Postgraduate Certificate
Advanced Analysis and
Data Processing in Dentistry

tech technological university

Postgraduate Certificate
Advanced Analysis and
Data Processing in Dentistry

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

Website: **www.techtitute.com/us/artificial-intelligence/postgraduate-certificate/advanced-analysis-data-processing-dentistry**

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01
Introduction

The use of *Big Data* in dentistry is becoming increasingly important because of its potential to transform dental care and improve clinical decision making. This massive data is used to analyze large amounts of clinical radiographic and even genetic information about patients. In this way, practitioners can identify patterns aimed at improving accuracy in the diagnosis of dental diseases such as maxillofacial disorders. Aware of its benefits, healthcare institutions are looking to incorporate dentists specialized in this area into their teams. In order for candidates to gain a competitive advantage, they need a thorough knowledge of Oral Health Predictive Analytics techniques. To help them, TECH is developing online program to provide them with the most advanced tools.

"

Study from the comfort of your home and update your knowledge online with TECH Technological University, the biggest online university in the world"

Machine Learning Algorithms play a significant role in dental research, as they serve to recognize risk factors associated with oral pathologies (such as smoking, diet or poor oral hygiene). Therefore, practitioners take these aspects into account when implementing preventive measures aimed at high-risk groups. In this sense, these tools predict the long-term prognosis of certain dental conditions, in addition to evaluating the effectiveness of the treatments applied. This is valuable for the therapeutic approach of patients with chronic conditions or those requiring procedures over a long period of time.

In this context, TECH implements a pioneering program that will deal with advanced analysis and data processing in dentistry. With the help of specialists in the field, the syllabus will delve into the Data Mining tool applied to local records, so that students can identify patterns that indicate the presence of oral conditions. Likewise, the syllabus will address the most advanced techniques for Predictive Analytics and the different AI models for dental epidemiology. In line with this, the didactic materials will offer multiple Machine Learning algorithms that will contribute to the development of dental research. The university program will also promote the monitoring of trends and patterns in Oral Health, taking advantage of the rise of social media.

The methodology of this program reinforces its innovative character. To this end, it employs the *Relearning* methodology, based on the repetition of key concepts to fix knowledge and facilitate learning. In this way, the combination of flexibility and a robust pedagogical approach makes it highly accessible. In addition, physicians will have access to a didactic library with a variety of multimedia resources in different formats such as interactive summaries, explanatory videos and infographics. Specialists will also learn in simulated learning environments to extract valuable lessons to apply in their work practice.

This **Postgraduate Certificate in Advanced Analysis and Data Processing in Dentistry** contains the most complete and up-to-date program on the market. The most important features include:

- 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

Perform the most reliable predictive analytics to prevent oral conditions such as caries"

You will nurture your clinical practice with Machine Learning models to focus on dental epidemiology"

You will use the resources of Artificial Intelligence to accurately analyze costs in Dentistry.

With the Relearning system used by TECH you will reduce the long hours of study and memorization. Learn in a natural way!

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.

02
Objectives

Through this Postgraduate Certificate, graduates will master sets of information in the field of Dentistry, taking advantage of *Big Data* applications such as Data Mining. Likewise, students will have a series of advanced skills to carry out predictive analysis. On the other hand, students will be highly qualified in areas such as dental epidemiology, clinical data management and social media analysis. In turn, they will employ AI tools to monitor trends, contributing to more efficient management.

" Interactive summaries of each topic will allow you to dynamically consolidate machine learning algorithms in dental research"

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
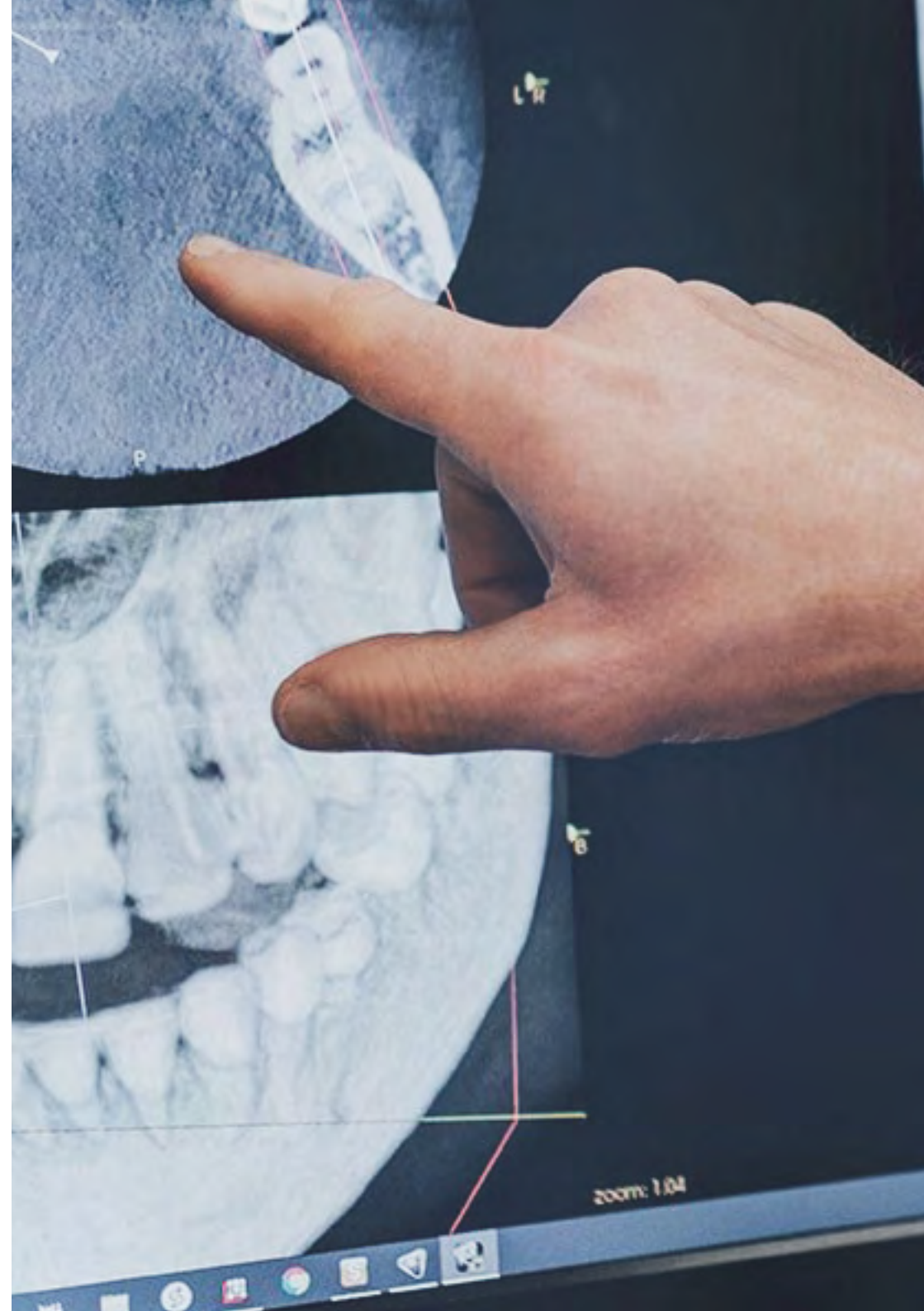
Specific Objectives

- Handle large datasets in dentistry, understanding the concepts and applications of *Big Data*, as well as the implementation of data mining and predictive analytics techniques

- Acquire expertise in the application of AI in various aspects, such as dental epidemiology, clinical data management, social network analysis and clinical research, using machine learning algorithms

- Develop advanced skills in the management of large datasets in dentistry, understanding the concepts and applications of *Big Data*, as well as the implementation of data mining and predictive analytics techniques

- Employ AI tools for monitoring oral health trends and patterns, contributing to more efficient management

- Explore and discuss the various ways in which data analytics is used to improve clinical decision making, patient care management and research in Dentistry

TECH provides you with a high-quality and flexible Postgraduate Certificate. View it conveniently from your computer, mobile or tablet!"

03

Course Management

Each faculty member at the head of this university program has been carefully selected for their extensive experience and multidisciplinary skills. These specialists stand out for their in-depth mastery of the most innovative techniques in Advanced Analysis and Data Processing in Dentistry. In addition, they are firmly committed to providing an excellent educational experience through a holistic approach. In this way, they not only prepare graduates with advanced knowledge, but also with skills.

"

The diverse talents and expertise of the faculty will create an enriching learning environment"

Management

Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus 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
- Head of 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

Structure and Content

This academic track will focus on the application of advanced technologies in data management in dentistry. Through the syllabus, students will delve into the impact of *Big Data* in dentistry, examining cutting-edge tools such as Data Mining to extract valuable data. The syllabus will also delve into advanced predictive analytics techniques in Oral Health, which will enable students to efficiently manage clinical information. Moreover, the module will explore how to leverage social media and AI to monitor both the latest trends and patterns in Oral Health.

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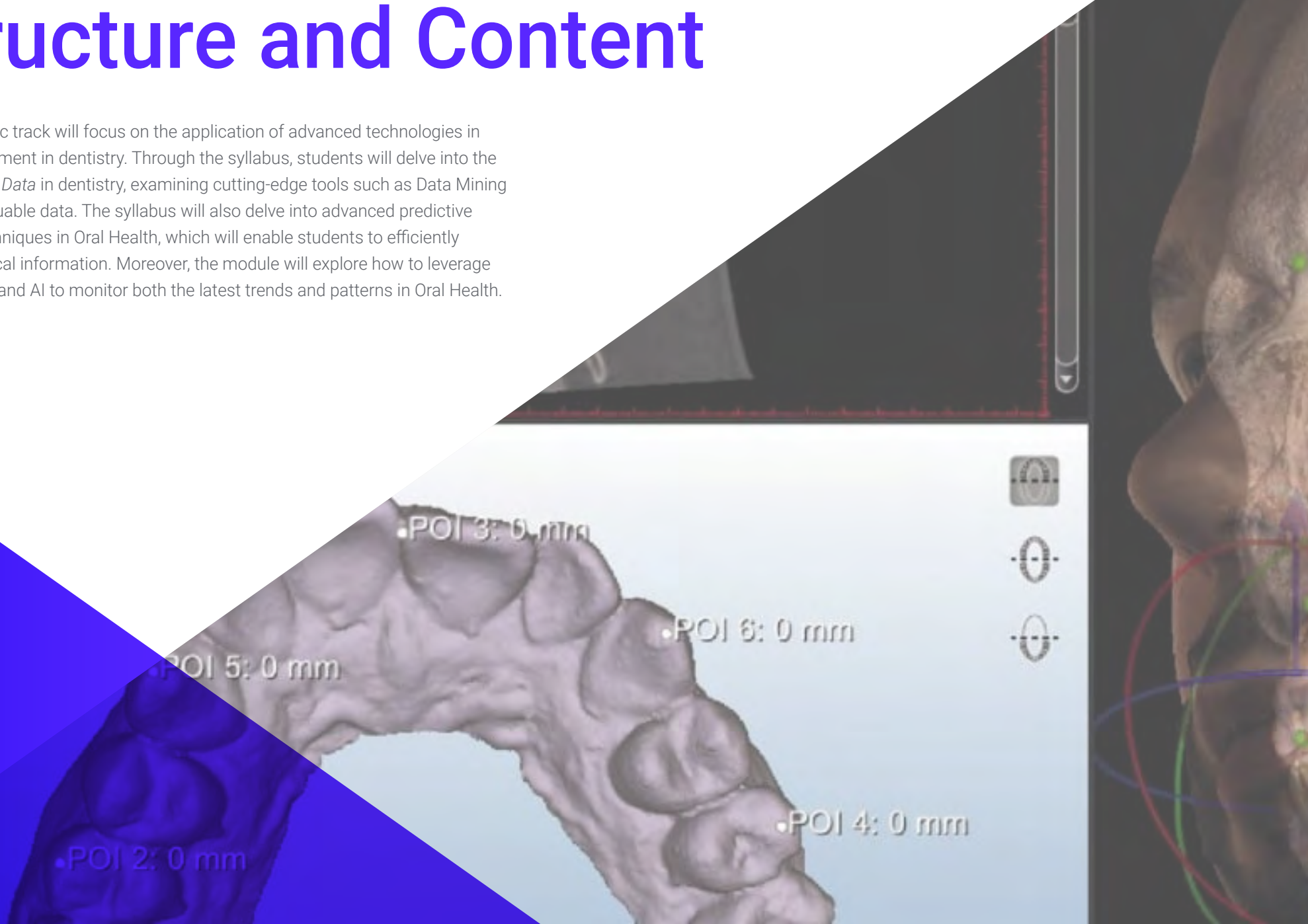
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(PoR) Right Porion
(S) Sella Turcica
(A)
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Name
SNA

You will achieve a more efficient management thanks to modern tools dedicated to monitoring trends and patterns in Oral Health"

Study through innovative multimedia didactic formats that will optimize your updating process"

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.
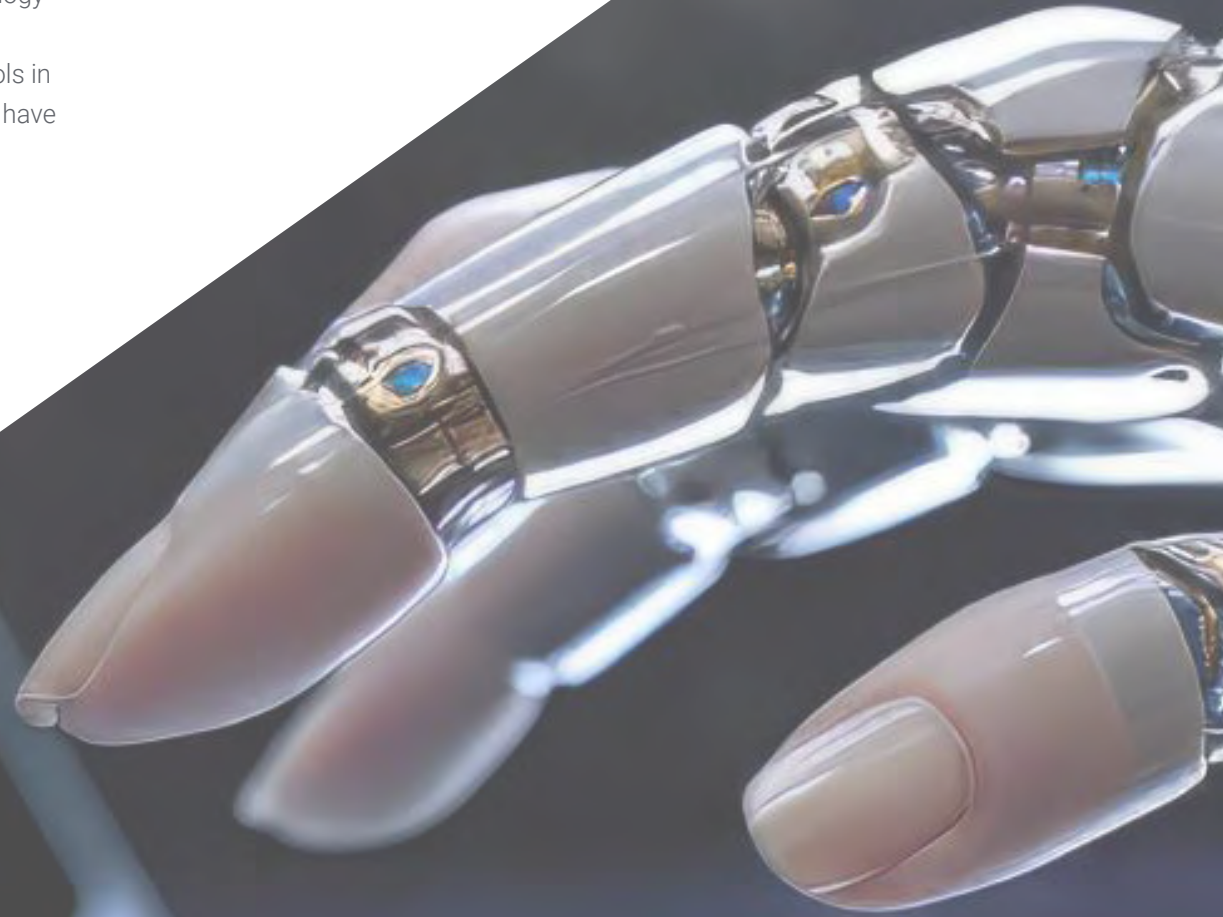
Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

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.

01 learning from evidence

02 relearning from evidence

03 testing

04 learning from an expert

05 neurocognitive context dependent learning

06 Von-Restorff effect

07 case based learning through storytelling

08 competencies testing (retesting)

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.

30%

10%

8%

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20%

25%

4%

3%

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 Analysis and Data Processing in Dentistry 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 Analysis and Data Processing in Dentistry** 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 Analysis and Data Processing in Dentistry**
Official Nº of Hours: **150 h.**

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Awards the following
DIPLOMA
to
Mr./Ms. _____, with identification number _____.
For having passed and accredited the following program

POSTGRADUATE CERTIFICATE
in
Advanced Analysis and Data Processing in Dentistry

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

Unique TECH Code: AFWORD23S   techtitute.com/certificates

*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.

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