Postgraduate Diploma

Financial Process Automation and Risk Management with Artificial Intelligence

tech global university

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Postgraduate Diploma

Financial Process Automation and Risk Management with Artificial Intelligence

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Accreditation: **18 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/us/artificial-intelligence/postgraduate-diploma/postgraduate-diploma-financial-process-automation-risk-management-artificial-intelligence**

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01

Introduction

Financial Process Automation and Risk Management are critical areas that face constant challenges due to the increasing complexity of markets and economic volatility. In this context, Artificial Intelligence emerges as an innovative solution capable of radically transforming these functions. Therefore, it is essential for professionals to adopt these emerging technologies in finance in order to significantly improve the operational efficiency of institutions and reduce human errors, while enhancing analytical and forecasting capabilities. In response to this, TECH has created a pioneering university program focused on Financial Process Automation and Risk Management with Artificial Intelligence. In addition, it is taught in a flexible online mode.

Through this 100% online Postgraduate Diploma, you will handle the tools of Artificial Intelligence to automate Financial Processes and manage investment Risks"

A new report prepared by the World Bank reflects that Artificial Intelligence technologies are driving a profound transformation in the way financial organizations operate, offering solutions that improve efficiency, accuracy and adaptability in the face of an ever-changing global economic environment. Faced with this reality, professionals need to manage the use of advanced algorithms and Machine Learning to identify patterns and anomalies in financial data, in order to identify potential risks.

In this framework, TECH launches a revolutionary program in Financial Process Automation and Risk Management with Artificial Intelligence. The academic itinerary will delve into areas ranging from robotic automation of processes in financial operations or the implementation of automated payment systems using Stripe Radar to cash flow management using Deep Learning algorithms. In addition, the syllabus will address in detail the advanced techniques of financial data analysis using Google Data Studio, providing students with the skills to interpret large volumes of data efficiently. In addition, the program will provide various Machine Learning strategies for quantitative credit risk assessment, allowing a more accurate identification and mitigation of financial risks through sophisticated predictive models.

On the other hand, 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, experts will have access to a didactic library with a variety of multimedia resources in different formats such as interactive summaries, explanatory videos and infographics. The specialists will also be specialized in simulated learning environments to extract valuable lessons that will be applied in their work practice.

This **Postgraduate Diploma in Financial Process Automation and Risk Management with Artificial Intelligence** contains the most complete and up-to-date program on the market. The most important features include:

- Development of practical cases presented by experts in Artificial Intelligence
- The graphic, schematic, and practical contents with which they are created, provide 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

An academic experience with no set schedule and which you can access from any device with an Internet connection. Even from your cell phone!"

You'll use data analytics to support strategic decisions in areas such as investments, financing and portfolio management"

Looking to apply predictive models for financial risk assessment? Achieve it with this university program in only 3 months.

The Relearning system applied by TECH in its programs reduces the long hours of study so frequent in other teaching methods. You will enjoy a natural and progressive learning process!

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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

Through this Postgraduate Diploma, professionals will have a comprehensive understanding of the principles of Financial Process Automation and Risk Management with Artificial Intelligence. In this sense, graduates will develop advanced skills to apply different algorithms such as Neural Networks and Deep Learning models. In addition, students will use tools such as Python or TensorFlow to analyze large volumes of financial data. Also, experts will implement Artificial Intelligence solutions to automate repetitive financial tasks such as bank reconciliation, accounts payable management or financial reporting.

You will optimize financial workflows by integrating automation technologies, therefore improving operational efficiency significantly"

General Objectives

- Apply Artificial Intelligence techniques in financial decision making
- Develop predictive models for financial risk management
- Optimize the allocation of financial resources using AI algorithms
- Automate routine financial processes using machine learning
- Implement natural language processing tools for the analysis of financial data
- Design recommender systems for the financial sector
- Analyze large volumes of financial data using Big Data techniques
- Evaluate the impact of Artificial Intelligence on companies' profitability
- Improve financial fraud detection with the use of AI
- Create financial asset valuation models using Artificial Intelligence
- Develop financial simulation tools based on AI algorithms
- Apply data mining techniques to identify financial patterns
- Develop optimization models for financial planning
- Use neural networks to improve prediction of market trends
- Develop AI-based solutions for financial product personalization
- Implement AI systems for automated investment decisions
- Develop analytical capabilities for interpreting the results of financial AI models
- Investigate the use of Artificial Intelligence in financial regulation and compliance
- Develop AI solutions to reduce costs in financial processes
- Identify opportunities for innovation in the financial sector through AI

Specific Objectives

Module 1. Automation of Financial Department Processes with Artificial Intelligence

- Master the automation of financial processes using Robotic Process Automation to optimize accuracy in tasks such as invoice processing
- Apply Deep Learning techniques to improve liquidity and working capital
- Create automated financial reports through Power Bi, increasing the speed of report writing
- Implement systems that minimize human error in the processing of economic data, increasing the reliability of financial information

Module 2. Analysis and Visualization of Financial Data with Plotly and Google Data Studio

- Develop advanced skills to use tools such as Google Data Studio to create interactive visualizations that can be used to analyze and visualize financial data
- Accurately analyze financial time series and detect both historical trends and recurring patterns

Module 3. Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-Learn

- Implement state-of-the-art credit, market and liquidity risk models using Machine Learning
- Carry out simulation techniques to assess and manage the impact of financial risks in different scenarios

03

Course Management

TECH's priority is to make available to anyone the most comprehensive and updated university programs in the market, which is why it selects exhaustively its different teaching staff. Thanks to this, the present Postgraduate Diploma has the participation of prestigious specialists in Financial Process Automation and Risk Management with Artificial Intelligence. Therefore, they have elaborated several didactic materials that are defined by their high quality and adapted to the demands of today's labor market. In this way, students will gain access to a high-intensity experience that will enable them to improve their career prospects considerably.

You will access a study plan designed by a highly specialized teaching team in Financial Process Automation and Risk Management with Artificial Intelligence"

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
- PhD. in Psychology from the University of Castilla La Mancha
- PhD in Economics, Business and Finance from the Camilo José Cela University
- PhD in Psychology from the 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

Professors

Dr. Carrasco Aguilar, Álvaro

- Sales & Marketing Coordinator at LionLingo
- Researcher in Information Technology Management
- PhD in Social and Health Research: Technical and Economic Evaluation of Technologies, Interventions and Policies Applied to Health Improvement from the University of Castilla La Mancha
- Master's Degree in Social and Health Research from the University of Castilla - La Mancha
- Degree in Political Science and Administration at the University of Granada
- Award for "Best Scientific Article for Technological Innovation for the Efficiency of Health Expenditure"
- Regular speaker at international scientific congresses

04

Structure and Content

This university program has been designed by recognized experts in Financial Process Automation and Risk Management with Artificial Intelligence. The study plan will delve into issues ranging from robotic automation of financial processes or implementation of automatic payment systems with Stripe Radar to cash flow management with Deep Learning. At the same time, the syllabus will delve into the most advanced techniques for analyzing financial data with Google Data Studio. In addition, the program will offer the most effective Machine Learning strategies to evaluate credit risk.

You will implement Artificial Intelligence solutions to automate routine financial tasks such as bank reconciliation, accounts receivable management and reporting"

Module 1. Automation of Financial Department Processes with Artificial Intelligence

1.1. Automation of Financial Processes with Artificial Intelligence and Robotic Process Automation (RPA)
- 1.1.1. AI and RPA for Process Automation and Robotization
- 1.1.2. RPA Platforms for Financial Processes: UiPath, Blue Prism, and Automation Anywhere
- 1.1.3. Evaluation of RPA Use Cases in Finance and Expected ROI

1.2. Automated Invoice Processing with AI with Kofax
- 1.2.1. Configuration of AI Solutions for Invoice Processing with Kofax
- 1.2.2. Application of Machine Learning Techniques for Invoice Classification
- 1.2.3. Automation of the Accounts Payable Cycle with AI Technologies

1.3. Payment Automation with AI Platforms
- 1.3.1. Implementing Automated Payment Systems with Stripe Radar and AI
- 1.3.2. Use of Predictive AI Models for Efficient Cash Management
- 1.3.3. Security in Automated Payment Systems: Fraud Prevention with AI

1.4. Bank Reconciliation with AI and Machine Learning
- 1.4.1. Automation of Bank Reconciliation Using AI with Platforms Such as Xero
- 1.4.2. Implementation of Machine Learning Algorithms to Improve Accuracy
- 1.4.3. Case Studies: Efficiency Improvements and Error Reduction

1.5. Cash Flow Management with Deep Learning and TensorFlow
- 1.5.1. Predictive Cash Flow Modeling with LSTM Networks Using TensorFlow
- 1.5.2. Implementation of LSTM Models in Python for Financial Forecasting
- 1.5.3. Integration of Predictive Models in Financial Planning Tools

1.6. Inventory Automation with Predictive Analytics
- 1.6.1. Use of Predictive Techniques to Optimize Inventory Management
- 1.6.2. Apply Predictive Models with Microsoft Azure Machine Learning
- 1.6.3. Integration of Inventory Management Systems with ERP

1.7. Creation of Automated Financial Reports with Power BI
- 1.7.1. Automation of Financial Reporting using Power BI
- 1.7.2. Developing Dynamic Dashboards for Real-Time Financial Analysis
- 1.7.3. Case Studies of Improvements in Financial Decision Making with Automated Reports

1.8. Purchasing Optimization with IBM Watson
- 1.8.1. Predictive Analytics for Purchasing Optimization with IBM Watson
- 1.8.2. AI Models for Negotiations and Pricing
- 1.8.3. Integration of AI Recommendations in Purchasing Platforms

1.9. Customer Support with Financial Chatbots and Google DialogFlow
- 1.9.1. Implementing Financial Chatbots with Google Dialogflow
- 1.9.2. Integration of Chatbots in CRM Platforms for Financial Support
- 1.9.3. Continuous Improvement of Chatbots Based on User Feedback

1.10. AI-Assisted Financial Auditing
- 1.10.1. IA Applications in Internal Audits: Transaction Analysis
- 1.10.2. Implementation of IA for Compliance Auditing and Discrepancy Detection
- 1.10.3. Improvement of Audit Efficiency with IA Technologies

Module 2. Analysis and Visualization of Financial Data with Plotly and Google Data Studio

2.1. Fundamentals of Financial Data Analysis
- 2.1.1. Introduction to Data Analysis
- 2.1.2. Tools and Techniques for Financial Data Analysis
- 2.1.3. Importance of Data Analysis in Finance

2.2. Techniques for Exploratory Analysis of Financial Data
- 2.2.1. Descriptive Analysis of Financial Data
- 2.2.2. Visualization of Financial Data with Python and R
- 2.2.3. Identifying Patterns and Trends in Financial Data

2.3. Financial Time Series Analysis
- 2.3.1. Fundamentals of Time Series
- 2.3.2. Time Series Models for Financial Data
- 2.3.3. Time Series Analysis and Forecasting

2.4. Correlation and Causality Analysis in Finance
- 2.4.1. Correlation Analysis Methods
- 2.4.2. Techniques for Identifying Causal Relationships
- 2.4.3. Applications in Financial Analysis

2.5. Advanced Visualization of Financial Data
- 2.5.1. Advanced Data Visualization Techniques
- 2.5.2. Tools for Interactive Visualization (Plotly, Dash)
- 2.5.3. Use Cases and Practical Examples

2.6. Cluster Analysis in Financial Data
- 2.6.1. Introduction to Cluster Analysis
- 2.6.2. Applications in Market and Customer Segmentation
- 2.6.3. Tools and Techniques for Cluster Analysis

2.7. Network and Graph Analysis in Finance
- 2.7.1. Fundamentals of Network Analysis
- 2.7.2. Applications of Network Analysis in Finance
- 2.7.3. Network Analysis Tools (NetworkX, Gephi)

2.8. Text and Sentiment Analysis in Finance
- 2.8.1. Natural Language Processing (NLP) in Finance
- 2.8.2. Sentiment Analysis in News and Social Networks
- 2.8.3. Tools and Techniques for Text Analysis

2.9. Financial Data Analysis and Visualization Tools with AI
- 2.9.1. Data Analysis Libraries in Python (Pandas, NumPy)
- 2.9.2. Visualization Tools in R (ggplot2, Shiny)
- 2.9.3. Practical Implementation of Analysis and Visualization

2.10. Practical Analysis and Visualization Projects and Applications
- 2.10.1. Development of Financial data Analysis Projects
- 2.10.2. Implementation of Interactive Visualization Solutions
- 2.10.3. Evaluation and Presentation of Project Results

Module 3. Artificial Intelligence for Financial Risk Management with TensorFlow and Scikit-Learn

3.1. Fundamentals of Financial Risk Management
- 3.1.1. Risk Management Basics
- 3.1.2. Types of Financial Risks
- 3.1.3. Importance of Risk Management in Finance

3.2. Credit Risk Models with AI
- 3.2.1. Machine Learning Techniques for Credit Risk Assessment
- 3.2.2. Credit Scoring Models (Scikit-Learn)
- 3.2.3. Implementation of Credit Risk Models with Python

3.3. Market Risk Models with AI
- 3.3.1. Market Risk Analysis and Management
- 3.3.2. Application of Predictive Market Risk Models
- 3.3.3. Implementation of Market Risk Models

3.4. Operational Risk and its Management with AI
- 3.4.1. Concepts and Types of Operational Risk
- 3.4.2. Application of AI Techniques for Operational Risk Management
- 3.4.3. Tools and Practical Examples

3.5. Liquidity Risk Models with AI
- 3.5.1. Fundamentals of Liquidity Risk
- 3.5.2. Machine Learning Techniques for Liquidity Risk Analysis
- 3.5.3. Practical Implementation of Liquidity Risk Models

3.6. Systemic Risk Analysis with AI
- 3.6.1. Systemic Risk Concepts
- 3.6.2. Applications of AI in the Evaluation of Systemic Risk
- 3.6.3. Case Studies and Practical Examples

3.7. Portfolio Optimization with Risk Considerations
- 3.7.1. Portfolio Optimization Techniques
- 3.7.2. Incorporation of Risk Measures in Optimization
- 3.7.3. Portfolio Optimization Tools

3.8. Simulation of Financial Risks
- 3.8.1. Simulation Methods for Risk Management
- 3.8.2. Application of Monte Carlo Simulations in Finance
- 3.8.3. Implementation of Simulations with Python

3.9. Continuous Risk Assessment and Monitoring
- 3.9.1. Continuous Risk Assessment Techniques
- 3.9.2. Risk Monitoring and Reporting Tools
- 3.9.3. Implementation of Continuous Monitoring Systems

3.10. Projects and Practical Applications in Risk Management
- 3.10.1. Development of Financial Risk Management Projects
- 3.10.2. Implementation of AI Solutions for Risk Management
- 3.10.3. Evaluation and Presentation of Project Results

You will benefit from an enjoyable learning experience through the didactic formats offered by this program, such as the explanatory video or the interactive summary"

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

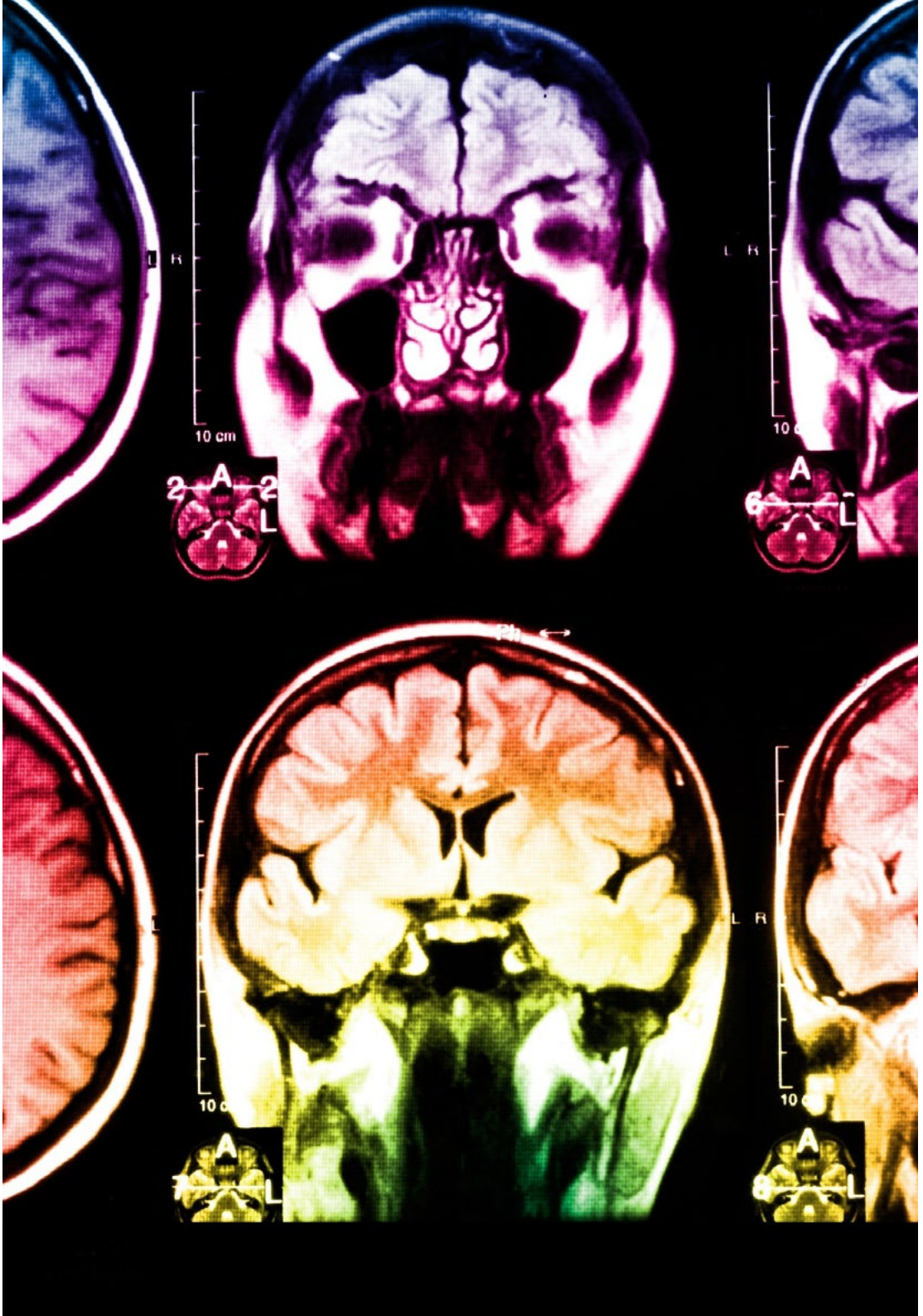
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines different teaching elements in each lesson.

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.

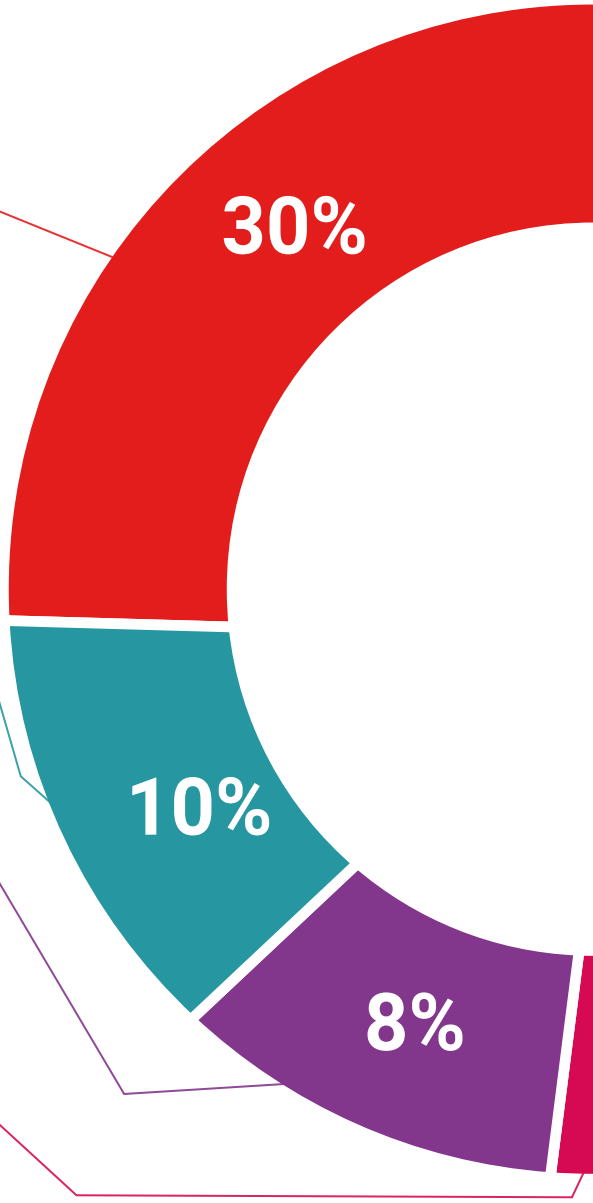
Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

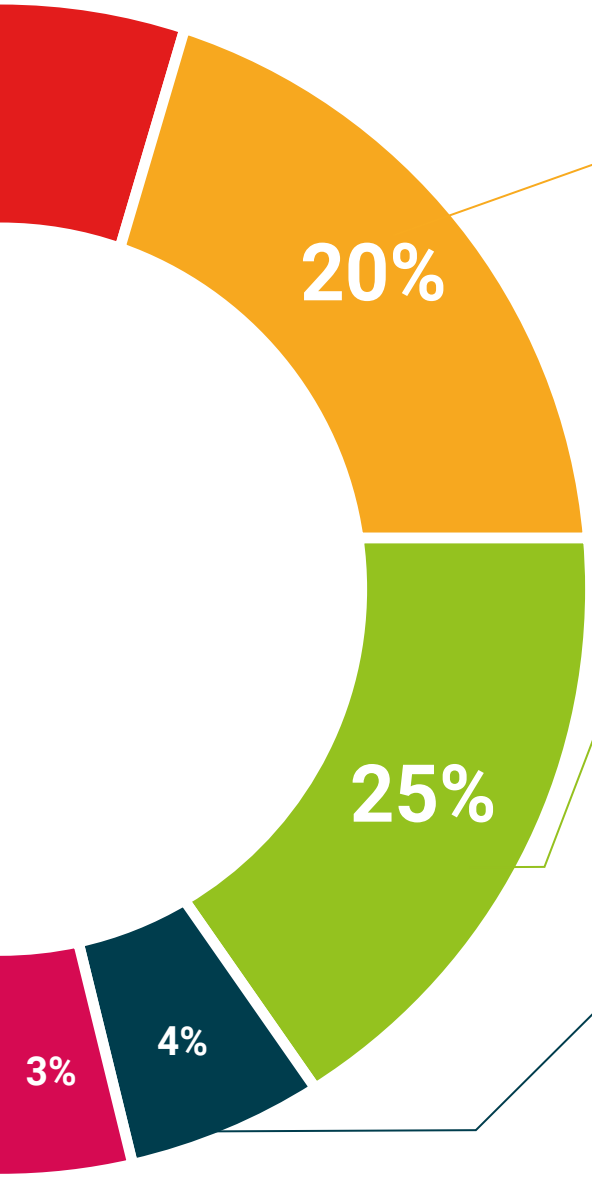
Practising Skills and Abilities

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 Diploma in Financial Process Automation and Risk Management with Artificial Intelligence guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.

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

This private qualification will allow you to obtain a **Postgraduate Diploma in Financial Process Automation and Risk Management with Artificial Intelligence** 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 Diploma in Financial Process Automation and Risk Management with Artificial Intelligence**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Financial Process Automation and Risk Management with Artificial Intelligence

This is a private qualification of 540 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
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 Global University will make the necessary arrangements to obtain it, at an additional cost.

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