



The Mechanics of Market Operations

What to know about technology and financial products

Instituto BME

www.institutobme.es/es/home.html

Instituto BME is the training center of BME. It has a faculty of market experts with extensive teaching experience.

Spacious training rooms equipped with the latest technology, designed for both in-person and online training.

Our training programs are aimed at market professionals, regulatory bodies, individual investors, students, and, in general, anyone interested in entering or deepening their knowledge in the world of finance. We are the market; we were born with it and have evolved together.

Since the creation of Instituto BME in 1991, we have over 30 years of experience and more than 140,000 professionals who endorse us.

We have the ISO 9001:2015 Quality Certificate, meeting high-quality standards in our courses.

We have multiple training rooms equipped with the latest technology, designed for both in-person and online training.



Santander Financial Institute

www.sanfi.es

Santander Financial Institute (SANFI) was established in 2012 as a center of the UCEIF Foundation. Since 2021, it has also been constituted as a University Institute in Banking and Finance, developing its activity through the pillars of training, research, and transfer in the financial sector, aiming to be an international benchmark in this field.

The UCEIF Foundation was established in 2006 by the University of Cantabria and Banco Santander, developing an intense and recognized activity at the national and international levels since then.

SANFI is committed to the values and principles of action not only of its founding institutions but also of the companies, organizations, and institutions that contribute to the development of talent, continuous training, and the promotion of research through academic excellence for the progress of people and society.

Its purpose is to identify, support, and promote knowledge, developing people's talent and fostering research through its programs and activities, thus providing candidates and professionals with the competencies necessary for their personal and professional future.

We work for the current and future generations of university students, financial sector professionals, and academics and researchers in the field of economics in general, and banking and the financial sector in particular. Our training programs, present in five countries and some of which have been taught for more than 25 years, are characterized by their quality and reputation. Among SANFI's university degrees, the Master in Banking and Financial Markets stands out, currently offered in Spain, Mexico, Morocco, Brazil, and Chile, and recognized as one of the best master's degrees in Spain.



Why participate in this program?

Studying a program on the mechanics of market operations provides you with the necessary knowledge to understand and efficiently manage the fundamental systems and processes that underpin the functioning of financial markets.

With the aim of offering comprehensive and specialized training in this field, we propose this program, where we will delve into the crucial elements of the post-trade process, equipping the audience with the knowledge and skills necessary to face the main challenges of this area.

What will you achieve?

With this program, you will be able to:

1. Understand the fundamentals and structure of financial markets.
2. Acquire knowledge about different types of financial instruments and their characteristics.
3. Analyze and evaluate the functioning of trading and clearing systems.
4. Develop skills to manage risks associated with market infrastructure.
5. Learn about regulations and legal frameworks governing financial markets.
6. Familiarize yourself with technologies and platforms used in market infrastructure.
7. Obtain a global view of the factors influencing the efficiency and stability of markets.

What will you see in this program?

The syllabus covers the main aspects related to transaction settlement, custody services, counterparty risk, and its mitigation with CCPs, as well as all phases of transaction management.

Additionally, the program addresses and breaks down the main technological challenges and opportunities represented by advancements like DLT (Blockchain) to provide a 360° training in the field of market infrastructure.

The entire program is based on a constant practical implementation of the material. This ensures the highest knowledge transfer and its direct applicability to specific job positions in the sector once the course is completed.



A Partnership between SANFI and BME

Instituto BME and SANFI regularly collaborate on training programs very successfully, including in the Financial Advisory Certification and Braindex, the only financial training platform accredited by La Bolsa, which features expert faculty and an exclusive community. This collaboration provides students with combined experience, offering programs with international students, educational synergies, access to high-quality resources, networking and professional opportunities, and recognition and prestige.

The solid relationship between both institutions makes this program a great learning opportunity from two schools with a recognized academic track record.

Top-Level Faculty

The program features top-level professors in all subjects. The faculty offers a unique combination of practical experience and academic knowledge, thus enriching the students' educational experience.

The instructors are leaders in their fields, capable of inspiring, guiding, and challenging their students toward academic and professional success.

Internship Pool

During the program, students are offered the opportunity to access an internship pool.

Joint Program Certification

The joint certification from Instituto BME and SANFI for this program represents a seal of excellence in the financial sector, combining the experience and prestige of two leading institutions to enhance the professional and academic development of the students.



Target Audience

The program is aimed at recent graduates and junior professionals in the financial sector interested in developing their careers in the financial sector.



It is also suitable as a skills enhancement program for senior professionals with little or no experience in the financial sector who wish to broaden their skill set.



We highly value the diversity of technical profiles in our students. Having prior financial knowledge is not essential, as our program offers solid training in this area. We seek candidates not only from fields such as Business Administration or Economics but also from disciplines like engineering, physics, and mathematics, as these profiles are highly interesting and in demand in the financial world.



For those with non-economic or business educational backgrounds but with experience in the banking or financial sector, around two to three years of work experience in the sector may be sufficient to undertake the more comprehensive training program.

Training Itinerary



9 hours

Module I: Quantitative Finance

February 17–19

- Financial Mathematics
 - Time Value of Money
 - Interest Rates
 - Market Conventions
 - Capitalization and Discounting
 - Loan Amortizations
 - Linear Interpolation
- Basic Statistics
- Time series



6 hours

Module II: Financial System

February 24–25

- Financial System I
 - The Role of Central Banks
 - Major Central Banks Worldwide
 - The Role of Regulators
 - Regulators in Different Jurisdictions
 - Trade Bodies (ISDA)
 - Rating Agencies
- Financial System II
 - Monetary Policy
 - Monetary Policy Instruments
 - Impact of Macroeconomic Indicators on Markets



6 hours

Module III: Market Microstructure

February 26 – March 3

- Market Functioning
- Market Phases
- Auctions and Allocation Mechanisms
- Order Types
- Liquidity



9 hours

Module IV: Market Infrastructure and Participants

March 4–10

- Execution
- Settlement
- Custody
- Value Chain Participants: Brokers–Dealers, Markets, CCPs, Third Parties



6 hours

Module V: Trading Venues (Exchanges, MTF, OTF, and IS)

March 11–12

- Functioning of Trading Venues
- Best Execution Metrics
- Major Trading Venues



6 hours

Module VI: Depositaries

March 17–18

- Iberclear
- Arco System
- Equity Operations
- Fixed Income Operations



Module VII: CCPs – Central Counterparties

March 19–24

1. Functioning of the CCP
 - Member and Account Structure
 - SPAN and HVAR Models
 - Default Management: Auctions and Simulations (Firedrill)
 - Regulations: Rules, General Terms and Circulars
 - Fees/Events: Give-ups, Transfers, Portability, Allocations, Compression, Netting, Average Price, Cascade and Physical Delivery
 - Links to Trading and Affirmation Platforms
 - Competitors
 - Clearing Models
2. Margins and Settlements
 - Initial Margin, Variation Margin, Default Fund, and Stress Tests
 - Types of Margin Calls
 - Collateral Management: Cash and Non-Cash, Haircuts
 - Market Price Management
 - Settlement to Market and Collateral to Market

6 hours



3 hours

Module VIII: Payment Systems

March 25

- Payment Systems in T2S
- CLS in FX



3 hours

Module IX: Trade Repositories

March 26

- Client Accounts
- Transaction reporting
- Connectivity
- Reconciliation
- Client reporting



Módulo X: Asset Classes

March 31 – April 21

32 hours

1. Fixed Income

- Fixed Income market instruments
- Trading in the Fixed Income market
- Bond valuation
- Zero-Coupon Curve
- Bond risk measures
- Repos, simultaneas, and forward bonds

2. Equities

- Primary Market
- Secondary Market
- Market Model

3. Equity Futures

- Basic positions
- Calculation of forward prices in stocks and indices
- Operations: Investment, hedging, and arbitrage.

4. Equity Options

- Option valuation models
- Intrinsic and time value
- Option classification
- Call-Put Parity
- Sensitivities
- Implied volatility: Skew and volatility surfaces
- Simple strategies: Protective Put and Buywrite
- Directional combined strategies: Vertical spreads and Risk reversals
- Volatility combined strategies: Straddle, Strangles, and Butterflies

5. CFDs and Warrants

6. Zero-Coupon Curve

- Discount factors
- Yield to Maturity (YTM)
- Bootstrapping
- Linear and exponential interpolation

7. Short-Term Interest Rate Futures (FRAs and EURIBOR)

- Money market and reference rates
- Forward Rate Agreement:
 - ETTI
 - Implied rates
 - Conventions
 - Settlement
 - Operations (speculation, hedging, and arbitrage)
- EURIBOR: contract specifications, settlement, and operations
- Euribor vs FRA

8. Long-Term Interest Rate Futures (on Notional Bonds)

- Underlying assets and contract specifications (EUREX)
- Settlement and clearing
- Conversion Factor
- Theoretical future price with and without an intermediate coupon
- Determination of Cheapest to Deliver (CTD) before maturity via implied repo and at maturity
- Term structure of prices
- Operations: Speculation, hedging, and arbitrage
- Practical exercises in Excel

9. Interest Rate Swaps (IRS)

- Valuation: FRA approach and plain vanilla bond + FRN approach
- Classification and typology
- Financial sense
- Implied rates
- Quoting
- Negotiation and contracting
- Hedging

10. Currency Markets and Products

- Factors affecting exchange rates: Fundamental analysis
- Theories of exchange rate formation
- Spot FX and cross rate
- Particular characteristics: Market conventions
- Determination of forward currency price: Implied rates

11. Introduction to Commodity Markets

- Definition, Interest, and Motivation
- Differences from other assets
- Classification
- Markets
- COT Report
- Price formation, volatility, and correlation
- Forward Curve
- Definition
- Shape
- Liquidity
- Volatility
- Correlation
- Seasonality
- Metals market
- Energy market
- Soft commodities
- Freight
- Hedging

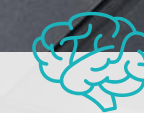


24 hours

Módulo XI: Regulation

April 22 – May 7

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| <p>1.Mifid II</p> <ul style="list-style-type: none">• Introduction and investor protection• Advisory and portfolio management• Client and product classification• Record-keeping• Conflicts of interest <p>2.BMR</p> <ul style="list-style-type: none">• Types of benchmarks• Administrators• Impact on the industry• Fallbacks <p>3.MIFIR</p> <ul style="list-style-type: none">• Investor protection in wholesale business• Best execution policies• Trading venues• Product governance• Transparency requirements• Incentives and Research• Algorithmic trading• Types of trading venues and the role of systematic internalisers• Trading obligation• Pre- and post-trade transparency• Impact on business models <p>4.EMIR</p> <ul style="list-style-type: none">• Basics• Clearing obligation• Reporting• Risk mitigation | <p>5.REMIT</p> <ul style="list-style-type: none">• Affected products• Operation• Regulatory support <p>6.SFTR</p> <ul style="list-style-type: none">• Securities lending• Repos and reverse repos• Margin lending• Obligated entities• Reportable information <p>7.CSDR</p> <ul style="list-style-type: none">• Introduction to the Regulation• Reconciliation• Book-entry system• Use of LEI• Settlement discipline• Transparency• Risk management <p>8.FMI Governance</p> <p>9. Market Abuse Regulation (MAR)</p> <ul style="list-style-type: none">• Insider information• Market manipulation• Penalties <p>10.MiCAand DORA</p> <ul style="list-style-type: none">• MiCA<ul style="list-style-type: none">• Context• European Commission Digital Finance Strategy• Commission Proposal 24/09/2021• Council Position 25/11/2021• Implementation and Impact• DORA<ul style="list-style-type: none">• Context• Basic pillars |
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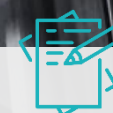


12 hours

Módulo XII: DLT Technology

May 12 – 19

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| <p>1.Introduction to Blockchain</p> <ul style="list-style-type: none">• Introduction• Previous attempts to create online payment systems.• The double-spending problem.• Bitcoin.• Life cycle of a transaction.• Key successes and proposed innovations.• Blockchain Technology• What is a Blockchain?• Types of Blockchains• Transactions and blockchain• Characteristics.• Strengths and weaknesses.• Ethereum – The Universal Computer• What is Ethereum?• Smart Contracts, DApps, and DAOs• Tokenization <p>2. Use Cases and Legal Aspects</p> <ul style="list-style-type: none">• Use Cases• Digital Identity• Banking and capital markets• Other use cases in the public and private sectors• Legal and Regulatory Aspects• Regulatory landscape around blockchain• Legal aspects of ICOs and Crowdsales• Smart contracts• Global legislation | <p>3. Technical Fundamentals of Blockchain</p> <ul style="list-style-type: none">• Security and Cryptography Concepts• Cryptographic Hash Functions• Public Key Cryptography and Digital Signatures• Transactions• Life cycle of a transaction• Structure of a transaction• Blockchain• Structure of a block• Linking blocks• Mining and Consensus Algorithms• What is a consensus algorithm?• Main consensus algorithms <p>4. Introduction to Smart Contract Development in Ethereum and Practical Case</p> <ul style="list-style-type: none">• What is a Smart Contract?• Structure of a contract in Solidity• Data types• Deployment of contracts• Technology ecosystem: Web3, Truffle, IPFS, etc.• Practical Case |
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Final Exam
2 hours
May 30th



Visits and Program Closure
(in-person in Madrid and
virtual)
5-6th June 2025

TOTAL
120 hrs.

Teaching Methodology



The sessions have a strong practical component, using both Excel® spreadsheets and specialized software.

Each participant must have a computer to complete the practical portion of the course. In the on-site modality, a computer is provided during class.

In the virtual modality, participants must have their own computer to follow the class.



Students will have access to an internship pool during the program.



Enrollment in the Program

Classes are offered in two simultaneous modalities, allowing participants to choose the one that suits them best at any given time:

1. On-site at the Instituto BME classrooms in the Palacio de la Bolsa in Madrid.
2. Live video stream to facilitate virtual participation.

Additionally, all classes are recorded and made available to students on the course platform.



The evaluation of the various subjects will be conducted through multiple-choice exams and practical cases at the end of each subject.

At the end of the program, there will also be a Final Review Exam covering the entire program.



At the end of the program, an optional two-day on-site stay in Madrid will be available, including visits to the Madrid Stock Exchange and some companies.

The program's Closing Ceremony will be held both on-site at the Madrid Stock Exchange and virtually in real-time.

Información general



Schedule

DURATION



The duration of the program is **120 hours** over **3 consecutive months**, from February 17th to May 30th.

The visits and Program Closing will take place on June 6th, 2025.

CLASS SCHEDULE



Monday, Tuesday, and Wednesday from 18:00 to 21:15h CET.

MORE INFORMATION AND REGISTRATION

For more information about this training program, you can contact Instituto BME at the phone number **+34 649192275** and at the following address:

www.institutobme.es/es/

Inscripción

PRICE



3.600 EUR

SCHOLARSHIPS AND DISCOUNTS

Instituto BME and SANFI offer a scholarship program for students who meet certain requirements, as well as discounts for companies for multiple registrations.

Individuals	Early payment discount	Single payment discount	Maximum total discount
Sept–Nov 2024	15%	5%	20%
December 2024	10%	5%	15%
Jan–Feb 2025	0	5%	5%
SIX Group Employees (until February)	15%	5%	20%
Alumni (until Nov–Dec)	15%	5%	20%
Companies	Total discount per student (non-cumulative)		
5 or more employees	25%	Per student	

Teaching staff



COORDINATORS



**D. ENRIQUE
CASTELLANOS
HERNÁN**

FRM, mFIA
Director of Instituto BME



**DÑA. BELÉN
DÍAZ DÍAZ**

Associate Professor of Financial
Economics
Academic Director of SANFI

SOME OF OUR TRAINERS

**EMILIO
GAMARRA**

Senior Product Manager,
BME Clearing

**JOSÉ LUIS
BUJANDA**

Training Coordinator, Instituto
BME

**ROBERTO
KNOP**

Broker Sales Representative,
Tradition

**JOSÉ RAMÓN
GUERRA**

CEO, Hoplos



Students will have the support of the training coordination team at Instituto BME and SANFI, who will coordinate the training, handle any issues, and provide personalized monitoring for all student needs during the program.

