

## MFIN Program

The Master's in Finance (MFIN) has been developed in response to profound changes in the finance sector. Driven by the significant growth of institutional money currently being deployed, the sector faces novel challenges on a global scale that spur constant innovation, and an increasing level of sophisticated analysis and action.

The MFIN offers students the opportunity to progress from a generalist perspective that introduces the theory and application of corporate finance, investment management, and international banking to a focused treatment of financial specializations through **three pathways**: financial engineering, hedge funds and private equity, and international wealth management.

### Program Description

The Master's in Finance (MFIN) at the International University of Monaco (IUM) is a 10-month, 54-credit program completed in three 12-week terms.

The MFIN imparts a systematic understanding of financial instruments and markets, and a working knowledge of the investment strategies they underlie. It aims to prepare highly-skilled and reliable professionals who will make a positive contribution to the finance industry, making them desirable candidates for positions with a variety of firms worldwide.

The MFIN has **five major instructional components**: the common core, the pathway focus, the capstone applied project, the practical activities module, and the professional development and career planning unit.

#### The Common Core (27 credits)

All MFIN students complete the common core (CC). In the nine CC courses students examine a broad variety of financial products, markets, and players in these markets. CC courses encompass the theoretical framework and analytical tools essential to a thorough understanding of the principles of advanced finance. On completion of the CC students will have explored current concepts and best practices in finance, while developing a holistic and cross functional view of their own experience and finance in general.

#### The Pathway Focus (21 credits)

On successful completion of the Common Core, students are streamed into the pathway focus (PF) where they enroll in a suite of seven courses according to their chosen area of specialization. The MFIN offers pathways in financial engineering, hedge funds and private equity, and international wealth management.

##### ***Financial Engineering Pathway (MFIN – FE)***

Financial Engineering is a cross disciplinary field that relies on mathematical finance, numerical methods, and computer simulations to make trading, hedging and investment decisions.

Financial engineering is a mathematically oriented discipline. The ideal applicant to this program will be extremely comfortable with quantitative reasoning and techniques. Prior financial knowledge or work experience is not essential but is desirable. Students will develop financial insight, learn mathematical, statistical and computational tools and apply them to evaluate financial products, construct investment portfolios and devise trading and hedging strategies that are used in modern financial engineering.

The MFIN-FE prepares students for a wide range of careers with financial institutions, financial service providers, suppliers of financial consulting services, financial software and systems providers, and corporate treasuries. Specific areas where MFIN-FE graduates might be employed are primary and derivative securities trading, quantitative modeling of derivatives, structured products, portfolio management, risk management and analysis, corporate financial engineering, hedge fund strategies and management, and fund of hedge fund management and analysis.

### **Hedge Funds and Private Equity Pathway (MFIN – HF)**

The MFIN-HF is aimed at students who wish to master the full spectrum of traditional and alternative investment strategies on a global scale. Graduates will have acquired the technical and operational knowledge to coordinate and supervise the different departments of a complex investment firm. They are business savvy and have the strategic vision that will help firms attain superior performance.

The MFIN-HF program prepares students for career in financial consulting, corporate financial strategies, investment banking, asset management, hedge fund management, fund of hedge funds management, private equity investing, and structured product sales.

### **International Wealth management Pathway (MFIN – IWM)**

The MFIN-IWM is based on an up-to-date curriculum developed in association with the Certified International Wealth Manager organization (CIWM) based in Zurich and offers balanced instruction from both academic experts and practicing financial professionals. MFIN-IWM will sit for the CIWM examinations and upon successful completion of the program of study and of these examination they will be awarded both the MFIN-IWM degree and the CIWM certificate.

This program prepares students for a career as a financial advisor or client advisor, or in private banking, asset management, or family office. Graduates will also be qualified as investment advisors to affluent private investors, as well as to high net worth individuals who wish to invest and maintain wealth for future generations.

### **The Capstone Applied Project (6 credits)**

The MFIN culminates in a required capstone applied project (CAP) in an area where the student wishes to specialize. The CAP may take three forms:

Students may complete a research thesis during which they work under the guidance of an academic advisor. After reviewing the latest specialized research on a current finance problem, students create a usable tool or model providing a practical and original solution.

The CAP may take the form of an applied research project working with one of the firms associated with IUM in Monaco, Geneva, Paris, Frankfurt, London, Singapore, or another financial center.

Finally, the CAP may involve completing a structured internship. IUM will encourage and assist MFIN students to undertake internships – especially in the field of wealth management and private banking – with prestigious enterprises to enable them to begin their international career with the most up-to-date expertise.

### **The Practical Activities Module (non-credit)**

The practical activities module offers MFIN students direct contact with the financial world. It consists of seminars, guest lectures and financial conferences, firm and educational visits, and supervised field projects.

### **Professional Development and Career Planning Unit (non-credit)**

The Office of Career Development and Corporate Relations assists students in leveraging their unique professional and personal abilities, and guides them in their pursuit of a successful career.

In addition, graduate students have the opportunity to attend free non-credit French classes

## **Program Objectives**

The MFIN program objectives are:

- To build a rigorous theoretical foundation and sound methodology that can be applied to solve financial problems;
- To develop the ability to analyze, interpret, summarize, visualize, and present financial data in support of decision making;
- To understand a broad variety of financial instruments, including both traditional and alternative investments, as well as the markets in which they are traded and their uses in modern financial practices;

- To be able to work in teams and to discuss financial issues, to seek original solutions and to communicate their conclusions effectively.

## MFIN Courses

### Common Core (27 credits)

*ACTG 631: Financial Accounting for Investments*  
*FINA 610: Statistics and Financial Data Analysis*  
*ECON 612: Macroeconomics for Financial Forecasting*  
*FINA 631: Stock and Bond Valuation*  
*FINA 622: Corporate Finance*  
*FINA 644: Portfolio Theory and Management*  
*FINA 636: Derivative Products and Strategies*  
*FINA 632: Globalization and Financial Markets*  
*FINA 648: Risk Management*

### Pathway Focus (21 credits)

#### **Financial Engineering Pathway (MFIN – FE)**

*FINA 605: Probability Theory and Discrete-Time Finance*  
*FINA 634: Financial Programming in VBA*  
*FINA 642: Financial Econometrics*  
*FINA 660: Quantitative Models and Strategies*  
*FINA 662: Financial Modeling in MATLAB*  
*FINA 669: Hedge Fund Strategies*  
*FINA 667: Analyzing and Trading the Yield Curve*

#### **Hedge Funds and Private Equity Pathway (MFIN – HF)**

*BULA 621: Law, Due Diligence, and Ethics*  
*FINA 652: Private Equity Investing*  
*FINA 653: Real Estate Investing*  
*FINA 645: Mergers and Acquisitions*  
*FINA 650: Venture Capital and Entrepreneurial Finance*  
*FINA 668: Hedge Fund and Fund of Funds Management*  
*FINA 669: Hedge Fund Strategies*

#### **International Wealth management Pathway (MFIN – IWM)**

*BULA 621: Law, Due Diligence, and Ethics*  
*BULA 631: Corporate Governance and Market Regulations*  
*FINA 635: International Taxation*  
*FINA 652: Private Equity Investing*  
*FINA 653: Real Estate Investing*  
*WEMA 610: Wealth Management*  
*WEMA 620: Client Relationship Management*

### The Capstone Applied Project (6 credits)

*APRE 601: Capstone Applied Project*

### Professional Development and Career Planning Unit (non-credit)

*TRNG 611: Career and Personal Development*

In addition, all graduate students have the opportunity to attend free non-credit French classes:

*FREN 601: French Language and Culture I*

*FREN 602: French Language and Culture II*

*FREN 603: French Language and Culture III*

### The Practical Activities Module (non-credit)

IUM enables students to access numerous events such as investor **conferences** and hedge fund symposia in Monaco and elsewhere, and offers them first-hand contact with high profile experts and financial managers who visit IUM as guest lecturers on a regular basis. Students also take part in discussion forums, **seminars**, and workshops throughout the year.

The university organizes **firm visits** in Monaco and educational visits to major financial centers around the world. During such visits to financial exchanges, investment banks, private equity firms, hedge funds, and wealth management firms students have the opportunity to talk and interact with senior executives and junior employees. An **educational trip** to a main financial market in Asia will be organized during the Winter term 2008.

These activities are integral part of the program and are therefore mandatory for all MFIN students.

## MFIN Program Outline

TERM	COURSES	
	<i>All courses are worth 3 quarter credits, unless otherwise indicated.</i>	
F A L L	FALL TERM 1:	ACTG 631 - Financial Accounting for Investments FINA 610 - Statistics and Financial Data Analysis FINA 631 – Stock and Bond Valuation ECON 612 - Macroeconomics for Financial Forecasting
	FALL TERM 2:	FINA 622 - Corporate Finance FINA 636 - Derivative Products and Strategies FINA 632 - Globalization and Financial Markets FINA 644 - Portfolio Theory and Management
W I N T E R	<b>FINANCIAL ENGINEERING (FE)</b>	FINA 648 - Risk Management FINA 605 - Probability Theory and Discrete-Time Finance FINA 634 - Financial Programming in VBA FINA 642 - Financial Econometrics FINA 660 – Quantitative Models and Strategies APRE 601a - Capstone Applied Project – Phase I
	<b>HEDGE FUNDS AND PRIVATE EQUITY (HF &amp; PE)</b>	FINA 648 - Risk Management BULA 621 - Law, Due Diligence, and Ethics FINA 645 - Mergers and Acquisitions FINA 668 - Hedge Fund and Fund of Funds Management FINA 652 - Private Equity Investing APRE 601a - Capstone Applied Project – Phase I
	<b>INTERNATIONAL WEALTH MANAGEMENT (IWM)</b>	FINA 648 - Risk Management BULA 621 - Law, Due Diligence, and Ethics WEMA 610 - Wealth Management BULA 631 - Corporate Governance and Market Regulations FINA 652 - Private Equity Investing APRE 601a - Capstone Applied Project – Phase I
S P R I N G	<b>FINANCIAL ENGINEERING (FE)</b>	FINA 662 - Financial Modeling in MATLAB FINA 669 - Hedge Fund Strategies MFIN 618 - Analyzing and Trading the Yield Curve APRE 601b - Capstone Applied Project – Phase II
	<b>HEDGE FUNDS AND PRIVATE EQUITY (HF &amp; PE)</b>	FINA 650 - Venture Capital & Entrepreneurial Finance FINA 669 - Hedge Fund Strategies FINA 653 - Real Estate Investing APRE 601b - Capstone Applied Project – Phase II
	<b>INTERNATIONAL WEALTH MANAGEMENT (IWM)</b>	FINA 635 - International Taxation WEMA 620 - Client Relationship Management FINA 653 - Real Estate Investing APRE 601b - Capstone Applied Project – Phase II

## Course Descriptions

Note: All courses carry three (3) credits unless otherwise stated.

### **ACTG 631: Financial Accounting for Investments**

This course explores the subtleties and complications that arise in applying financial accounting standards to investments in equity and debt securities. Students will analyze the financial information – in particular, financial statements – in quarterly and annual reports of publicly traded corporations to gain insight in the valuation of securities issued by them. Besides focusing on the key issues of profitability, growth, cash flow generation, liquidity and credit worthiness, students will learn to critically evaluate financial disclosures to identify value drivers, as well as unrealistic or overoptimistic statements.

### **APRE 601: Capstone Applied Project (6 credits)**

This course requires students to develop an applied project to facilitate the application of theory, skills, and knowledge acquired over the course of the MFIN program. The capstone applied project may take the form of a thesis, a project-based learning exercise, or an internship.

The thesis is completed in collaboration with a faculty expert and investigates industry, market, and a topical issues or opportunities related to a specific area of interest. Any problems investigated must have current and ongoing relevance.

The project-based learning exercise requires students to work with their faculty mentor on a sustained basis that will involve both direct contact hours and research/lab hours. The final deliverable is the project white paper.

The internship relies on an intensive industry-related experience to acquaint students with the quotidian responsibilities and challenges that those working in the finance industry face. By immersing them in this setting, the internship motivates students to consider the strategic and operational roles of a variety of elements in the finance industry. Through a highly focus lens, students will have first-hand experience of how to deal with the topics they have encountered in their coursework.

Students will learn how to work under pressure in the financial sector, how to apply what they have learned in the MFIN program, and methods for coping with the pressures and stress inherent in the financial services setting.

### **BULA 621: Law, Due Diligence, and Ethics**

This course examines major international legal systems, crucial international banking supervision rules, and self regulatory rules applicable to personal financial advice and asset management. The course also introduces major international cultural and ethical concepts of great importance to wealth management, corporate governance, corrupt practices, unfair competition, and alternative dispute resolution. Topics include international banking laws and standards of practice, international regulatory systems and supervision, and compliance and internal procedures.

### **BULA 631: Corporate Governance and Market Regulations**

This course studies corporate governance around the world with a particular focus on its importance for investors. It surveys corporate governance from the investor's point of view. The course begins with a discussion of the basic corporate governance problem and the major issues related to it, prominent proposed solutions to the problem, the different ways it is addressed in various companies, and the positives or drawbacks of various solutions. The course continues with a broad overview of current issues in market regulation focusing on the role and evolving responsibilities of order entry firms, market makers, and other participants in the market. Through case studies and interactive discussion the course highlight preventive compliance tools and methods, and explores areas related to compliance, surveillance, examinations, trading systems, enforcement, and other areas of interest in market regulation. Topics also include raising capital from the public and issues arising in the subsequent trading of

publicly listed securities, insider trading and market manipulation, and key concepts in Takeovers Act. Students will learn how corporate governance has an important influence on a society's economic productivity.

**ECON 612: Macroeconomics for Financial Forecasting**

This is a graduate level course in international macroeconomics which aims to help students understand the forces shaping the current global economy, and to develop forecasting and investing skills. The macroeconomic concepts and tools will be applied to practical "Global Macro" investing decisions. Accordingly, the course explores macroeconomic themes and macro drivers such as business cycles, national output and growth, productivity, globalization, inflation, money supply, national income accounts, consumer spending, interest rates, monetary policy, foreign exchange rates.

**FINA 605: Probability Theory and Discrete-Time Finance**

This course examines the main tools in modern probability theory including probability distributions and their properties, the concept of conditional expectation of a random variable, and important limit theorems. The course also introduces the theory of stochastic processes with particular attention to martingales and their properties. Students develop an understanding of probability theory and grasp it as the theoretical framework for mathematical finance.

**FINA 610: Statistics and Financial Data Analysis**

This course introduces financial data analysis and the basics of statistical inference. Students study statistical properties of financial data and analyze them using Excel data analysis tools, and learn to interpret and clearly present results. The course also introduces the use of ordinary least squares (OLS) simple and multiple regression to model relationships amongst financial and economic variables.

**FINA 622: Corporate Finance**

This course introduces students to the theory and practice of the financial management of companies. Topics include cost of capital and optimal capital structure, capital budgeting, working capital management, long term debt financing, common and preferred stock financing, dividend policy, share buybacks, and corporate governance. By learning how firms raise and allocate capital and by studying ethical issues linked to this decision process, students will develop an understanding of companies' behavior and needs.

**FINA 631: Stock and Bond Valuation**

This course focuses on stocks and bonds. The course discusses the mathematics of these basic financial products, and the implementation of practical tools to compute returns and yields, assess risk, and determine fundamental values. Topics include equity valuation models (dividend discount and free cash flow models, and P/E ratio valuation), risk and risk measurement, macroeconomic and industry analysis, bond prices and yields, the term structure of interest rates, interest rate risk and bond duration and convexity, and bond portfolio management. Students acquire a working knowledge of stock and bonds including the characteristics of the instruments and their markets, the factors affecting the way in which they trade, and their uses by different players in global financial markets.

**FINA 632: Globalization and Financial Markets**

This course establishes a thorough understanding of the fundamentals and workings of financial products and markets including the vocabulary, participants, and technologies that make these markets work on a global scale. Case studies and activities that simulate financial markets in all their components (from corporations to investment banks to fund management firms to clearing houses) are an integral part of the class. Students develop an awareness and understanding of current market conditions as well as the interconnections between the stock, bond, derivatives, and foreign exchange markets. They also learn to appreciate the impact and relevance of current news, and economic and geo-political events.

**FINA 634: Financial Programming in Visual Basic for Applications (VBA)**

This course introduces programming in visual basic for applications (VBA) as it is used in financial modeling. Programming assignments are a central requirement of this course; all of these assignments deal with problems in

financial modeling. Students learn how to program functions and subroutines using different types of variables, conditional statements, loops, and arrays; the procedure of debugging; and how to query an external database.

**FINA 635: International Taxation**

This course provides a broad understanding of the legal and financial aspects of income taxation, as well as a demonstration of how the basic building blocks of most tax systems can generate tax planning opportunities. The course illustrates these concepts by referring to legislation in specific countries. The course introduces corporate income taxation and focuses on residency, interest deductions, and anti-avoidance legislation. It then addresses international tax issues. Students will learn the financial aspects of tax and how to value alternative tax planning techniques. They will become familiar with tax treaties and other techniques for the avoidance of double taxation.

**FINA 636: Derivative Products and Strategies**

This course focuses on "plain vanilla" financial derivatives such as options, futures, and swaps; the markets in which they trade; and the strategies that can be constructed using these derivative instruments. Equity and currency options, forwards and futures on stock indices, currencies and commodities, and currency, interest rate, and equity swaps are studied in some detail. Students will learn the characteristics and specifications of these derivative products, the trading strategies that can be implemented using them (such as stock-index arbitrage, fixed income arbitrage, various options strategies like strangles, and straddles), and how to develop an intuition about the factors that affect the way in which they trade.

**FINA 642: Financial Econometrics**

This course studies in detail important univariate time series models such as AR, MA, and ARMA models, and teaches applies time-series modeling techniques such as the Box-Jenkins approach - especially to the problem of the predictability of financial asset returns. The course then moves on to a discussion of cointegration and the existence of unit roots. Finally, time series models and cointegration are applied to the study of volatility and correlation of asset returns. A central objective of the course is to hone students' ability to conduct time series analysis in world financial applications; all theoretical models and techniques are implemented via several econometric analysis packages.

**FINA 644: Portfolio Theory and Management**

This course analyzes different portfolio management techniques with respect to empirical evidence of security returns. Major topics include discussion of the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), and multifactor models. Students construct and monitor their own investment portfolios using data from Bloomberg. They learn how to combine different asset classes into investment portfolios according to modern portfolio theory with the objective of achieving an optimal risk-return profile.

**FINA 645: Mergers and Acquisitions**

The course examines the different phases of an acquisition process such as screening of targets, valuation, bid tactics (and defense tactics), financing, negotiation, communications, and integration. The course emphasizes the valuation process and the quantitative tools used by practitioners (such as cash flow models) to value a company.

**FINA 648: Risk Management**

This course focuses on the measurement and management of different types of financial risk such as market risk, liquidity risk, and operational risk; and develops a framework for integrated risk management. The course emphasizes the Value at Risk (VaR) technique and its applications. Students learn and implement quantitative techniques for risk management via Excel spreadsheets.

**FINA 650: Venture Capital and Entrepreneurial Finance**

This course is designed to familiarize students with the issues and practices surrounding private equity investments, in particular venture capital, bootstrap finance, mezzanine investing, and turnarounds. This involves learning about the dimensions of risks and expected returns in a context which is characterized by incomplete information and lack of liquidity while gaining practical insights into the interaction and relationship between the investor and management: What are their respective interests and strategies? How do they come to a deal? What is the process? How do they create value? The course integrates various managerial disciplines and covers the venture capital environment, financial modeling, business plan analysis, investment criteria, delivering pitches and teasers, understanding and negotiating terms and conditions, and preparing for due diligence and closing.

**FINA 652: Private Equity Investing**

This course focuses on private equity financing of businesses that are not in an early or start-up phase, assigning particular emphasis to the leveraged buyout process. Students study private equity as an alternative investment class both from the point of view of a private equity analyst or private equity fund manager, and from the perspective of an investor willing to allocate a portion of a portfolio to this asset class. The course examines the different stages of the private equity cycle from fundraising to how funds are deployed by a private equity firm; from deal structure, due diligence, and negotiation to valuation approaches and exit strategies. Finally, the course also analyzes private equity returns and risks, and considers the future outlook for private equity markets.

**FINA 653: Real Estate Investing**

This course seeks to impart an understanding of commercial real estate as an income producing investment. It explains real estate syndications as an ownership form, financing alternatives, and the use of financial leverage. Students will learn the techniques used to value commercial properties, how to prepare an investment analysis, and how to identify the risks of development projects. They will develop an indepth understanding of the mortgage market with its several sources of financing.

**FINA 660: Quantitative Models and Strategies**

This course explores the probabilistic and statistical properties of financial asset returns with the aim of analyzing and designing quantitative models that can be implemented in practical trading strategies. The risk return profile of these strategies will be evaluated and optimized using MATLAB. Applications will involve all major asset classes as well as their derivatives and structured products.

**FINA 662: Financial Modeling in MATLAB**

This course provides a practitioner's approach to the implementations of financial models in MATLAB. Classes are held in the computer lab and students will learn to develop models of commonly used by Hedge Funds and Investment Banks.

**FINA 667: Analyzing and Trading the Yield Curve**

A thorough understanding of the yield curve is essential for finance professionals dealing with equity, debt, and derivatives instruments. This course builds intuition about the properties and behavior of the yield curve, and of a multitude of strategies around it involving interest rate products and derivatives. The course introduces some stochastic models and their properties as well as other models such as the Nelson-Siegel model. It uses macroeconomic and econometric tools to interpret the yield curve and model its future evolution. Students learn to apply these theoretical models to trading strategies and forecasting.

**FINA 668: Hedge Fund and Fund of Funds Management**

This course is designed to expose students to various characteristics of hedge funds: their classification in terms of the strategies employed and risk-adjusted performance evaluation, and their organizational structure as well as their objectives, risks, and disclosure practices. Legal issues concerning the formation of a hedge fund and their business practices such as management and incentive fees structure are introduced. The "hedge fund universe," its historical and current evolution, and its ethical issues will be presented from a variety of perspectives, from managers to private and institutional investors. Several classes in this course are taught by market professionals.

**FINA 669: Hedge Fund Strategies**

This course explores trading techniques traditionally used by hedge funds. These include global macro strategies and event-driven investing as well as quantitative techniques such as longshort pairs trading and statistical arbitrage, convertible arbitrage, risk arbitrage, fixed-income arbitrage, capital structure arbitrage, and volatility, correlation and dispersion trading. Some lectures are given by professionals from the hedge fund industry visiting IUM. Students learn the quantitative models underlying strategies and implement practical tools that can be used in actual trading.

**WEMA 610: Wealth Management**

The course presents all aspects of wealth management for high net worth individuals. It seeks to develop a profound understanding of issues such as suitable asset allocation from an integrated prospective, behavioral investing, risk appetite, lifestyle, life cycle, and estate planning. Topics include international wealth planning and financial planning and life cycle for high net worth individuals; trusts, foundations, and estate planning; tax laws, residence,

and family office description and structure; and integrated asset allocation, risk tolerance, and behavioral investing. Students will learn to liaise effectively with a specialist, and assess and integrate the advice to create an optimal solution to the often complex wealth planning situations of high net worth individuals. They will master the major concepts of international laws and regulations concerning wealth planning, domestic and international estate and tax planning, and how to optimize a client's situation.

**WEMA 620: Client Relationship Management**

This course presents an overview of integrated services for private clients and how to implement appropriate client segmentation. It focuses on applying modern customer relationship management systems and data-mining techniques to high net worth individuals. Topics include customer behavior and client segmentation, private client behavior and total quality management, acquisition and retention of high net worth individuals, image creation, branding and communication strategies, and integrated services and pricing strategies. Students will learn pricing strategies and how to build long term customer loyalty with private clients by adding value to private banking services. They will grow to appreciate the importance of each service while understanding the critical nature of creating synergies between different segments of a bank.