Postgraduate Certificate

Stock Market Analysis in Algorithmic Trading

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Postgraduate Certificate
Stock Market Analysis in Algorithmic Trading

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

Website: **www.techtitute.com/us/school-of-business/postgraduate-certificate/stock-market-analysis-algorithmic-trading**

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01

Introduction to the Program

The world of finance is transforming at a dizzying pace, driven by technology and the rise of algorithmic trading. In fact, according to a report by Markets and Markets, the global algorithmic trading market is projected to reach $31.6 billion by 2027, highlighting its growing dominance and impact on financial decision-making. In response to this reality, TECH has developed this postgraduate program as an exceptional academic opportunity to master the essential tools and strategies of stock market analysis applied to trading. Through a 100% online methodology and under the guidance of industry specialists, professionals will elevate their profiles toward success in the most dynamic markets.

You will master technical indicators and order flow analysis to optimize your decisions in Algorithmic Trading"

Algorithmic trading has revolutionized operations in financial markets, enabling order execution at speeds and volumes unattainable through direct human intervention. As a result, the ability to understand and apply in-depth stock market analysis becomes a fundamental competitive advantage for those seeking to enter or strengthen their presence in this field. Mastery of techniques such as technical and fundamental analysis thus becomes the foundation upon which successful algorithmic strategies are built.

In response to this demand, finance professionals and investment enthusiasts are driven to update their knowledge and develop the skills necessary to design and optimize trading algorithms. Emerging from these requirements is TECH's Postgraduate Certificate in Stock Market Analysis in Algorithmic Trading. Through a comprehensive, multidisciplinary approach, the program covers everything from basic principles to advanced strategies, providing a holistic view for making automated decisions.

The syllabus delves into critical topics such as economic-financial diagnostics and business valuation using both static and dynamic methods, including the use of artificial intelligence for valuation. It also explores technical analysis in depth, examining candlestick patterns, advanced indicators such as RSI and MACD, and trading strategies in trending or ranging markets. In this way, professionals will be able to effectively integrate these tools into the design of their algorithms.

This academic qualification is delivered through a 100% online methodology, offering professionals the flexibility to study while maintaining their professional and personal commitments. Course content is accessible 24 hours a day, 7 days a week, from any device with an internet connection. Finally, the training is enhanced by the Relearning method, which supports the assimilation of key concepts through systematic reinforcement.

This **Postgraduate Certificate in Stock Market Analysis in Algorithmic Trading** contains the most complete and up-to-date program on the market. The most important features include:

- The development of practical case studies presented by experts in Stock Market Analysis in Algorithmic Trading
- 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

You will refine your skills in asset evaluation and strategy configuration for more effective Algorithmic Trading"

A 100% online program that allows you to study anytime, from anywhere in the world"

The wide range of practical resources offered in this university program will help you reinforce your theoretical knowledge.

TECH will provide you with the most innovative instructional methodology in today's academic landscape.

The faculty includes professionals in the field of stock market analysis in Algorithmic Trading, who bring their real-world experience to the program, along with renowned specialists from leading institutions 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 an immersive learning experience designed to prepare for real-life situations.

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

02

Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs, available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it has a huge faculty of more than 6,000 professors of the highest international prestige.

Study at the largest online university in the world and ensure your professional success. The future begins 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 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.

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.

03

Syllabus

The academic content of this program has been carefully structured by a panel of experts in the fields of stock market analysis and Algorithmic Trading. As a result, the program will explore the in-depth theory of market efficiency, an essential concept for understanding price dynamics. It will also emphasize intermarket analysis and correlations between various financial assets such as commodities, currencies, and equities, providing a comprehensive perspective.

You will dive into Market Efficiency Theory and master Order Flow Analysis for a 360° view of Algorithmic Trading"

Module 1. Stock Market Analysis in Algorithmic Trading

1.1. Evaluation of Stock Market Analysis in Algorithmic Trading
- 1.1.1. Technical Analysis vs. Fundamental Analysis
- 1.1.2. Market Efficiency Theory
- 1.1.3. Principles of Trading Based on Analysis

1.2. Fundamental Analysis of Companies
- 1.2.1. Economic and Financial Diagnosis
- 1.2.2. Financial Statements and Key Ratios
- 1.2.3. Company Valuation by Static Methods
- 1.2.4. External Factors Affecting Stocks

1.3. Company Valuation
- 1.3.1. Market Consensus
- 1.3.2. Valuation by Multiples
- 1.3.3. Valuation by Dividend Discount
- 1.3.4. Valuation by Discounted Cash Flow
- 1.3.5. Use of AI and Company Valuation Bots

1.4. Technical Analysis: Basic Principles for Trading
- 1.4.1. Types of Charts and Their Interpretation
- 1.4.2. Volume and Trend
- 1.4.3. Key Technical Indicators

1.5. Japanese Candlestick Patterns
- 1.5.1. Individual Candles and Combinations
- 1.5.2. Reversal and Continuation Patterns
- 1.5.3. Applications in Trading

1.6. Advanced Technical Indicators to Implement in Algorithmic Trading
- 1.6.1. RSI, MACD, and Bollinger Bands
- 1.6.2. Oscillators and Moving Averages
- 1.6.3. Configuration and Application

1.7. Technical Analysis Strategies to Implement in Trading
- 1.7.1. Trend Trading
- 1.7.2. Range Trading
- 1.7.3. Trading with Volume

1.8. Intermarket Analysis and Correlations
- 1.8.1. Relationship Between Financial Assets
- 1.8.2. Commodities, Currencies, and Equities
- 1.8.3. Hedging and Diversification

1.9. Order Flow Analysis
- 1.9.1. Level 2 and Order Book
- 1.9.2. Market Depth and VWAP
- 1.9.3. *Tape Reading*

1.10. Limitations of Stock Market Analysis
- 1.10.1. Biases and Common Mistakes
- 1.10.2. Market Manipulation
- 1.10.3. Real Applications and Context

You will develop sophisticated Algorithmic Trading strategies by integrating fundamental analysis and the most relevant market signals"

04

Teaching Objectives

This program will equip finance professionals with the skills needed to develop and optimize automated trading systems. To that end, it focuses on building the capacity for economic and financial diagnostics, along with an understanding of the limitations of stock market analysis. Graduates will acquire a critical and practical perspective, essential for applying strategies in real-world trading contexts. They will also strengthen their ability to distinguish between different chart types and interpret them, enabling informed decision-making in trading operations.

You will uncover the limitations of stock market analysis and enhance your ability to perform accurate economic-financial diagnostics—sharpening your expertise in Algorithmic Trading"

General Objectives

- Master the principles and evaluation of stock market analysis within the context of algorithmic trading, distinguishing between technical and fundamental approaches
- Gain the ability to perform in-depth economic-financial diagnostics of companies using financial statements and key ratios for decision-making
- Apply various business valuation methods, from static approaches to dividend discount and discounted cash flow models, including the use of artificial intelligence
- Interpret and apply the basic principles of technical analysis for trading, including reading charts, volume, and market trends
- Identify and use Japanese candlestick patterns, both individual and combined, to anticipate trend reversals and continuations
- Configure and apply advanced technical indicators such as RSI, MACD, and Bollinger Bands, optimizing their use in algorithmic trading
- Develop robust technical analysis strategies adapted to trending, ranging, and high-volume market conditions for effective trading
- Analyze correlations between financial assets within the framework of intermarket analysis, applying hedging and diversification concepts
- Understand and operate based on order flow analysis, interpreting Level 2 data, order books, and tape reading
- Evaluate the inherent limitations of stock market analysis, recognizing biases, common errors, and the influence of market manipulation in real-world applications

Specific Objectives

- Distinguish between technical and fundamental analysis, evaluate market efficiency theory, and establish the principles of analysis-based trading to gain a comprehensive understanding of the stock market landscape
- Perform business valuations using static methods, multiples, and discounted cash flow models, while integrating artificial intelligence and bots into the valuation process
- Interpret Japanese candlestick patterns, configure advanced technical indicators such as RSI and MACD, and design trading strategies for trending and ranging markets for implementation in algorithmic systems
- Analyze intermarket correlations and order flow, identifying the limitations of stock market analysis, including biases and manipulation, to support informed and contextualized decision-making

You will be prepared to lead the next wave of trading by combining fundamental, technical, and algorithmic analysis with a strategic vision"

05

Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.

TECH will prepare you to face new challenges in uncertain environments and achieve success in your career"

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.

"At TECH you will NOT have live classes (which you might not be able to attend)"

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"*

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.

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.

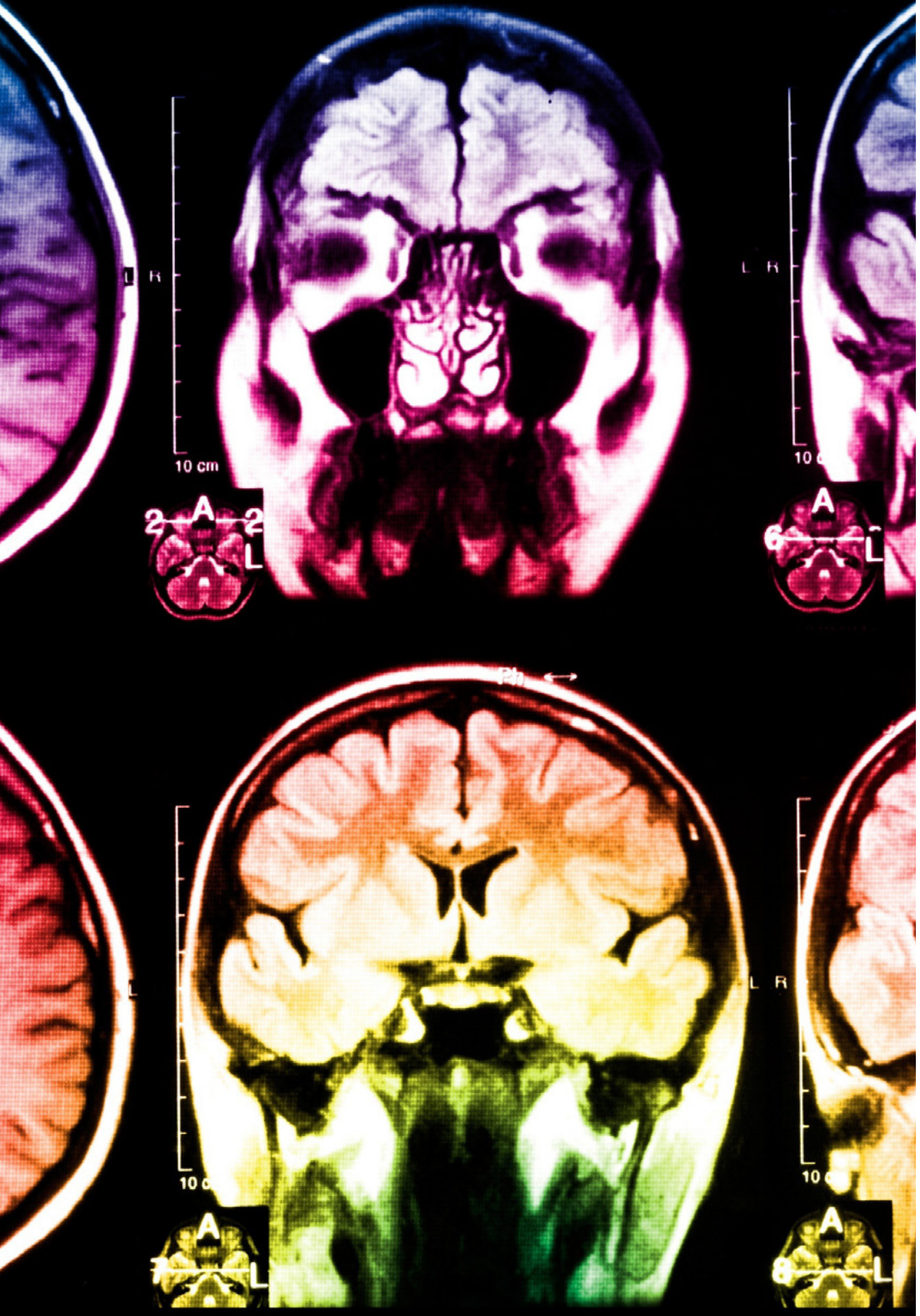
In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

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.



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.

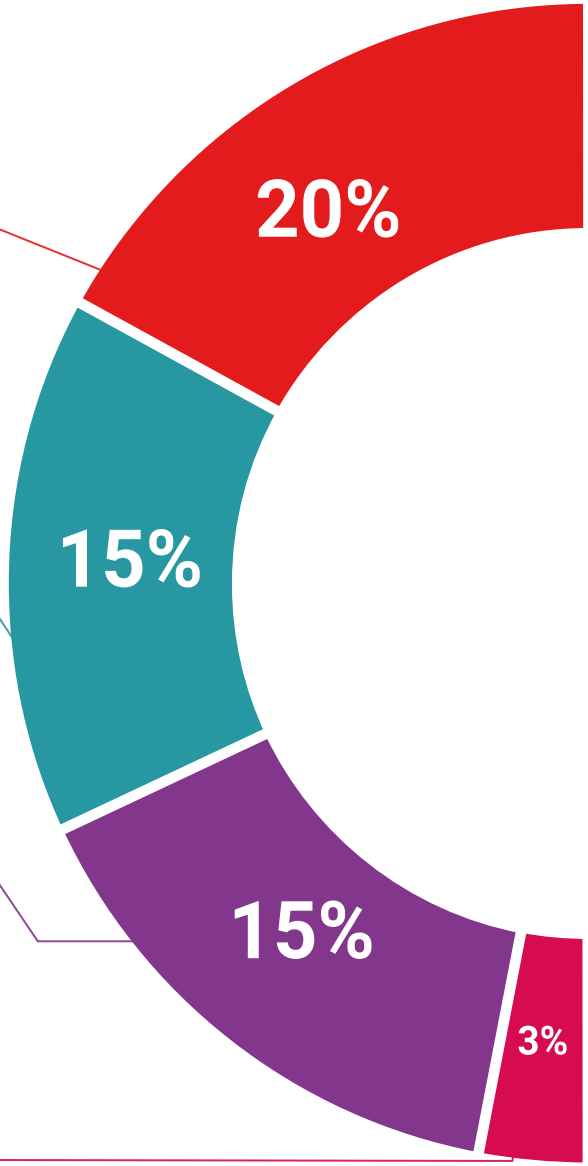
Interactive Summaries

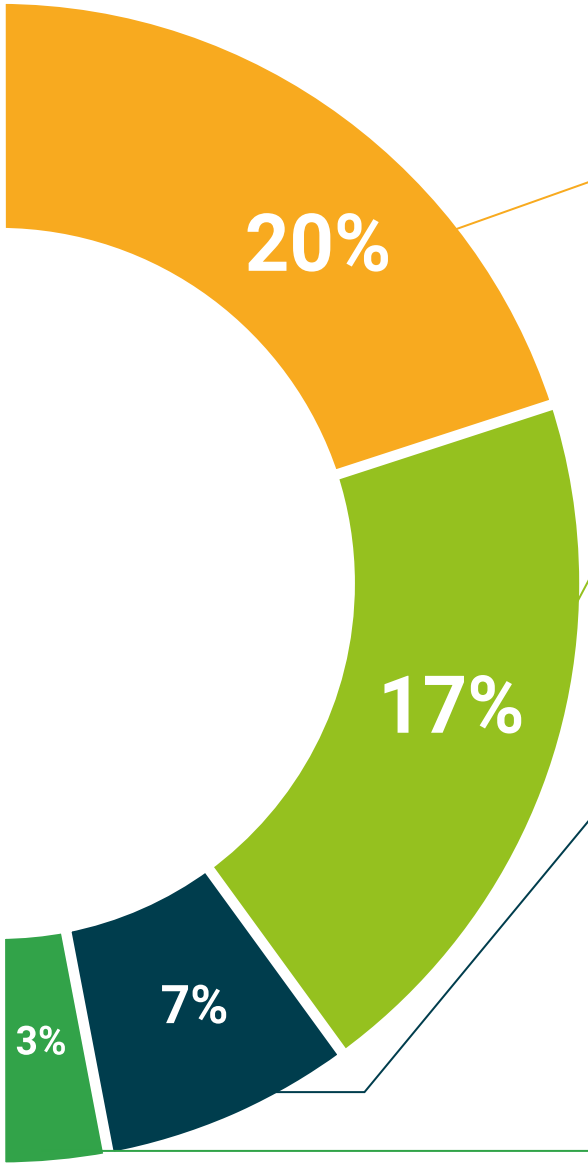
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.





Case Studies

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.

06

Teaching Staff

The teacher selected by TECH for this program brings a unique combination of academic expertise and a strong professional background in algorithmic trading and stock market analysis. He has actively operated in financial markets, integrating technology with the most sophisticated analytical strategies. As such, he not only masters advanced tools for business valuation and technical analysis but has also been directly involved in the development and implementation of trading algorithms in complex environments.

You will be guided by a highly respected and experienced instructor who masters the most advanced strategies in Algorithmic Trading and Stock Market Analysis"

Management

Dr. Gómez Martínez, Raúl

- Founding Partner and CEO of Open 4 Blockchain Fintech
- Founding Partner of *InvestMood Fintech*
- Apara's CEO
- PhD in Business Economics and Finance from the University Rey Juan Carlos de Madrid
- Bachelor's Degree in Economics and Business Administration, Complutense University of Madrid
- Master's Degree in Economic Analysis and Financial Economics, Complutense University of Madrid

Dr. Lara Bocanegra, Ana María

- Company Owner (Financial)
- Ph.D. from the University of Seville
- Trader of NYSE Stocks at World Trade Securities
- Junior Trader at Swiftrad
- Mechanical Behaviour of Materials from University of Seville
- Experimental Techniques II from University of Seville
- Materials Science from University of Seville
- Advanced Trading Stocks Techniques from University of Seville

A unique, essential and decisive learning experience to boost your professional development"

07

Certificate

The Postgraduate Certificate in Stock Market Analysis in Algorithmic Trading guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 diploma for the **Postgraduate Certificate in Stock Market Analysis in Algorithmic Trading** 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 Stock Market Analysis in Algorithmic Trading**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

tech global university

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

Postgraduate Certificate in Stock Market Analysis in Algorithmic Trading

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

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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