



World Bank – Milken Institute

# Public Financial Asset Management Program (PFAM)

at Bayes Business School (formerly Cass)

Information for prospective applicants



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BUSINESS SCHOOL  
CITY, UNIVERSITY OF LONDON



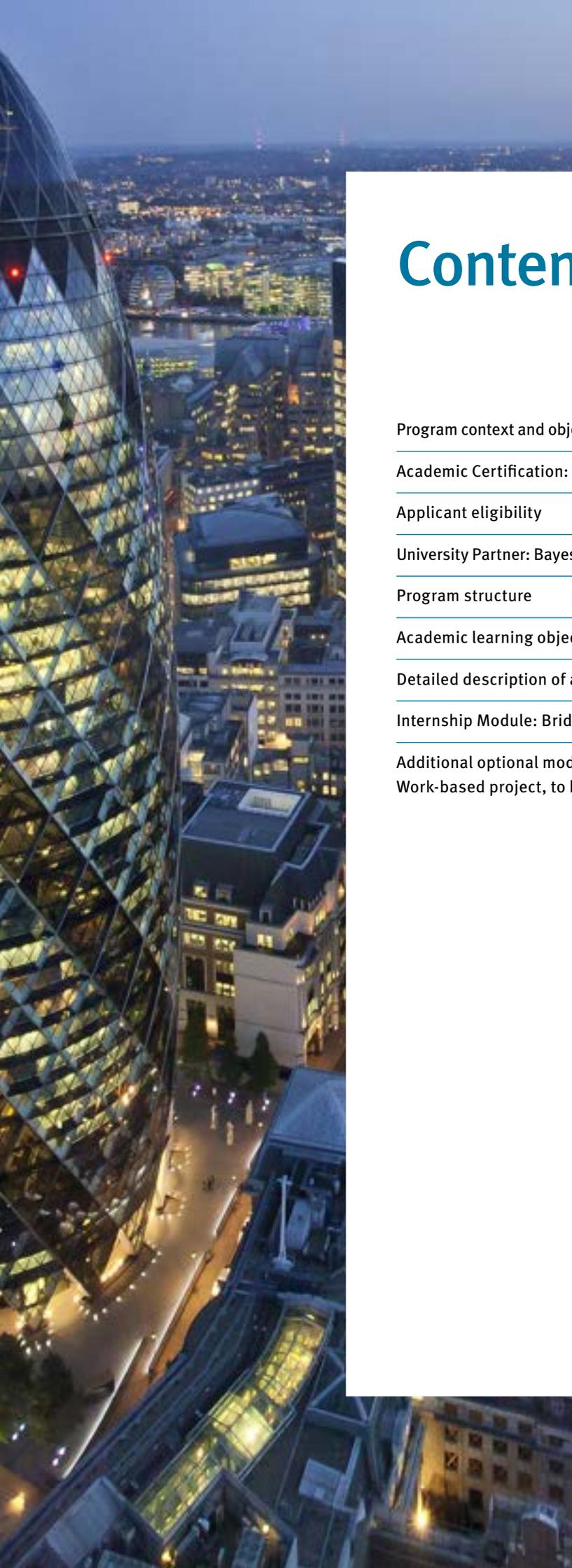
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# Program context and objectives

## Public Financial Asset Management Program (PFAM)

Today sovereign wealth funds and public pension funds manage almost \$32 trillion in assets and central banks manage more than \$11 trillion in reserves worldwide. Financial markets, technology, and the complexity of strategies behind investment management and fund governance are rapidly evolving.

Demographic shifts, economic growth, rising levels of pension savings, and natural resource discoveries are making it increasingly crucial for developing and emerging economies to design a carefully structured approach for the governance and management of public financial assets. Moreover, the extremely long cycle of low and negative interest rates worldwide and tail-risk events (such as pandemic or geopolitical) has challenged public asset managers to rethink their approach to eligibility of asset classes, approach to risk tolerance, and portfolio construction.

In response to this challenge, the Milken Institute is partnering with the World Bank (Treasury | RAMP), to launch a new partnership to build global excellence in public financial asset management, strategy, and governance.

The World Bank – Milken Institute Public Financial Asset Management Program (PFAM) at Bayes Business School (formerly Cass) aims to develop the expertise in public financial asset management to the highest level.

To achieve this, the program provides rising professionals from public pension funds, sovereign wealth funds, central banks and pension-fund regulators with a comprehensive grasp of the principles of financial markets and instruments, portfolio management, macroeconomics and risk management and their application to real-life scenarios.

The program will develop and enhance the ability of participants to design investment strategies using wide range of financial and real assets; understand, measure, and manage portfolio risks, taking into account macroeconomic climate in which they operate, as well as environmental, social and governance factors, both locally and internationally. To facilitate this, the program will provide a thorough understanding of the necessary quantitative tools employed in modern asset management.

Overall, the PFAM program aims to equip participants with the governance framework and strategic investment tools needed to effectively manage sovereign financial wealth to achieve economic stability, expand their asset eligibility prudently, and support long-term prosperity for future generations.

The sections that follow are intended to provide prospective applicants and their sponsoring institutions with more details on: the academic certification delivered as part of the program; applicant eligibility; the university partner (Bayes Business School); the program structure; and the content of core course components.



# Academic certification

## Postgraduate Diploma with option to convert into full MSc

PFAM is a rigorous and intense study program. Participants who successfully complete the program will be awarded a Postgraduate Diploma in Public Financial Asset Management and receive 120 credits at HE level 7.

For an additional fee, participants may also opt to convert their degree to an MSc in Public Financial Asset Management. In order to do this, they will be required to submit a work-based project module worth 60 credits. This module also includes a compulsory research methods seminar and requires the completion of the research ethics approval process. The supplementary work can be conducted entirely online, within six months of graduating from the PFAM program.

## Applicant eligibility

To qualify for the PFAM program, participants must be rising senior professionals with 5-10 years of work experience in public pension funds, sovereign wealth funds, central banks and pension-fund regulators or similar.

Participants must be nominated by their employer institutions, since they will be responsible for the cost of living in London for the first half of the program (applicable for both RAMP and non-RAMP members – these costs are detailed further below). Members of the RAMP program or participants from developing economies are eligible for full sponsorship of tuition costs.

Participants will need to pass a competitive selection and interview process conducted by the World Bank Group and Milken Institute in coordination with Bayes

Business School. The admissions committee will be looking for candidates with a strong academic track record (with a university degree and a foundation in economics and finance), technical knowledge and relevant work experience, but also with leadership potential and motivation to drive sustainable growth in their home countries.

Participants also have to provide satisfactory results from an approved English Language Test as part of the selection process, unless they are a citizen of or have studied a university degree in one of the countries listed [here](#).

All further information on English language tests, as well as other application requirements and the application link, are provided on our program website: [wbmilkenpfam.org](http://wbmilkenpfam.org)

# University partner

## Bayes Business School (formerly Cass), City, University of London

Bayes Business School (formerly Cass) is a leading global business school in the City of London, with state-of-the-art facilities on the executive education campus where the PFAM program will be held. Bayes are known for their world-class business education, excellent research reputation, and their deep engagement with practice. Bayes are part of City, University of London.

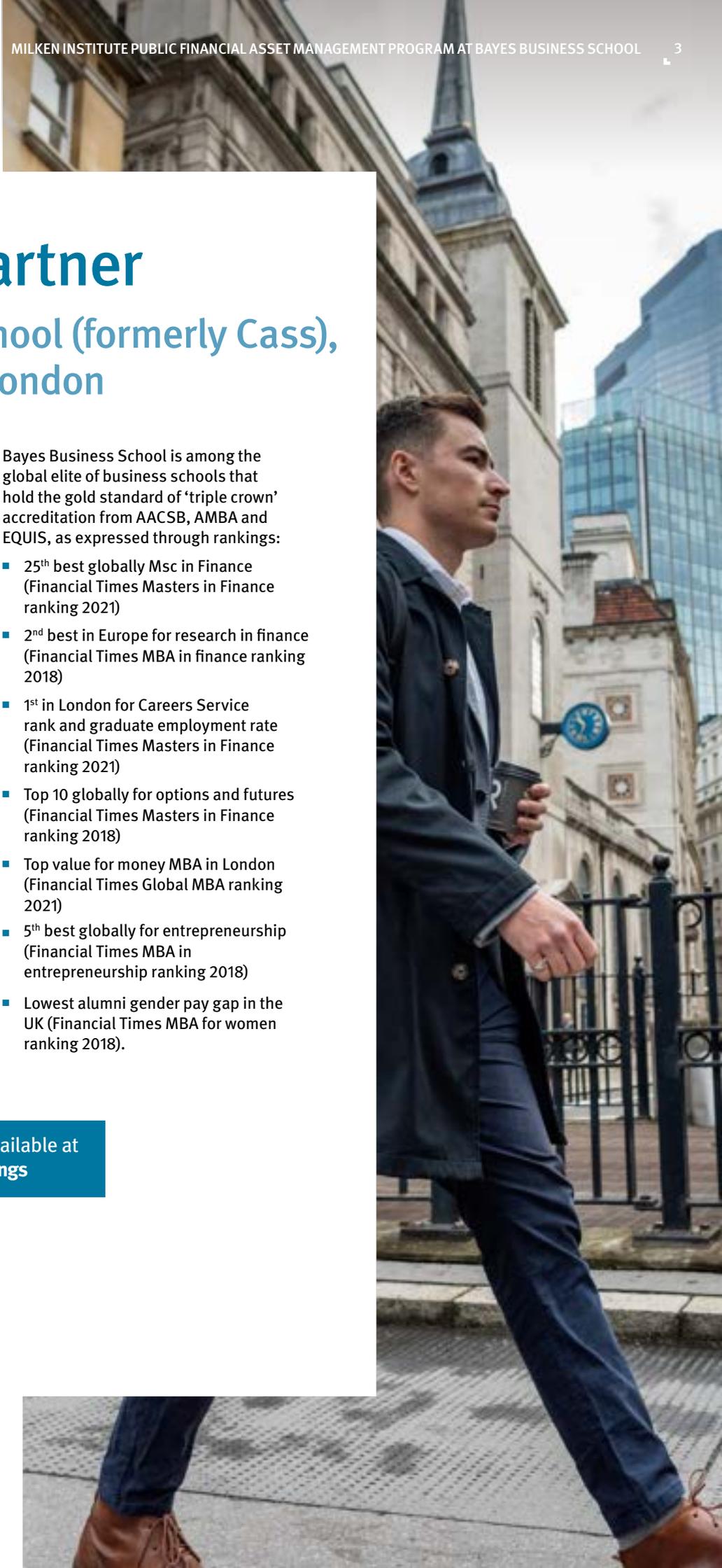
Bayes focus on teaching our students how to think, not what to think. They challenge their community to be persistently curious, ask important questions, and be responsive to new information and adapt their thinking accordingly.

The Bayes approach balances theory and practice. Students apply what they learn to real-life business challenges to see the impact learning has. World-leading faculty works closely with industry leaders so as to equip students with the insights, skills and confidence they need to thrive in the dynamic business world.

Bayes Business School is among the global elite of business schools that hold the gold standard of 'triple crown' accreditation from AACSB, AMBA and EQUIS, as expressed through rankings:

- 25<sup>th</sup> best globally Msc in Finance (Financial Times Masters in Finance ranking 2021)
- 2<sup>nd</sup> best in Europe for research in finance (Financial Times MBA in finance ranking 2018)
- 1<sup>st</sup> in London for Careers Service rank and graduate employment rate (Financial Times Masters in Finance ranking 2021)
- Top 10 globally for options and futures (Financial Times Masters in Finance ranking 2018)
- Top value for money MBA in London (Financial Times Global MBA ranking 2021)
- 5<sup>th</sup> best globally for entrepreneurship (Financial Times MBA in entrepreneurship ranking 2018)
- Lowest alumni gender pay gap in the UK (Financial Times MBA for women ranking 2018).

Full details on school rankings are available at [www.bayes.city.ac.uk/about/our-rankings](http://www.bayes.city.ac.uk/about/our-rankings)



# Program structure

The course is delivered in an intensive full-time format, over a nine-months period, integrating both classroom learning and independent and group-based study, exposing participants to globally relevant content which is designed to develop their skills as leaders in public asset management and enable them to demonstrate both strong personal skills and sound technical knowledge.

Prior to beginning the course, participants will be provided with access to online content designed to prepare them for the core academic portion of the course. See program modules on Figure 1. They will then attend a week-long induction boot camp starting on September 5, 2022, which will provide them with foundational skills and knowledge to support their learning as well as give them the opportunity to network with their cohort.

Participants will then undertake four core modules over a four-months period, each worth 30 credits:

- Global Macro-Economy and Sovereign Wealth Management
- Capital Markets, Instruments and Institutions
- Risk Management and Quantitative Techniques for Public Asset Owners
- Portfolio Management for Public Asset Owners.

These will be taught by Bayes subject experts and will comprise weekly lectures, action learning sessions, online activities and independent learning. Participants will also be expected to spend a significant number of hours in independent study and encouraged to work with colleagues to make the most of peer learning and networking opportunities.

This will be supported by a program of weekly professional workshops and industry speaker seminars providing a practitioner perspective. These workshops will cover topics such as governance, strategic asset allocation, risk and performance management, and infrastructure financing. Speakers will include leading investment managers and global corporates, as well as experts from The World Bank Group on related topics.

Following the conclusion of the core academic modules and an exam period in January 2023, participants will benefit from a series of leadership and professional development workshops, and will then move on to complete a four-month internship in the UK<sup>1</sup> (early February through end May 2023). The internship experience is essential for participants to gain a private-sector perspective on financial asset management and governance, and to witness market-based practices in action.

<sup>1</sup>A limited number of internships outside of the UK may be possible depending on visa requirements and eligibility.

# Program structure

Figure 1



# Academic learning objectives

On successful completion of the academic portion of the program, participants will be expected to have acquired the following tools, which they will then put into further practice during their internships:

## Knowledge and understanding

- Analyse the wider context in which public asset management decisions are made, such as macroeconomic policies (fiscal, monetary, exchange rate) and international capital markets
- Use foreign exchange reserves in the context of sovereign investing taking into account changing demographics
- Assess financial risk using a range of risk management models
- Evaluate and price financial instruments such as fixed income securities (including sovereign debt), equities and structured products
- Differentiate between traditional (equities and bonds) and alternative asset classes such as infrastructure, real estate and private equity

- Explain the key theories and concepts underlying traditional and contemporary asset management techniques
- Solve asset allocation problems with long term investors and social development in mind
- Evaluate portfolio performance
- Appraise environmental, social and governance issues in decision making
- Select and apply the most appropriate quantitative tools to facilitate effective risk management for public asset owners
- Assess the role of corporate governance in public asset management.

## Skills

- Evaluate global economic and financial market conditions
- Research and Analyse financial and macroeconomic data
- Develop and improve report writing and presentation skills
- Successfully Analyse and manage risk in relation to asset management decision making
- Critically Analyse and form investment decisions

- Devise, implement and monitor an investment plan
- Apply analytical problem-solving strategies and risk management techniques
- Work effectively in a cross-cultural team.
- Demonstrate decision making skills.

## Values and attitudes

- Integrate ethics and responsibility in asset management process as investment decisions made have implications on both return and risk of public asset owners
- Demonstrate awareness of ethical issues associated with lack of transparency of sovereign wealth funds
- Reflect on the impact of economic policy on wider society
- Value a combination of quantitative analysis and personal judgement to assess risks and make investment decisions
- Show honesty and integrity in their professional work
- Assess the impact of different cultures and values on asset management and the acceptance of financial risk.



# Detailed description of academic courses and internship

## Global Macroeconomy and Sovereign Wealth Management

The module will allow participants to understand the main concepts of the global economy and interpret the implications of those concepts for public sector debt and wealth management in an evolving world.

It will enable participants to discuss the principal driving forces of an economy, Analyse how these change through time in response to domestic and international developments, and evaluate how these forces impact public sector management. The course is taught in three interconnected parts:

### Part 1 Macroeconomics

Provides a framework for understanding and analyzing economic performance and the policies that influence the evolution of economies. Content includes:

- Economic growth and the supply side of the economy
- Capital accumulation and economic growth
- Business cycles and stabilization policies
- Monetary policy.

### Part 2 The global economy

Expands upon Part 1, emphasizing the impact of open economies and global forces on economic performance and the effectiveness of government policies. Content includes:

- Globalization and growth
- Exchange rate regime choice;
- Balance of Payments;
- Government policy in the global economy
- Foreign exchange intervention
- Currency crises.

### Part 3 Public sector management in the global economy

Examines the key public sector institutions tasked with debt and wealth management. Participants will explore the different objectives and constraints on each type of manager, the driving factors behind institutional reforms, and how public sector management evolves in the face of global economic developments. Content includes:

- Sovereign debt management
- Foreign exchange reserves management
- Sovereign wealth funds
- National pension funds
- Design, reform, and evolution of institutions.

# Detailed description of academic courses and internship

## Capital Markets, Instruments, and Institutions

The objective of the module is to provide participants with a thorough understanding of the global financial markets, instruments, and institutions. Four key markets are examined: debt markets, equity markets, foreign exchange markets, and derivative markets. The course systematically evaluates each market and investigates the various participants and the different types of financial instruments involved.

A strong emphasis will be placed on the intersection between financial theory and empirical observations. Extensive use of Bloomberg will be made both in the classroom and for individual exercise to demonstrate where and why deviations from theoretical prices occur.

Topics covered include, but are not limited to:

### Overview of Capital Markets, Instruments, and Institutions

- The distinction between debt and equity instruments
- The general principles for determining the price of a financial asset
- The principal economic functions of financial markets and instruments
- The key institutional participants in financial markets.

### FX markets

- The mechanics and conventions of the FX market
- Fundamental determinants of FX rates (PPP and IRP)
- The motivation of different participants in trading currencies.

### Debt Markets

- Money markets and Bond markets
- Interest rate risk (duration, convexity, and hedging)
- Debt valuation
- Term structure and credit risk models
- Asset securitization.

### Equity Markets

- The structure of public stock markets
- Equity valuation techniques
- The role played by equity indices and how they are constructed.

### Derivative Markets

- Exchange traded and over the counter markets
- Linear and non-linear payoffs
- The mechanics and pricing of forwards, futures, options and swaps.

# Detailed description of academic courses and internship

## Risk Management and Quantitative Techniques for Public Asset Owners

This module aims to bring together the theory and practice of modern techniques for risk measurement and management. Having reviewed relevant statistical and economic foundations, participants will move on to the construction and evaluation of risk models for market risk, credit risk and other financial risks, including environmental, social and governance (ESG) factors.

The management of risk via modern derivative contracts will then be discussed, allowing participants to develop an understanding of how to

hedge interest rate, currency and credit risks, for example, and how to evaluate competing risk management strategies. Focus will then turn to the use of operational decisions that help to manage risk (e.g. choices regarding where to locate production or in which currencies to secure financing as methods to manage FX risk). This module will enable participants to balance qualitative and quantitative information to reach informed risk judgements, as well as use major theoretical frameworks and identify their limitations.

Topics covered will include:

- Review of basic investment concepts
- Review of relevant statistical tools
- Measuring risk: market risk, credit risk, interest rate risk and others
- Managing risk through the use of common derivative securities: futures, options, swaps and others
- Operational risk management strategies
- Contribution of environmental, social and governance issues to risk analysis.

## Portfolio Management for Public Asset Owners

The course aims to bring portfolio theory and investment practice together. It will explore and educate participants about the main concepts of portfolio/asset pricing theories and illustrate the application and relevance of those theories in devising investment strategies in practice, in the context of public asset owners. It will enable participants to understand principal objectives of investors, constraints on professional asset managers and their importance in forming strategic asset allocation decision.

The course will highlight the importance of investing in alternative as well as traditional asset classes and investing for social development. The empirical coursework will enable participants to apply the investment approaches covered in the module, such as

simulations in strategic and tactical asset allocation, portfolio performance evaluation against a benchmark, style investing, and market timing.

Topics covered include, but are not limited to:

- Portfolio risk, return and diversification
- Mean variance optimisation and optimal portfolio selection
- Asset pricing models such as CAPM, APT and multi-factor pricing models
- Traditional and alternative asset classes for long term investors
- Strategic and tactical asset allocation strategies
- The impact of fund governance models on asset allocation

- Liability-driven investing
- Global vs. local investing
- Market timing strategies such as style and sector rotation
- Market anomalies and style investing
- Index tracking
- ESG investing
- Performance evaluation
- Balancing returns with the use of long-term public funds for social development
- Behavioural issues.



# Internship Module

## Bridge the gap between theory and practice

The internship experience, which forms an integral part of the Public Financial Asset Management program, is essential for participants to gain a practitioner's perspective on financial asset management and governance, and to witness market-based practices in action.

Participants will be matched to a placement by the World Bank and Milken Institute from a range of opportunities among leading investment managers, hedge funds, pension funds, endowments, and other suitable institutions based in London (a limited number of internships outside London may be provided depending on visa arrangements with the internship provider).

Participants will spend 12-16 weeks working on a full-time basis from early February through end May 2023, with internship organisation(s), in a program which is designed to broaden their professional experience and allow them to contextualize their academic learning in a hands-on manner within industry. As an integral part of the training experience, the internship will be monitored and assessed by supervisors from Bayes Business School.

# Additional optional module to convert Diploma into full Masters Degree

## Work-based project, to be completed online within six months of graduation

This additional module is optional and offered at a fee, for participants who successfully complete the PFAM Program and would like to convert the postgraduate diploma into a full MSc diploma. Participants may choose to use their internship experience or their work experience once they have returned to their home institution as a context for the work-based project.

This module is designed to provide participants with an opportunity to integrate the learning derived from other modules in the PFAM program and apply it to their own professional setting. The project will give participants a chance to

apply research expertise and practical understanding to help bring about a valued form of change or improvement within their organisation or internship placement.

Managers, consultants, analysts, bankers, entrepreneurs, all face the issue of how to draw reliable conclusions from empirical data. Therefore, as part of this module participants will also complete a number of online research methods seminars, providing a set of analytical and methodological tools that will be fundamental for carrying out research projects based on empirical data.

Participants will identify a question or challenge experienced in their home organisation (or the organisation in which they completed their internship) to be investigated, and will apply their learning in order to provide solutions. This will enable participants to apply theories and concepts

to real world problem-solving, and to further develop their professional skillset.

The precise scope and objectives of each project will be defined and mutually agreed through a collaborative approach involving the participant's chosen organisation and the academic supervisor from Bayes, as appropriate.

Projects should be designed to comprise the following elements:

- Informed by the production and interpretation of relevant evidence
- Enabling personal development
- Involving collaboration with other individuals and groups in pursuing goals of organisational change/improvement
- Offering benefits to stakeholders
- Allowing progress to be demonstrated within a realistic timescale.



### Bayes Business School

106 Bunhill Row  
London EC1Y 8TZ  
T: +44 (0)20 7040 8600  
[www.bayes.city.ac.uk](http://www.bayes.city.ac.uk)

 BayesBusinessSchoolOfficial

 Bayes-Business-School

 @BayesBSchool

 BayesBSchool

 @BayesBSchool

### Milken Institute

1250 4<sup>th</sup> Street  
Santa Monica, CA 90401  
T: +1 202 336 8942  
E: [pfam@milkeninstitute.org](mailto:pfam@milkeninstitute.org)  
[www.milkeninstitute.org](http://www.milkeninstitute.org)

### World Bank Treasury

1225 Connecticut Ave NW  
Washington, DC 20433  
T: +1 202 473 6058  
E: [ramp-pfam@worldbank.org](mailto:ramp-pfam@worldbank.org)  
[www.treasury.worldbank.org](http://www.treasury.worldbank.org)



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