

# Postgraduate Certificate Advanced Dental Health Management



## Postgraduate Certificate Advanced Dental Health Management

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

Website: [www.techtute.com/us/artificial-intelligence/postgraduate-certificate/advanced-dental-health-management](http://www.techtute.com/us/artificial-intelligence/postgraduate-certificate/advanced-dental-health-management)

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# 01

# Introduction

The various applications of Artificial Intelligence (AI) play a key role in modern dentistry. Thanks to these systems, experts can detect dental problems such as anomalies in tooth alignment at an early stage. This, in turn, enables practitioners to apply the most effective treatments, taking into account the specific needs of each individual. However, given the constant advances in this health specialty, professionals need to update their knowledge on a regular basis to integrate the most innovative techniques into their medical procedures and provide effective clinical care. To help them with this task, TECH has developed an online program that will provide them with the most modern tools for monitoring and controlling Dental Health indicators.





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*You will apply the most effective strategies to prevent the appearance of oral diseases and guarantee the wellbeing of the population”*

To achieve the most successful results in different therapies, dentists must be aware of as much information as possible about their patients. This includes aspects such as medical history, pre-existing medical conditions such as allergies, a list of medications you are taking, etc. It should be noted that this data is highly private, so physicians are obliged to ensure its privacy at all times. In this way, healthcare professionals will provide safe care to users and avoid all kinds of difficulties during the development of their work.

In this context, TECH implements an advanced program that will provide extensive knowledge about safety during the monitoring and control of Dental Health through AI. To this end, this syllabus will delve into the development of dashboards for the monitoring of dental indicators. Likewise, the syllabus will delve into the unification of clinical and biomedical information as a basic premise for the maintenance of oral wellness. The didactic content will also focus on the interpretation of indicators, thus enabling graduates to make clinical decisions based on both the data obtained and the scientific evidence. On the other hand, students will analyze the main ethical considerations related to the privacy of users, so that their practices stand out for their responsibility.

It is worth noting that TECH offers a 100% online educational environment, tailored to the needs of busy professionals seeking to advance their careers. Through the Relearning methodology, based on the repetition of key concepts to fix knowledge and facilitate learning, flexibility is combined with a robust pedagogical approach. The only thing students will need is an electronic device with Internet access to access the Virtual Campus. There they will be able to view both the syllabus and additional multimedia resources, including interactive summaries.

This **Postgraduate Certificate in Advanced Dental Health Management** contains the most complete and up-to-date program on the market. Its most notable features are:

- The development of case studies presented by experts in Artificial Intelligence in Dentistry
- 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 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



*Looking to nurture your procedures with the best data visualization techniques? Improve your interpretation and diagnosis thanks to this innovative university program"*

“

*You will produce accurate Dental Health reports thanks to Artificial Intelligence tools. And only in 6 weeks with this program!"*

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

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive education programmed to learn in real situations.

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

*You will delve into natural language processing in Dental Health Records for the extraction of important indicators.*

*Thanks to the revolutionary Relearning methodology, you will integrate all the knowledge in an optimal way to successfully achieve the results you are looking for.*



# 02 Objectives

Through this program, graduates will gain comprehensive knowledge about the variety of AI applications oriented to Dental Health Monitoring and Control. Students will incorporate with immediate effect to their clinical practice the most advanced tools of Intelligent Automation to offer excellent services. In addition, they will use *dashboards* to make more informed decisions based on solid data. Students will also acquire a heightened discernment of ethical considerations to keep in mind during their activities, enabling them to foster fully responsible practices to ensure data security.





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*You will correctly interpret dental images using AI-based systems and achieve more individualized treatments”*



## General Objectives

- Understand the theoretical foundations of Artificial Intelligence
- Study the different types of data and understand the data lifecycle
- Evaluate the crucial role of data in the development and implementation of AI solutions
- Delve into algorithms and complexity to solve specific problems
- Explore the theoretical basis of neural networks for Deep Learning development
- Explore bio-inspired computing and its relevance in the development of intelligent systems
- Analyze current strategies of Artificial Intelligence in various fields, identifying opportunities and challenges
- Gain a solid understanding of Machine Learning principles and their specific application in dental contexts
- Analyze dental data, including visualization techniques to improve diagnostics
- Acquire advanced skills in the application of AI for the accurate diagnosis of oral diseases and interpretation of dental images
- Understand the ethical and privacy considerations associated with the application of AI in dentistry
- Explore ethical challenges, regulations, professional liability, social impact, access to dental care, sustainability, policy development, innovation, and future prospects in the application of AI in dentistry





## Specific Objectives

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- ◆ Acquire solid knowledge of the basic principles of Machine Learning and its specific application in dental contexts
- ◆ Learn methods and tools for analyzing dental data, as well as visualization techniques that enhance interpretation and diagnosis
- ◆ Develop a thorough understanding of the ethical and privacy considerations associated with the application of AI in dentistry, promoting responsible practices in the use of these technologies in clinical settings
- ◆ Familiarize students with the various applications of AI in the field of dentistry, such as oral disease diagnosis, treatment planning, and patient care management
- ◆ Design personalized dental treatment plans according to the specific needs of each patient, taking into account factors such as genetics, medical history and individual preferences



*A high-intensity program that will allow students to advance quickly and efficiently in their learning"*

# 03

# Course Management

This Postgraduate Certificate has been designed following the guidelines of the best group of specialists. The teachers who are part of this university program have extensive professional experience, having worked in prestigious institutions in the health sector. These professionals will provide students with various teaching materials, with which graduates will delve into the monitoring and control of Mental Health through AI. Students will also gain skills that they will incorporate with immediacy into their clinical procedures to offer the best medical treatments. Likewise, they will remain at the technological forefront by handling the most modern equipment in the healthcare field.



“

*An experienced teaching staff will guide you throughout the learning process and resolve any doubts you may have"*

## Management



### **Dr. Peralta Martín-Palomino, Arturo**

- ♦ CEO and CTO at Prometheus Global Solutions
- ♦ CTO at Korporate Technologies
- ♦ CTO at AI Shephers GmbH
- ♦ Consultant and Strategic Business Advisor at Alliance Medical
- ♦ Director of Design and Development at DocPath
- ♦ Ph.D. in Psychology from the University of Castilla - La Mancha
- ♦ Ph.D. in Economics, Business and Finance from the Camilo José Cela University
- ♦ Ph.D. in Psychology from University of Castilla – La Mancha
- ♦ Professional Master's Degree in Executive MBA by the Isabel I University
- ♦ Professional Master's Degree in Sales and Marketing Management, Isabel I University
- ♦ Expert Master's Degree in Big Data by Hadoop Training
- ♦ Professional Master's Degree in Advanced Information Technologies from the University of Castilla - La Mancha
- ♦ Member of: SMILE Research Group



### **Dr. Martín-Palomino Sahagún, Patricia**

- ♦ Specialist in Dentistry and Orthodontics
- ♦ Private Orthodontist
- ♦ Researcher
- ♦ Ph.D. in Dentistry from the University Alfonso X El Sabio
- ♦ Postgraduate in Orthodontics from the University Alfonso X El Sabio
- ♦ Degree in Dentistry at the University of Alfonso X El Sabio

## **Professors**

### **Mr. Popescu Radu, Daniel Vasile**

- ♦ Pharmacology, Nutrition and Diet Specialist
- ♦ Freelance Producer of Didactic and Scientific Contents
- ♦ Nutritionist and Community Dietitian
- ♦ Community Pharmacist
- ♦ Researcher
- ♦ Professional Master's Degree in Nutrition and Health at the Oberta University of Catalonia (UOC)
- ♦ Professional Master's Degree in Psychopharmacology from the University of Valencia
- ♦ Pharmacist by the Complutense University of Madrid
- ♦ Nutritionist-Dietician at the European University Miguel de Cervantes

### **Dr. Carrasco González, Ramón Alberto**

- ♦ Specialist in Computer Science and Artificial Intelligence
- ♦ Researcher
- ♦ Head of Business Intelligence (Marketing) at Caja General de Ahorros de Granada and Banco Mare Nostrum.
- ♦ Responsible for Information Systems (Data Warehousing and Business Intelligence) at Caja General de Ahorros de Granada and Banco Mare Nostrum
- ♦ Ph.D. in Artificial Intelligence from the University of Granada.
- ♦ Computer Engineer from the University of Granada

# 04

# Structure and Content

This program will provide students with a multidisciplinary approach to AI in dentistry for effective use in diagnosis and treatment planning. To achieve this, the syllabus will address in detail the applications of Intelligent Automation aimed at addressing oral conditions such as caries. In this sense, the syllabus will delve into the keys for the integration of clinical and biomedical information as a basis for health control. Likewise, the didactic materials will provide students with the most advanced tools for monitoring the medical condition of patients.



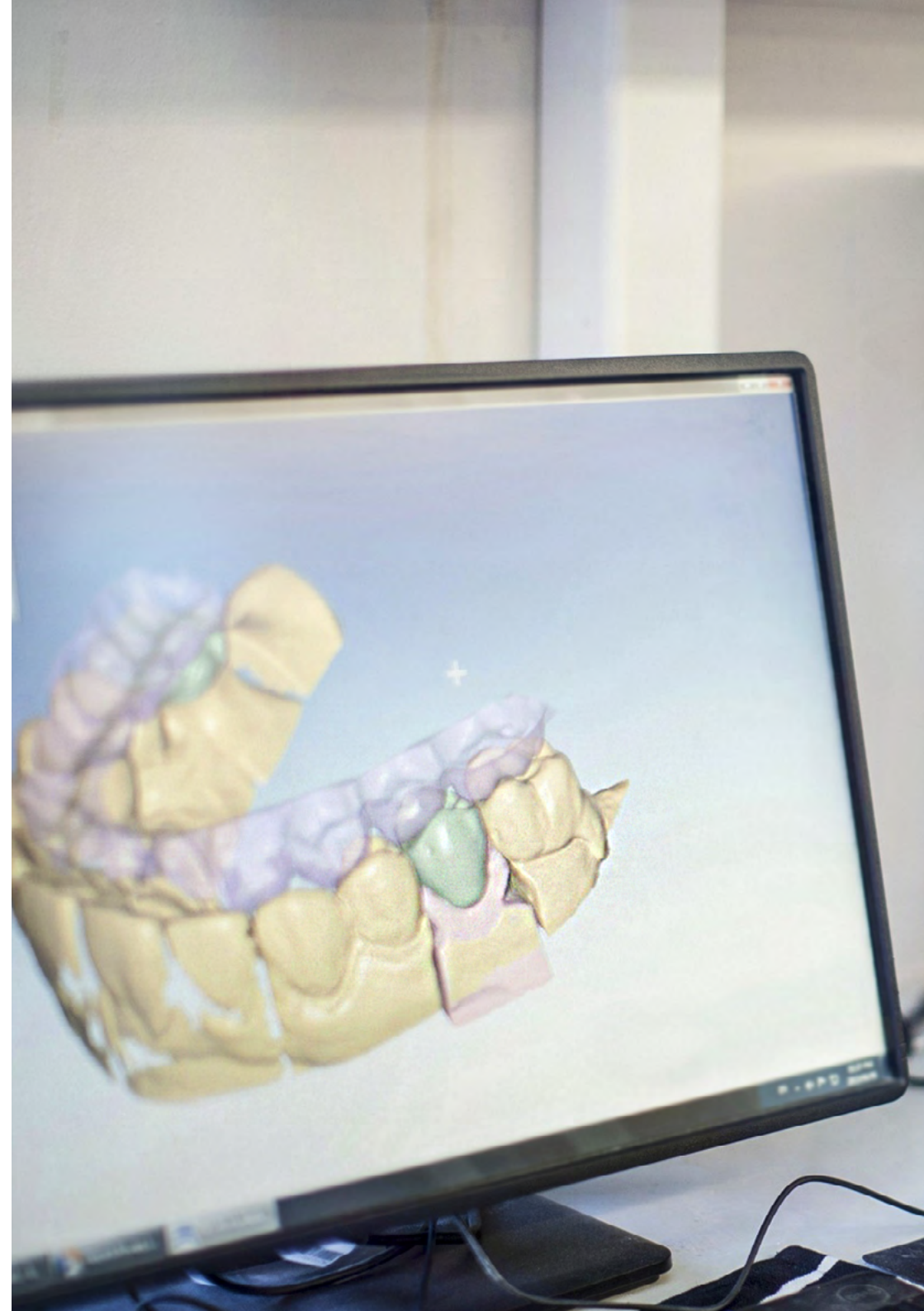


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*You will develop and execute personalized dental therapies to provide the highest quality care to your patients”*

## Module 1. Monitoring and Control of Dental Health using AI

- 1.1. AI Applications for Patient's Dental Health Management
  - 1.1.1. Design of Mobile Applications for Dental Hygiene Monitoring
  - 1.1.2. AI Systems for the Early Detection of Caries and Periodontal Diseases
  - 1.1.3. Use of AI in the Personalization of Dental Treatments
  - 1.1.4. Image Recognition Technologies for Automated Dental Diagnostics
- 1.2. Integration of Clinical and Biomedical Information as a Basis for Dental Health Monitoring
  - 1.2.1. Platforms for Integration of Clinical and Radiographic Data
  - 1.2.2. Analysis of Medical Records to Identify Dental Risks
  - 1.2.3. Systems for Correlating Biomedical Data with Dental Conditions
  - 1.2.4. Tools for the Unified Management of Patient Information
- 1.3. Definition of Indicators for the Control of the Patient's Dental Health
  - 1.3.1. Establishment of Parameters for the Evaluation of Oral Health
  - 1.3.2. Systems for Monitoring Progress in Dental Treatments
  - 1.3.3. Development of Risk Indexes for Dental Disease
  - 1.3.4. AI Methods for the Prediction of Future Dental Problems
- 1.4. Natural Language Processing of Dental Health Records for Indicator Extraction
  - 1.4.1. Automatic Extraction of Relevant Data from Dental Records
  - 1.4.2. Analysis of Clinical Notes to Identify Dental Health Trends
  - 1.4.3. Use of NLP to Summarize Long Medical Records
  - 1.4.4. Early Warning Systems Based on Clinical Text Analysis
- 1.5. AI Tools for the Monitoring and Control of Dental Health Indicators
  - 1.5.1. Development of Applications for Monitoring Oral Hygiene and Oral Health
  - 1.5.2. AI-based Personalized Patient Alerts Systems
  - 1.5.3. Analytical Tools for Continuous Assessment of Dental Health
  - 1.5.4. Use of Wearables and Sensors for Real-Time Dental Monitoring





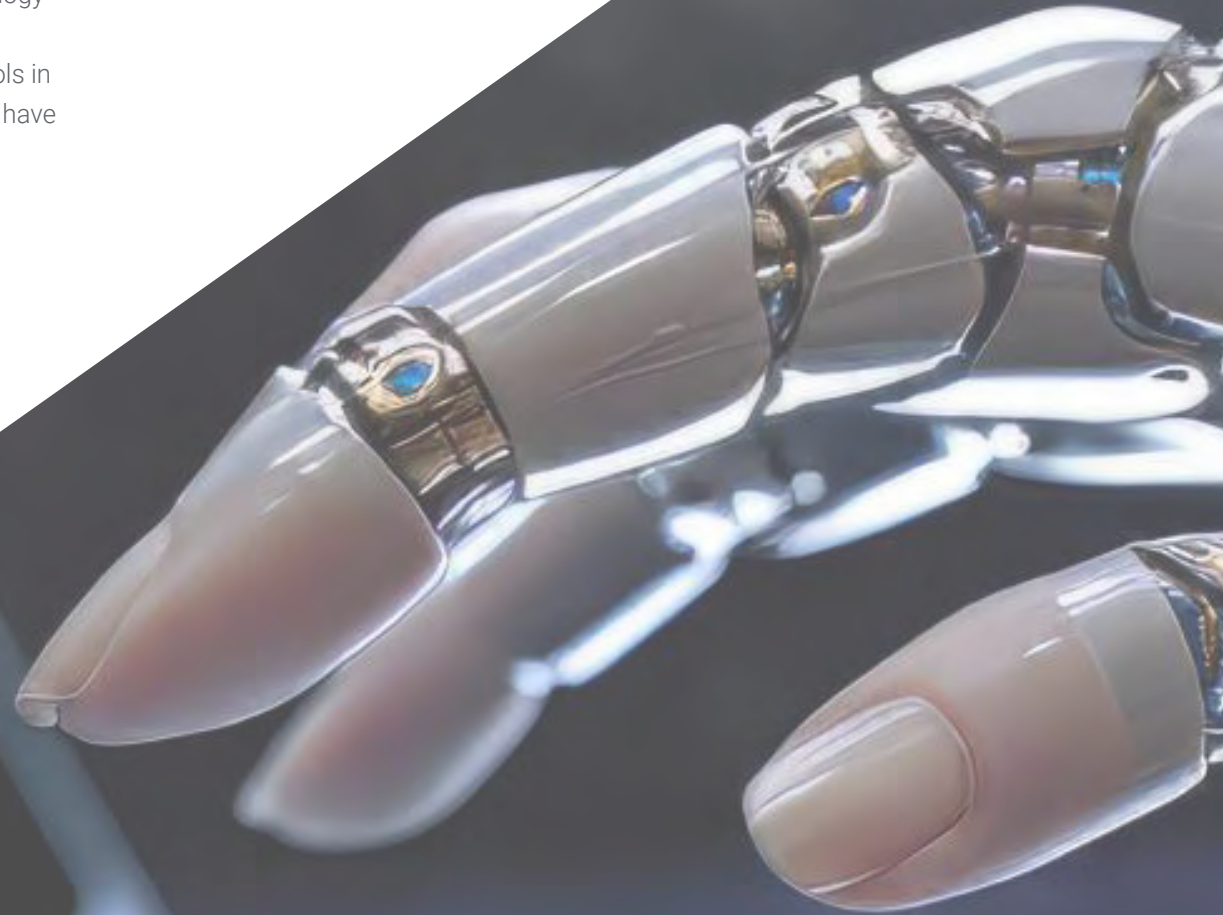
- 1.6. Development of Dashboards for the Monitoring of Dental Indicators
  - 1.6.1. Creation of Intuitive Interfaces for Dental Health Monitoring
  - 1.6.2. Integration of Data from Different Clinical Sources into a Single Dashboard
  - 1.6.3. Data Visualization Tools for Treatment Monitoring
  - 1.6.4. Customization of Dashboards According to the Needs of the Dental Professional
- 1.7. Interpretation of Dental Health Indicators and Decision Making
  - 1.7.1. Data-driven Clinical Decision Support Systems
  - 1.7.2. Predictive Analytics for Dental Treatment Planning
  - 1.7.3. AI for Interpretation of Complex Oral Health Indicators
  - 1.7.4. Tools for the Evaluation of Treatment Effectiveness
- 1.8. Generation of Dental Health Reports using AI Tools
  - 1.8.1. Automation of the Creation of Detailed Dental Reports
  - 1.8.2. Customized Report Generation Systems for Patients
  - 1.8.3. AI Tools for Summarizing Clinical Findings
  - 1.8.4. Integration of Clinical and Radiological Data into Automated Reports
- 1.9. AI-enabled Platforms for Patient Monitoring of Dental Health
  - 1.9.1. Applications for Oral Health Self-monitoring
  - 1.9.2. AI-based Interactive Dental Education Platforms
  - 1.9.3. Tools for Symptom Tracking and Personalized Dental Advice
  - 1.9.4. Gamification Systems to Encourage Good Dental Hygiene Habits
- 1.10. Security and Privacy in the Treatment of Dental Information
  - 1.10.1. Security Protocols for the Protection of Patient Data
  - 1.10.2. Encryption and Anonymization Systems in the Management of Clinical Data
  - 1.10.3. Regulations and Legal Compliance in the Management of Dental Information
  - 1.10.4. Privacy Education and Awareness for Professionals and Patients

05

# Methodology

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

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





“

*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"*

## Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“

*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”*



*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*



*The student will learn to solve complex situations in real business environments through collaborative activities and real cases.*

### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method has been the most widely used learning system among the world's leading Information Technology schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, students will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.





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.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



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.



### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

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



### Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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.





#### Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



#### 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".



#### 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.



06

# Certificate

The Postgraduate Certificate in Advanced Dental Health Management guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This **Postgraduate Certificate in Advanced Dental Health Management** contains the most complete and up-to-date program on the market.

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

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

Title: **Postgraduate Certificate in Advanced Dental Health Management**

Official N° of Hours: **150 h.**



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

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



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