



Artificial Intelligence in Pharmaceutical Production and Distribution

» Modality: online

» Duration: 6 weeks

» Certificate: TECH Global University

» Credits: 6 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/pharmacy/postgraduate-certificate/artificial-intelligence-pharmaceutical-production-distribution

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The integration of AI in pharmaceutical production and distribution is revolutionizing the industry, providing innovative solutions to optimize processes and improve efficiency. According to a report by the World Health Organization, the application of technologies such as AI in drug manufacturing has the potential to reduce production costs and improve the quality of pharmaceutical products. Taking into account the digital transformation in this sector, TECH has developed this innovative program, which will address the latest advances in drug production. From a 100% online system, specialists will acquire the tools to implement intelligent solutions, which guarantee safety and compliance with current regulations, with an ethical and responsible approach.



tech 06 | Introduction

In pharmaceutical production, AI enables manufacturing to be optimized by automating repetitive tasks, real-time monitoring of product quality and predicting failures in production systems, resulting in greater drug consistency and reliability. In short, the integration of AI in these processes not only improves profitability and operational efficiency, but also contributes to better care by ensuring that medicines arrive on time, in optimal conditions and with the guarantee of meeting the most demanding standards.

Given this premise, TECH has established this program in Artificial Intelligence in Pharmaceutical Production and Distribution, which will offer professionals a unique opportunity to develop key skills in the use of Artificial Intelligence in one of the most important and constantly evolving sectors. Through a comprehensive and multidisciplinary approach, it will address how AI is optimizing drug manufacturing, distribution and logistics processes, ensuring not only efficiency, but also quality and safety at every stage of the product life cycle. It will also delve into the implementation of intelligent solutions that improve pharmaceutical production through automation, predictive analytics and real-time monitoring.

Thanks to the training received, graduates will be ready to face the future challenges of the industry. In this way, they will be better prepared to assume key roles in the optimization of pharmaceutical processes, opening new doors in their professional development within a growing sector with great prospects for the future.

All this, taught in a 100% online mode that will offer maximum flexibility for students to be trained at the time and place that best suits their needs. It will also have the innovative Relearning methodology, with which they will be able to consolidate knowledge effectively, reviewing key concepts in a progressive and practical way.

This Postgraduate Certificate in Artificial Intelligence in Pharmaceutical Production and Distribution contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of case studies presented by experts with a deep mastery of Al tools in Pharmaceutical Production and Distribution
- The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable 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



Thanks to the TECH modality, you will advance in your professional career without interruptions, preparing you for a future where technology will be the protagonist in the pharmaceutical industry"



You will specialize in the application of Al in Pharmacy and access key content that transforms related processes, from production to efficient distribution. Join TFCH now!"

The program's teaching staff includes professionals from the sector who contribute their work experience to this specializing 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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts.

Connect with the future of Pharmacy! With this TECH program you will discover how AI is able to efficiently transform pharmaceutical production and distribution.

You will advance at your own pace with an online methodology that will optimize your practical knowledge! So, you will prepare yourself to lead in a digital environment related to pharmacology.







tech 10 | Why Study at TECH?

The world's best online university, according to FORBES

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



The most complete syllabus





World's
No.1
The World's largest
online university

The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.







99% maximun employability guaranteed

-0

Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.

The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.

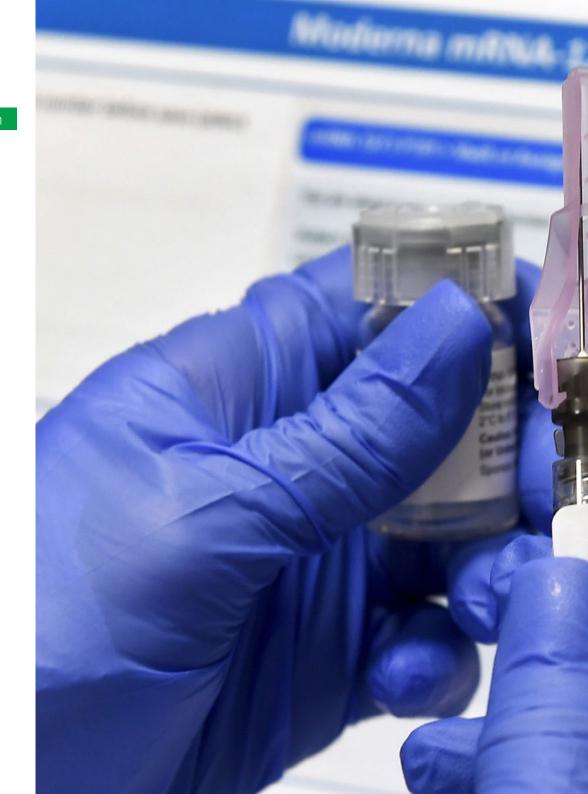




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Module 1. Artificial Intelligence in Pharmaceutical Production and Distribution

- 1.1. Optimization of Manufacturing Processes with Al
 - 1.1.1. Introduction to Pharmaceutical Manufacturing and Current Challenges
 - 1.1.2. Al Algorithms to Improve Production Efficiency
 - 1.1.3. Predictive Models to Reduce Manufacturing Times
 - 1.1.4. Siemens Pharma Example for Process Automation
- 1.2. Quality Control in Drug Manufacturing
 - 1.2.1. Importance of Quality Control in the Pharmaceutical Industry
 - 1.2.2. Al Algorithms for Inspection and Defect Detection
 - 1.2.3. Al to Ensure Consistency in Product Quality
 - 1.2.4. Applications such as Aizon for Quality Analysis in Production
- 1.3. Al for Inventory and Distribution Management
 - 1.3.1. Introduction to Inventory Management in Pharmaceuticals
 - 1.3.2. Al Models for Inventory and Demand Optimization
 - 1.3.3. Demand Forecasting Using Data Analytics
 - 1.3.4. Tools such as SAP Integrated Business Planning
- 1.4. Predictive Maintenance in Production Plants
 - 1.4.1. Concept of Predictive Maintenance and Its Benefits
 - 1.4.2. Al Algorithms to Anticipate Machinery Failures
 - 1.4.3. Al to Optimize Maintenance Cycles
 - .4.4. Examples of Digital GE in Predictive Maintenance
- 1.5. Drug Counterfeit Detection
 - 1.5.1. Impact of Drug Counterfeiting on Public Health
 - 1.5.2. Al for Authentication of Pharmaceutical Products
 - 1.5.3. Computer Vision Algorithms for Counterfeit Detection
 - 1.5.4. Tools such as TruTag for Authenticity Verification
- 1.6. Automation in Packaging and Labeling
 - 1.6.1. Packaging Processes in the Pharmaceutical Industry
 - 1.6.2. Al for Optimization of Automated Labeling and Packaging
 - 1.6.3. Computer Vision Techniques in Label Control
 - 1.6.4. Rockwell Automation Applications in Packaging





Syllabus | 15 tech

- 1.7. Logistics Optimization and Safe Distribution of Pharmaceuticals
 - 1.7.1. Drug Logistics and Its Impact on Availability
 - 1.7.2. Al Algorithms for Optimization of Distribution Routes
 - 1.7.3. Al for Tracking Deliveries and Transport Conditions
 - 1.7.4. Examples such as UPS Healthcare for Secure Distribution
- 1.8. Al for Cold Chain Improvement in Distribution
 - 1.8.1. Importance of the Cold Chain for Sensitive Medicines
 - 1.8.2. Predictive Models for Maintaining Optimal Temperatures
 - 1.8.3. Real-Time Monitoring Algorithms
 - 1.8.4. Tools such as Carrier Sensitech for Cold Chain Control
- 1.9. Automation of Stock Management in Pharmacies
 - 1.9.1. Introduction to Stock Management in Pharmacies
 - 1.9.2. Al Algorithms for Optimizing Product Replenishment
 - 1.9.3. Al Systems for Demand and Consumption Forecasting
 - .9.4. Applications such as Omnicell for Automated Inventory Management
- 1.10. Delivery Route Optimization with Al
 - 1.10.1. Delivery Challenges in the Pharmaceutical Industry
 - 1.10.2. Route Optimization Algorithms for Efficient Delivery
 - 1.10.3. Al for Real-Time Dynamic Route Planning
 - 1.10.4. Example of DHL SmartSensor for Drug Logistics



Among the many advantages that you will acquire by enrolling in TECH, is the development of technological skills that will allow you to adapt to the constant innovations in the Pharmacy sector"

04 **Teaching Objectives**

This program will aim to equip professionals with the skills and knowledge necessary to integrate Artificial Intelligence into all phases of drug production and distribution. Throughout the graduate program, they will develop a deep understanding of how to apply AI to improve efficiency, quality and traceability in the pharmaceutical supply chain. In addition, they will master the use of predictive algorithms to manage the demand for pharmaceutical products, as well as the automation of production processes. All this will allow graduates to increase accuracy and reduce operating costs.



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General Objectives

- Apply artificial intelligence techniques to optimize pharmaceutical production processes
- Develop predictive models to improve inventory and supply chain management
- Implement Al-based quality control systems to ensure product safety and efficacy
- Analyze large datasets to identify patterns and trends in drug production and distribution
- Design machine learning algorithms to automate tasks and improve operational efficiency
- Evaluate the impact of AI on the pharmaceutical industry and propose innovative solutions
- Collaborate with multidisciplinary teams to develop research and development projects in the field of pharmaceutical AI
- Understand the regulations and standards related to the application of AI in the pharmaceutical industry







Specific Objectives

- Develop skills to use Artificial Intelligence to automate and improve efficiency in drug production, ensuring quality and consistency
- Manage the pharmaceutical supply chain using AI to implement solutions that optimize the distribution and logistics of pharmaceutical products, reducing costs and delivery times
- Manage predictive models for drug demand and use AI algorithms to predict the needs of the pharmaceutical market and adjust production and distribution efficiently
- Implement quality control systems in pharmaceutical production using AI to integrate intelligent systems to monitor and control product quality throughout the entire manufacturing and distribution process



Transform your pharmaceutical approach to master Artificial Intelligence in pharmaceutical production and distribution! You will be trained 100% online with a program that adapts to your needs"





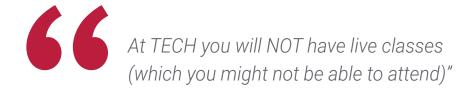


The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.







The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.



TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want"

tech 24 | Study Methodology

Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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.



tech 26 | Study Methodology

A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule"

The effectiveness of the method is justified by four fundamental achievements:

- 1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess 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.

Study Methodology | 27 tech

The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.

You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.

As such, the best educational materials, thoroughly prepared, will be available in this program:



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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

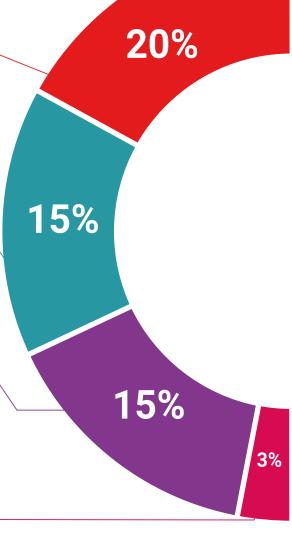
You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



Interactive Summaries

We present 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, international guides... In our virtual library you will have access to everything you need to complete your education.



Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.

Testing & Retesting



We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.

Classes



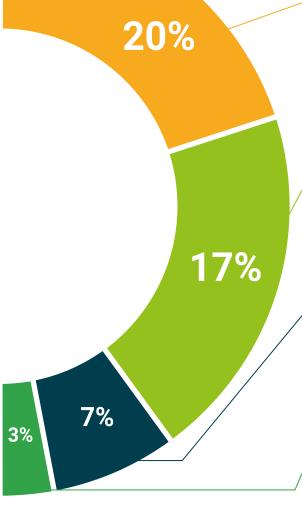
There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an expert strengthens knowledge and memory, and generates confidence for 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.







You will be trained by professors who have extensive experience in technology applied to the pharmaceutical industry! They will share with you the keys and highlights of a constantly evolving industry"

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Management



Dr. Peralta Martín-Palomino, Arturo

- CEO and CTO at Prometeus Global Solutions
- CTO at Korporate Technologies
- CTO at AI Shepherds GmbH
- Consultant and Strategic Business Advisor at Alliance Medical
- Director of Design and Development at DocPath
- Doctorate in Psychology from the University of Castilla La Mancha
- Doctorate in Economics, Business and Finance from the Camilo José Cela University
- Doctorate in Psychology from University of Castilla La Mancha
- Master's Degree in Executive MBA from the Isabel I University
- Master's Degree in Sales and Marketing Management from the 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

Professors

Mr. Popescu Radu, Daniel Vasile

- Independent Specialist in Pharmacology, Nutrition and Dietetics
- Freelance Producer of Didactic and Scientific Content
- Nutritionist and Community Dietitian
- Community Pharmacist
- Researcher
- Master's Degree in Nutrition and Health from the Open University of Catalonia
- Master's Degree in Psychopharmacology from the University of Valencia
- Pharmacist from the Complutense University of Madrid
- Nutritionist-Dietitian by the European University Miguel de Cervantes

Mr. Del Rey Sánchez, Alejandro

- Responsible for implementation of programs to improve tactical care in emergencies
- Degree in Industrial Organization Engineering
- Certification in Big Data and Business Analytics
- Certification in Microsoft Excel Advanced, VBA, KPI and DAX
- Certification in CIS Telecommunication and Information Systems

Ms. Del Rey Sánchez, Cristina

- Talent Management Administrator at Securitas Seguridad España, S.L
- Extracurricular Activities Center Coordinator
- Support classes and pedagogical interventions with Primary and Secondary Education students
- Postgraduate in Development, Delivery and Tutoring of e-Learning Training Actions
- Postgraduate in Early Childhood Care
- Degree in Pedagogy from the Complutense University of Madrid

Mr. Martín-Palomino Sahagún, Fernando

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

Dr. Carrasco González, Ramón Alberto

- 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
- Computer Science and Artificial Intelligence Specialist and Researcher
- Doctorate in Artificial Intelligence from the University of Granada
- Senior Engineer in Computer Science from the University of Granada





tech 36 | Certificate

This private qualification will allow you to obtain a **Postgraduate Certificate in Artificial Intelligence in Pharmaceutical Production and Distribution** 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** private qualification 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 Certificate in Artificial Intelligence in Pharmaceutical Production and Distribution

Modality: online

Duration: 6 weeks

Accreditation: 6 ECTS



has successfully passed and obtained the title of: Postgraduate Certificate in Artificial Intelligence in Pharmaceutical Production and Distribution

This is a private qualification of 180 hours of duration equivalent to 6 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



health confidence people health information tutors education information teaching guarantee accreditation teaching institutions technology learning



Postgraduate Certificate Artificial Intelligence in Pharmaceutical Production and Distribution

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

