Content | 21 tech

- 3.7. Problem Solving
  - 3.7.1. Understanding of the problem: understanding the problem, identifying its causes and the challenges it presents
  - 3.7.2. Idea generation: ideation and creativity processes to develop different solutions
  - 3.7.3. Analysis: idea analysis models
  - 3.7.4. Decision-making: tools for decision making
- 3.8. Team Management
  - 3.8.1. Functional teams: achievement-oriented teams. Lencioni Pyramid
  - 3.8.2. Tools for Interdisciplinary Team Management
  - 3.8.3. Motivation techniques: models for motivating team members.
    Intrinsic and Motivation Extrinsic Motivation
  - 3.8.4. Feedback: reinforce the employees' sense of responsibility in the development of the company's work
- 3.9. Professional efficiency. Time Management
  - 3.9.1. The time paradigm: understanding the relative importance of time
  - 3.9.2. Personal efficiency: be a strategist of your time and focus on what is really important to improve your productivity
  - 3.9.3. Time management tools and techniques: stress management, time management tools and methods
- 3.10. Job Placement
  - 3.10.1. Set your career goal: tools to define your career goal
  - 3.10.2. CV preparation: identification of professional skills and competencies for CV preparation
  - 3.10.3. Job search: job search techniques. Networking, Social Media, Search Engines and Head Hunters Management
  - 3.10.4. The Interview How to face a job interview?



An academic option that will lead you to update your knowledge about telepharmacy and the new ways of patient follow-up"



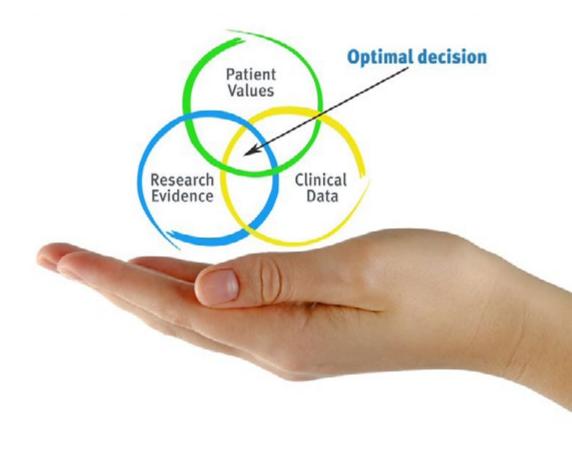


# tech 24 | Methodology

### 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 | 27 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 28 | 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.

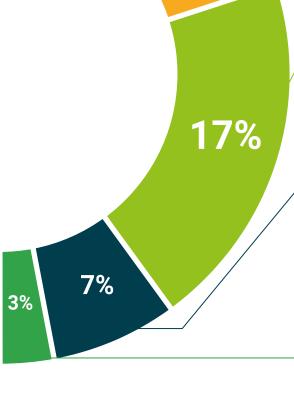
The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### **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 32 | Certificate

This program will allow you to obtain your **Postgraduate Diploma in Biostatistics and Health Research** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

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

Title: Postgraduate Diploma in Biostatistics and Health Research

Modality: online

Duration: 6 months

Accreditation: 18 ECTS



#### Postgraduate Diploma in Biostatistics and Health Research

This is a program of 450 hours of duration equivalent to 18 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





# Postgraduate Diploma

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