

# Postgraduate Certificate Patient Care and Treatment Optimization with Artificial Intelligence





## Postgraduate Certificate Patient Care and Treatment Optimization with Artificial Intelligence

- » 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/patient-care-treatment-optimization-artificial-intelligence](http://www.techtute.com/us/artificial-intelligence/postgraduate-certificate/patient-care-treatment-optimization-artificial-intelligence)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 16*

05

Methodology

---

*p. 20*

06

Certificate

---

*p. 28*

# 01

# Introduction

Interdisciplinary collaboration in Artificial Intelligence (AI)-assisted treatments is of vital importance for several reasons. Among them, it allows leveraging the strengths of each field of knowledge to drive effective solutions. In addition, these relationships mean that models and algorithms are constantly being improved, which means that more data is collected for informed decision making. In this way, professionals will ensure that therapies are patient-centered and thus tailored to patients' requirements. In this context, TECH implements a university program that will foster collaboration between different medical specialties through Artificial Intelligence systems. And all with a 100% online format, to adapt to the agenda of busy professionals.







“

*You will use Artificial Intelligence to personalize treatments thanks to this revolutionary 100% online university program"*

Optimizing Treatment and Patient Care with Machine Learning is an important application of technology in healthcare. This system helps practitioners to locate possible side effects of medications and to take potential risks into account. As a result, experts will be able to intervene early to personalize preventive treatments. However, as medicine and technology advance rapidly, Artificial Intelligence models must be continuously updated and adapted to reflect the latest developments.

For this reason, TECH is developing a Postgraduate Certificate that will delve into the treatment and control of users with Artificial Intelligence. The academic itinerary will delve into the use of these mechanisms to assist in therapeutic decision making. This will enable graduates to master tools for the administration of doses and medication schedules. At the same time, the agenda will analyze in detail various tools for monitoring and controlling health indicators (including mobile applications, wearables and dashboards). In line with this, professionals will use Artificial Intelligence to optimize the planning of surgeries and medical procedures. In addition, during the program there will be simulations and practices of surgical procedures to bring the program closer to the reality of clinical care.

Thanks to the fact that this university program is developed through a completely online methodology, students will be able to perfectly combine their excellent medical update with their personal and professional obligations. In addition, the program is designed and taught by specialists with extensive experience in the field of Artificial Intelligence and who have held positions of responsibility in leading hospitals. Therefore, the assimilated knowledge will be fully applicable in daily practice. In this way, graduates will be highly qualified to overcome any obstacle that may arise during their work experience.

This **Postgraduate Certificate in Patient Care and Treatment Optimization with Artificial Intelligence** contains the most complete and up-to-date program on the market. Its most notable features are:

- ♦ Development of practical cases presented by experts in Artificial Intelligence in Clinical Practice
- ♦ 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
- ♦ 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



*You will acquire the necessary skills to master Artificial Intelligence assisted treatment systems after this Postgraduate Certificate"*

“

*Do you want to specialize in dealing with health emergency situations? Achieve it with this Postgraduate Certificate in only 150 hours"*

The program's teaching staff includes professionals from the field who contribute their work experience to this educational 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 learn through real cases and by solving complex situations in simulated learning environments.*

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





# 02 Objectives

Thanks to this program, healthcare professionals will nurture their procedures with a comprehensive and multidisciplinary approach to the application of Artificial Intelligence in their therapies. In this way, physicians will master the most modern tools for monitoring and controlling health indicators. This will have a positive impact on their work, as they will distinguish themselves by providing healthcare based on excellence. In addition, experts will be qualified to respond to health emergencies such as pandemics, acting with immediacy and efficiency. Moreover, they will carry out innovative projects aimed at implementing therapeutic advances to improve social welfare.







“

*You will plan measures through computerized and intelligent tools after this academic itinerary of TECH, the best digital university in the world according to Forbes"*

21-1-51

REF. 1337/224

Routine

Queue

Res

Auto Detection

Gen



## 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
- ♦ Analyze 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.
- ♦ Critically evaluate the benefits and limitations of AI in healthcare, identifying potential pitfalls and providing an informed assessment of its clinical application
- ♦ Recognize the importance of collaboration across disciplines to develop effective AI solutions
- ♦ Gain a comprehensive perspective on emerging trends and technological innovations in AI applied to healthcare
- ♦ Acquire solid knowledge in medical data acquisition, filtering, and preprocessing
- ♦ Understand the ethical principles and legal regulations applicable to the implementation of AI in medicine, promoting ethical practices, fairness, and transparency







## Specific Objectives

---

- Interpret results for ethical dataset creation and strategic application in healthcare emergencies
- Acquire advanced skills in the presentation, visualization and management of healthcare AI data
- Gain a comprehensive perspective on emerging trends and technological innovations in AI applied to healthcare
- Develop AI algorithms for specific applications such as health monitoring, facilitating the effective implementation of solutions in medical practice
- Design and implement individualized medical treatments by analyzing patients' clinical and genomic data with AI



*Access the multimedia resources library and the entire syllabus from day one. No fixed schedules or attendance!"*

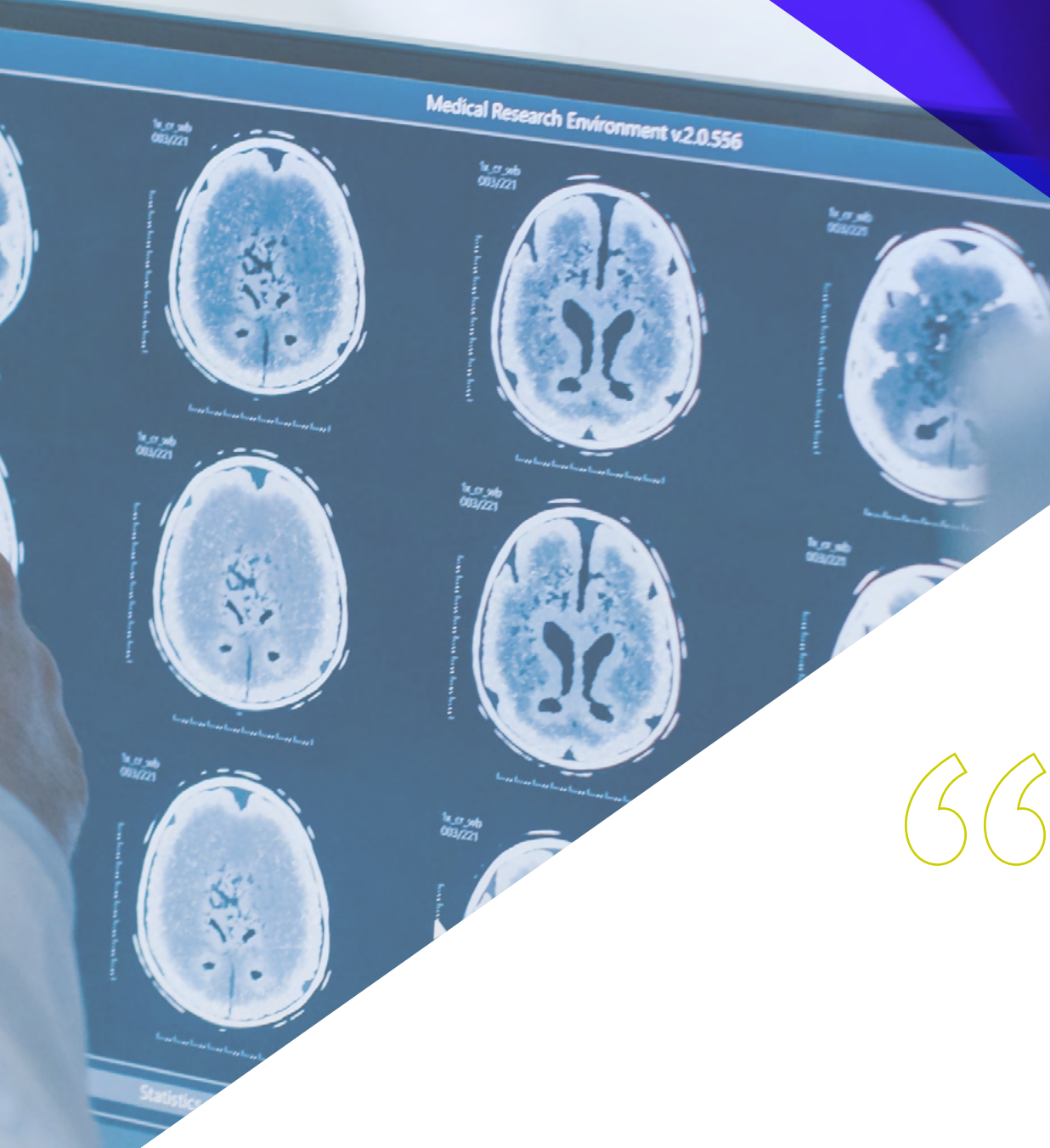


# 03

# Course Management

Thanks to TECH's untiring commitment to raising the quality of its university programs to the highest level, this academic program is directed and taught by prestigious specialists in Optimizing Treatment and Patient Care with Machine Learning. All these professionals have an extensive professional background in first level hospital centers. Therefore, all the knowledge that they will transfer to the graduates will be fully applicable in daily practice. In addition, these experts will help them to acquire new skills with which they will optimize their routine procedures and enrich the quality of their therapies.





“

*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
- ◆ Máster in Executive MBA por la Universidad Isabel I
- ◆ Master's Degree in Sales and Marketing Management, Isabel I University
- ◆ Expert Master's Degree in Big Data by Hadoop Training
- ◆ Master's Degree in Advanced Information Technologies from the University of Castilla - la Mancha
- ◆ Member of: SMILE Research Group





### Mr. Martín-Palomino Sahagún, Fernando

- ♦ *Chief Technology Officer and R+D+i Director at AURA Diagnostics (medTech)*
- ♦ *Business Development at SARLIN*
- ♦ *Operations Director at Alliance Diagnostics*
- ♦ *Innovation Director at Alliance Diagnostics*
- ♦ *Chief Information Officer at Alliance Medical*
- ♦ *Field Engineer & Project Management in Digital Radiology at Kodak*
- ♦ *MBA at Polytechnic University of Madrid*
- ♦ *Executive Master's Degree in Marketing and Sales, ESADE*
- ♦ *Telecommunications Engineer from the University Alfonso X El Sabio*

## Professors

### Dr. Carrasco González, Ramón Alberto

- ♦ *Computer Science and Artificial Intelligence Specialist*
- ♦ *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, University of Granada*
- ♦ *Computer Engineer from the University of Granada*

### Mr. Popescu Radu, Daniel Vasile

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

# 04

# Structure and Content

This program will provide practitioners with a comprehensive knowledge to manage AI-assisted treatment systems. Designed by experts in this field, the curriculum will delve into the most effective indicators to measure the medical condition of patients. Likewise, the syllabus will bring together the most innovative tools to carry out monitoring procedures and thus become aware of the responses to therapies. The didactic contents will also analyze various ways to optimize health care, through the design of individualized plans according to the needs of each individual.





“

*You will obtain advanced skills in the presentation, visualization and management of Machine Learning data applied to the healthcare field"*



## Module 1. Treatment and Management of the AI Patient

- 1.1. AI-assisted Treatment Systems
  - 1.1.1. Development of AI Systems to Assist in Therapeutic Decision Making
  - 1.1.2. Use of AI for the Personalization of Treatments Based on Individual Profiles
  - 1.1.3. Implementation of AI Tools in the Administration of Dosage and Medication Scheduling
  - 1.1.4. Integration of AI in Real-Time Monitoring and Adjustment of Treatments
- 1.2. Definition of Indicators for Monitoring Patient Health Status
  - 1.2.1. Establishment of Key Parameters using AI for Patient Health Monitoring
  - 1.2.2. Use of AI to Identify Predictive Indicators of Health and Disease
  - 1.2.3. Development of Early Warning Systems Based on Health Indicators
  - 1.2.4. Implementation of AI for Continuous Assessment of Patient Health Status
- 1.3. Tools for Monitoring and Controlling Health Indicators
  - 1.3.1. Development of AI-enabled Mobile and Wearable Applications for Health Monitoring
  - 1.3.2. Implementation of AI Systems for the Real-Time Analysis of Health Data
  - 1.3.3. Use of AI-based Dashboards for Visualization and Monitoring of Health Indicators
  - 1.3.4. Integration of IoT Devices in the Continuous Monitoring of Health Indicators with AI
- 1.4. AI in the Planning and Execution of Medical Procedures
  - 1.4.1. Use of AI Systems to Optimize the Planning of Surgeries and Medical Procedures
  - 1.4.2. Implementation of AI in the Simulation and Practice of Surgical Procedures
  - 1.4.3. Use of AI to Improve Accuracy and Efficiency in the Execution of Medical Procedures
  - 1.4.4. Application of AI in Surgical Resource Coordination and Management



- 1.5. Machine Learning Algorithms for the Establishment of Therapeutic Treatments
  - 1.5.1. Use of Machine Learning to Develop Personalized Treatment Protocols
  - 1.5.2. Implementation of Predictive Algorithms for the Selection of Effective Therapies
  - 1.5.3. Development of AI Systems for Real-time Tailoring of Treatments
  - 1.5.4. Application of AI in the Analysis of the Effectiveness of Different Therapeutic Options
- 1.6. Adaptability and Continuous Updating of Therapeutic Protocols Using AI
  - 1.6.1. Implementation of AI Systems for Dynamic Review and Updating of Treatments
  - 1.6.2. Use of AI in Adaptation of Therapeutic Protocols to New Findings and Data
  - 1.6.3. Development of AI Tools for Continuous Personalization of Treatments
  - 1.6.4. Integration of AI in Adaptive Response to Evolving Patient Conditions
- 1.7. Optimization of Healthcare Services with AI Technology
  - 1.7.1. Use of AI to Improve the Efficiency and Quality of Health Care Services
  - 1.7.2. Implementation of AI Systems for Healthcare Resource Management
  - 1.7.3. Development of AI Tools for Workflow Optimization in Hospitals
  - 1.7.4. Application of AI in the Reduction of Waiting Times and Improvement of Patient Care
- 1.8. Application of AI in the Response to Health Emergencies
  - 1.8.1. Implementation of AI Systems for Rapid and Efficient Healthcare Crisis Management
  - 1.8.2. Use of AI in Optimizing the Distribution of Resources in Emergencies
  - 1.8.3. Development of AI Tools for Disease Outbreak Prediction and Response
  - 1.8.4. Integration of AI in Warning and Communication Systems during Health Emergencies
- 1.9. Interdisciplinary Collaboration in AI-assisted Treatments
  - 1.9.1. Promotion of Collaboration between Different Medical Specialties through AI Systems
  - 1.9.2. Use of AI to Integrate Knowledge and Techniques from Different Disciplines in Treatment
  - 1.9.3. Development of AI Platforms to Facilitate Interdisciplinary Communication and Coordination
  - 1.9.4. Implementation of AI in the Creation of Multidisciplinary Treatment Teams
- 1.10. Successful Experiences of AI in the Treatment of Diseases
  - 1.10.1. Analysis of Successful Cases in the Use of AI for Effective Treatment of Diseases
  - 1.10.2. Evaluation of the Impact of AI in Improving Treatment Outcomes
  - 1.10.3. Documentation of Innovative Experiences in the Use of AI in Different Medical Areas
  - 1.10.4. Discussion on the Advances and Challenges in the Implementation of AI in Medical Treatments



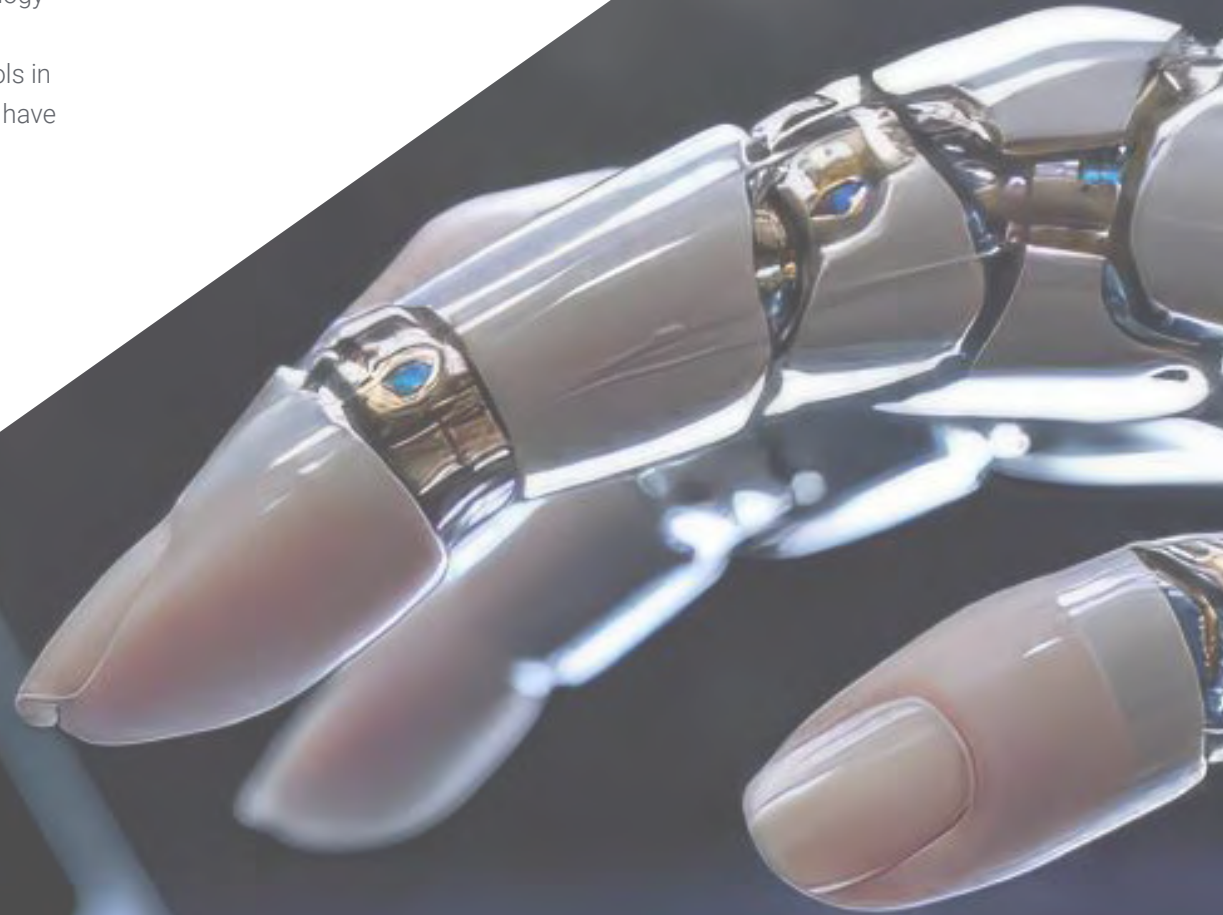
*Make the most of this opportunity and take the next step, to get up to date on the latest Trends in Optimizing Patient Care and Treatment with Artificial Intelligence”*

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 Patient Care and Treatment Optimization with Artificial Intelligence guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.





“

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

This **Postgraduate Certificate in Patient Care and Treatment Optimization with Artificial Intelligence** 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 Patient Care and Treatment Optimization with Artificial Intelligence**

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

**tech** technological  
university

personalized service innovation

knowledge present

online treatment

development languages

virtual classroom

## Postgraduate Certificate Patient Care and Treatment Optimization with Artificial Intelligence

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

# Postgraduate Certificate Patient Care and Treatment Optimization with Artificial Intelligence