FINANCE AND BUSINESS ECONOMICS

The goal of the finance MBA curriculum is to provide students with the conceptual foundation and technical skills necessary to make sound financial decisions in a changing domestic and international business environment. In particular, the program aims to develop a thorough understanding of global financial markets and instruments, business valuation and shareholder value creation, implementation of financial strategy through various forms of corporate restructuring, risk management in a global context, and the nature of risk and reward in formulating long-term investment strategies. The curriculum emphasizes interaction with practitioners in a number of innovative course offerings.

MBA students with special quantitative skills may consider specializing in the Advanced Applied Corporate Finance track. Students who qualify and are selected will take a special set of courses, chosen in consultation with their academic advisor. The finance and business economics area also offers MBA students the option of a full concentration in finance and elective courses in business economics. Students are encouraged to work with their advisor and faculty members to plan their program relatively early in the course of their studies.

The MSGF degree is offered in two formats: residential, which is housed entirely at Fordham, and collaborative, which is delivered in cooperation with select university partners. For more information, visit the MSGF program page.

The MSQF degree prepares students to meet the global financial service industry’s need for graduates who have both a deep knowledge of finance and a command of the latest quantitative techniques for financial problem-solving. For more information, visit the MSQF program page.

Programs

As the Gabelli School’s largest academic area, finance and business economics offers several graduate paths:

- M.B.A. Concentration in Finance
- M.S. in Global Finance
- M.S. in Quantitative Finance
- M.B.A. Secondary Concentration in Corporate Compliance
- M.B.A. Concentration in FinTech (Interdisciplinary)
- Advanced Certificate in Financial Computing (Interdisciplinary)
- M.B.A. Secondary Concentration in Blockchain (Interdisciplinary)

Courses

Below are the courses currently offered by the finance and business economics area.

Business Economics Courses

BEGB 6220. Econ Analysis & Bus Decisions. (3 Credits)
MBA CORE COURSE Presents economic theories to examine business pricing, production, marketing, and profits within different market structures and environments. Topics include: consumer choice and demand; the behavior of firms; market power and structure; the efficiency of competitive markets; externalities and social costs; information and behavior under uncertainty. The course also discusses social costs and benefits of business actions and related ethical and regulatory issues. (Formerly Managerial Economics)

BEGB 7240. Money Credit Interest Rates. (3 Credits)
Studies the role of money, credit and interest rates in the efficient and ethical functioning of domestic and global financial markets. This building-block course assumes a background in macroeconomics and finance, and it establishes a foundation for further study in all areas of finance. Topics include: flow of funds and interdependency within the financial system; the Federal Reserve System and its role in money creation; interest rates; the links between interest rates and the growth of money; and the effects of inflation and term structure. Prerequisites: BEGB 6220 and FNGB 6411. Also offered as FNGB 7441.
Attribute: ABIB.
Prerequisites: (FNGB 6411 or GBA Waiver Fin Environment with a score of 070).

BEGB 7243. Contemp Issues Global Fin. (3 Credits)
Explores current issues relevant to the global financial system, including international commercial and investment banking and international investments. Emphasizes the underlying conditions and fundamental trends in various sectors of international finance. Also offered as FNGB 7458.
Attribute: ABIB.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

BEGB 7244. Global Finance. (3 Credits)
The first half of the course focuses on the theories and practices of world trade, including comparative advantage, the changing trade competitiveness of nations, and protectionism. The second half focus shifts to developing countries: including foreign investment and technology, and investment and trade opportunities, policies and regulations. For SATURDAY / HYBRID sections of this course, there will normally be 4 class meetings, and the balance on-line / contact the professor for further detail. Prerequisite: BEGB 6220.
Attribute: ABIB.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

BEGB 7251. Intl Trade & Development. (1.5 or 3 Credits)
The first half of the course focuses on the theories and practices of world trade. Topics include comparative advantage, the changing trade competitiveness of nations and protectionism. During the second half, the focus shifts to developing countries: the process of economic development, including the contribution of foreign investment and technology as well as investment and trade opportunities, policies and regulations.
Attributes: ABGS, ABIB.
Prerequisites: BEGB 6220 or GBA Waiver Managerial Eco with a score of 070.
Finance Courses

**FNGB 6411. Intro Financial Sys & Methods. (3 Credits)**
FT MBA CORE/ PMBA FLEX CORE COURSE. Introduces the financial system and basic methods of valuation. Students will learn how to interpret financial data reported in the press and will discuss topical subjects facing the financial industry and the economy. Course topics include: financial markets, instruments, and institutions; time value of money, net present value, and applications; valuation of stocks and bonds; elements of firm and enterprise value; risk and return. (Formerly Financial Environment)

**Prerequisites:** (ACGB 6111 (may be taken concurrently) or GBA Waiver Fundamentals Accnt with a score of 070) and (BEGB 6220 (may be taken concurrently) or GBA Waiver Managerial Eco with a score of 070).

**Mutually Exclusive:** MMGB 6411.

**FNGB 7415. Credit Management. (3 Credits)**
This course focuses on the analytic approach (stemming from Basel II capital accords) and will help students make wise credit decisions and manage lending portfolios. Topics include the latest lending techniques based on cash flow, advanced forecasting methods (including simulation and stochastic optimization), pricing, portfolio management, default probability, valuation analysis risk rating and credit derivatives.

**Prerequisites:** FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

**FNGB 7421. Prins of Modern Finance. (3 Credits)**
Provides a conceptual framework that allows both corporate finance and portfolio investment decisions to be viewed and understood in a unified context of risk and return. Examines concepts of valuation, risk and return, diversification, asset pricing and efficient markets.

**Prerequisites:** (FNGB 6411 or GBA Waiver Fin Environment with a score of 070).

**FNGB 7422. Corporate Finance. (3 Credits)**
Studies corporate finance and its specific decisions. Topics include evaluating capital expenditure proposals, forecasting financing requirements and selecting sources of financing. The course also discusses working capital management, dividend policy and contingency planning, and addresses the additional challenges of multinational firms. Students taking FNGB 7422 Corporate Finance will not receive credit for FNGB 7400 Business Finance.

**Prerequisite:** FNGB 7421.

**FNGB 7423. Mergers, Acquisitions, and LBOs. (3 Credits)**
Focuses on identifying and evaluating target companies and structuring deals. Also considers the economic and social impact of such changes in corporate ownership. Students analyze recent cases, evaluate strategic rationale, examine deal structuring and assess financial impact.

**Prerequisite:** FNGB 7421.

**FNGB 7431. Options and Futures Markets. (3 Credits)**
Examines the institutional aspects of options and futures markets and discusses the strategies of hedgers, arbitrageurs and speculators. Provides an introductory analytical foundation for pricing futures and option contracts.

**Prerequisites:** FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

**FNGB 7433. Fixed Income Analysis. (3 Credits)**
Introduces techniques for valuing fixed income securities and their derivatives. Emphasizes pricing and risk-measurement for government, corporate and mortgage-backed instruments. Analyzes embedded options using the binomial model. Develops fixed-income trading and portfolio management techniques, including the use of repo, futures, options, swaps and credit derivatives. Examines theory and empirical evidence on the term structure of interest rates, including the derivation of spot and implied forward yield curves.

**Prerequisite:** FNGB 7421.

**FNGB 7441. Money Credit Interest Rates. (3 Credits)**
Studies the role of money, credit and interest rates in the efficient and ethical functioning of domestic and global financial markets. This building-block course assumes a background in macroeconomics and finance, and it establishes a foundation for further study in all areas of finance. Topics include: flow of funds and interdependency within the financial system; the Federal Reserve System and its role in money creation; interest rates; the links between interest rates and the growth of money; and the effects of inflation and term structure. Prerequisites: BEGB 6220 and FNGB 6411. Also offered as BEGB 7240.

**Prerequisites:** (FNGB 6411 or GBA Waiver Fin Environment with a score of 070).

**FNGB 7455. Global Finance. (3 Credits)**
The first half of the course focuses on the theories and practices of world trade, including comparative advantage, the changing trade competitiveness of nations, and protectionism. The second half focus shifts to developing countries: including foreign investment and technology, and investment and trade opportunities, policies and regulations. For SATURDAY / HYBRID sections of this course, there will normally be 4 class meetings, and the balance on-line / contact the professor for further detail. Prerequisite: BEGB 6220.

**Attribute:** ABIB.

**Prerequisites:** FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

**FNGB 7458. Contemp Issues Globl Fin. (3 Credits)**
Explores current issues relevant to the global financial system, including international commercial and investment banking and international investments. Emphasizes the underlying conditions and fundamental trends in various sectors of international finance. Also offered as BEGB 7243.

**Attribute:** ABIB.

**Prerequisites:** FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

**FNGB 7460. Portfolio Management. (3 Credits)**
Examines portfolio objectives and links them to appropriate investment strategies. Considers the asset-allocation decision, equity and fixed-income portfolio management, return enhancement/risk control techniques and performance evaluation. Commercial-level portfolio optimization software is applied to a range of institutional portfolio problems.

**Prerequisite:** FNGB 7421.

**FNGB 7470. Real Estate Finance. (3 Credits)**
Discusses the major factors affecting the valuation and financial structuring of real estate, including general tax and depreciation policies. Presents the roles of principal lending institutions, mortgage banks and investment banks in real estate lending, syndications and partnerships. Also surveys real estate-related securities and their markets.

**Attribute:** ABEP.

**Prerequisites:** FNGB 6411 or GBA Waiver Fin Environment with a score of 070.
FNGB 7475. Marketing of Financial Service. (3 Credits)
Provides a scientific understanding of tactics and strategies associated with the marketing of financial services. Emphasizes the role of industry deregulation, intensified competition, and the emergence of new technologies and products on the emerging marketing practices used by financial services institutions. Explore consumers’ unique decision-making styles in financial matters, the effects of technology deployment, and the fiduciary constraints that guide marketing activities in the markets for commercial banking services, mutual funds, investment banking services, insurance and other forms of financial services.
Prerequisites: MKGB 6710 or GBA Waiver Marketing Mgmt with a score of 070.

FNGB 749A. Financial Modeling. (3 Credits)
This course helps students develop the type of excel-based financial models that businesses use every day to analyze a wide range of financial problems and make decisions. Students deliver written and oral presentations of their models and practice critical skills for a successful career in finance.
Attribute: ASDM.
Prerequisite: FNGB 7421.

FNGB 749C. Venture Capital Financing. (3 Credits)
We will examine the changes in the asset class over time—from the formation of American Research & Development in 1946 to the formation of some of the angel-type funds of the present. We also will examine the geographical differences between venture funds—West Coast and East Coast. We also will look at specialization—the beginnings of IT-focused investing and the move into healthcare and finally into energy. Finally we will examine the phenomenon of global venture capital. How does that vary from the way venture capital is practiced in the US? The class will be taught in modules and we also will rely on practitioners and experts to visit with the class. Where possible, the students will be asked to visit venture capital fund presentations, expert briefings as well as personal briefings.
Attribute: ABEP.
Prerequisite: FNGB 7421.

FNGB 749E. Technical Analysis. (1.5 or 3 Credits)
This course is designed to inform students about how the markets and individual stocks behave (i.e., technical analysis), and how they differ from the economy and individual companies (i.e., fundamental analysis).
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 749F. Equity Analysis. (3 Credits)
This course will feature a series of guest lecturers who are highly regarded experts in their respective areas. The course will cover wealth management, private equity, equity analysis in general and analysis within specific industry sectors such as retail, media, insurance, etc. We are looking for highly motivated students who will ask lots of questions and who will engage the guest lecturers in meaningful dialog during the discussion periods.
Prerequisite: FNGB 7421.

FNGB 749M. Hedge Fund. (3 Credits)
This course will provide an overview of hedge funds and the hedge fund industry including structure, regulation, major strategies, operations and risk management, due diligence, performance and the role of hedge funds in asset allocation and the global financial system.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 749R. Student Managed Invest Fund. (3 Credits)
The Fordham Graduate School of Business Student Managed Fund consists of 2 consecutive semester-long courses. The courses are designed to simulate the experience a student can obtain as an intern in the asset management industry. We focus in this first course on the examination and evaluation of individual securities investment on a stand-alone and comparable basis. Students will be trained on construction of a disciplined investment process using "Value Investing" strategy as the core foundation based on research work accentuated by Benjamin Graham and David Dodd. Students are expected to develop relationships with the Wall Street *sell-side analyst(s) covering his or her stocks as well as the investor Relationship (IR) person(s) of the targeted stocks. A team of industry experts, fundamental analysts, portfolio managers, risk managers and other investment professionals will work closely with students to ensure that the students are exposed to various tools and methods that are currently being employed in the industry.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 749U. Global Financial Markets. (3 Credits)
This course provides a comprehensive overview to the workings of the global financial markets, the functions and goals of the key financial institutions, and the role played by central banks and regulatory agencies. It will cover international money markets, international equity markets, the foreign exchange market, forward markets for commodities and financial instruments, bond markets and derivative markets.
Prerequisites: MKGB 6710 or GBA Waiver Marketing Mgmt with a score of 070.

FNGB 749X. CFA Competition and Workshop. (0 Credits)
While this course is for 0-credit, it has a heavy work load and provides valuable practical experience. Students will be arranged into teams. Each team will write a full sell-side coverage report, build out a presentation, and pitch it to Fordham Wall Street Alumni.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74AD. Student Mgt Investment Fund II. (3 Credits)
In the second class, in the spring semester, students will learn the practice of asset allocation with focus on advantages and pitfalls of asset allocation theory. Coverage includes practiced methodologies in assessing and measuring risk, including applications of the BARRA risk models, strategies for entry and exit, and portfolio revision. A lot of care will be taken to expose the students to real-life aspects of portfolio management. This includes arranging lectures from portfolio managers, with different philosophies on portfolio selection and risk management.
Prerequisite: FNGB 749R or Corequisite: FNGB 7460.
Prerequisite: FNGB 6411.
FNGB 74AG. Finance in the Healthcare Ind. (3 Credits)
This course will present a historical development of the American healthcare system and will address the current challenges faced by both health insurers and providers, specific to managed care, reimbursement methods, and contracting. Students will learn to apply the standard tools of financial analysis and financial management in the complex and evolving setting in which the global healthcare system is currently situated. Students will also learn how to analyze the key financial indicators specific to hospitals and their direct application towards managed care contracting initiatives, debt restructuring and bond rating status. Finally, the course will address the future of health insurance and managed care.
Attribute: ABHM.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74AH. Global Corp Governance. (3 Credits)
Examines how modern publicly traded corporations are governed in the global markets. It discusses the roles of the board of directors, corporate management, institutional investors, and other shareholders, and also discusses the effects of the recent legislation and financial market developments on corporate governance. Provides international comparisons of corporate governance structures and issues arising in contests for corporate control.
Attribute: ABIB.
Prerequisite: FNGB 7421.

FNGB 74AI. Global Equity Portfolio Management. (3 Credits)
Provides a comprehensive overview of equity portfolio management in theory and practice. Examines portfolio objectives and links them to appropriate investment strategies. It covers pricing of equities, the asset-allocation decision, return enhancement/risk control techniques, performance evaluation and recent changes in international fund management. Analyzes international investment strategy and the relative merits of various approaches.
Attribute: ABIB.
Prerequisite: FNGB 7421.

FNGB 74AJ. Global Risk Management. (3 Credits)
Covers market risk and volatility, calculation of VaR (value at Risk), Monte Carlo Simulation, credit risk and use of credit derivatives, operational risk, counterparty risk and other topics. Discusses risk regulations, including Basel II, recent developments in Basel III, and recent regulations on the banking industry in the U.S.
Attribute: ABIB.
Prerequisite: FNGB 7421.

FNGB 74AK. Raising Capital and Investing in Global Financial Markets. (3 Credits)
Provides a comprehensive overview of the going-public decision. Examines the strategies and process of corporate restructuring and investing activities, such as mergers and acquisitions, corporate diversification, spin-offs, carve-outs, asset sell-offs, tracking stock, exchange offers, and debt restructuring.
Attribute: ABIB.
Prerequisite: FNGB 7421.

FNGB 74AL. Adv Corporate Finance. (3 Credits)
This course teaches the art of applying corporate finance theory and essential tools and techniques to strategic decision-making in critical real-life situations faced by organizations. The course enhances the students’ understanding of corporate finance by providing a comprehensive examination of selected advanced topics, such as alternative valuation methods, real options in corporate finance, decision trees, international operations, mergers and acquisitions, risk arbitrage, debt capacity and leveraged buyouts, private equity, warrants and convertibles, and ethical issues. The learning experience is based on lectures and a series of business cases involving individual and group work, classroom discussions, and written assignments, as well as readings and problem-solving. The case studies are drawn from a variety of industries and countries, including emerging markets, and involve complex real challenges. The course is designed for students who are already familiar with valuation, cost of capital, capital structure theory and option pricing theory and who want to learn more advanced skills and techniques required for making important executive-level decisions. Note: Students should be proficient with computer spreadsheets and financial calculators.
Prerequisite: FNGB 7422.

FNGB 74AM. Emerging Markets. (1.5 or 3 Credits)
This course explores how the major “emerging market” (EM) states have evolved from “traditional” societies with “underdeveloped” economies into modern societies with more developed economies ever since the Berlin Wall came down. Because these EM states reformed and opened up their economies, they benefited from their vast human and commodities resources and rapidly increased their per capital income.
Attribute: ABIB.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74AN. Investment Banking. (3 Credits)
This course is intended to give students a practical introduction to investment banking and its role in helping corporations raise capital from the global capital markets. Topics include: venture capital, public offerings, private placements, going public, stock and bond financing, convertibles and other hybrid instruments, design of innovative securities, swaps and other derivative instruments, mergers and acquisitions and leveraged buyouts.
Attribute: ABEP.
Prerequisite: FNGB 7421.

FNGB 74AO. Alternative Investments. (3 Credits)
The course is an introduction to the rapidly evolving universe of alternative investments. Delivered in modules, the course covers a broad array of alternative strategy classes (Quantitative/Systematic, Fundamental Long/Short, Global Macro, Private Equity) ranging across all major asset classes (Equities, Fixed Income, Currencies, Commodities, Derivatives). The first half of the course constructs a broad framework for the evaluation of alternative strategies, focusing on the quantitative strategy class as a diverse and relatively easier-to-evaluate source of investment ideas for discourse and case study. The second half progresses through the remainder of the alternative strategy classes under the evaluation framework, ties together the role of alternatives within an asset allocation framework, studies subjective decision making in the context of alternatives and concludes with student presentations of their favorite investment thesis from the course. Throughout, there will also be discussion of career development both within and without the alternative investment space.
Prerequisite: FNGB 7421.
FNGB 74AP. Real Estate Capital Markets. (3 Credits)
This Real Estate Capital Markets course will cover both the primary and secondary debt and equity markets linked to real estate assets. While the underlying real estate assets in the primary markets will be covered, a greater portion of the class will be devoted to the secondary debt and equity markets, mainly dealing with mortgages, mortgage backed securities, and Real Estate Investment Trusts (REITs). A distinguishing aspect of this course is the focus on the intersection of the primary and secondary real estate capital markets, investor perspectives, and the impact of macroeconomic factors. Additionally, this course will include a robust mix of quantitative and qualitative factors in order to provide a holistic, less technical perspective on the real estate capital markets, and the real estate industry at large.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74AQ. Adv Global Portfolio Mgt. (3 Credits)
The course will review (1) basics of modeling of securities' returns and volatility in the context of portfolio management / “buy-side”; (2) theoretical basis and empirical evidence of risk-return trade off and investor preferences; (3) main approaches to portfolio construction and challenges with their practical application; (4) performance evaluation, and other relevant portfolio management topics.

FNGB 74AR. ST: Corporate Restructuring. (3 Credits)
The course discusses the strategies, valuation, and processes of corporate restructuring decisions such as mergers and acquisitions, corporate diversification, spin-offs, carve-outs, asset sell-offs, tracking stock, exchange offers, and/or debt restructuring. It also discusses various securities issuances, including initial public offerings.
Prerequisite: FNGB 6411.

FNGB 74AS. Financial Modeling. (3 Credits)
Develops (using Excel) the type of financial models that businesses use every day to analyze a wide range of financial problems and make decisions. Covers modeling of financial statements and models in many other important practical areas, such as time value of money, project evaluation, bonds, investment management and derivatives. Emphasizes on using most powerful and useful tools in Excel, such as logical functions, PivotTables, Data Table, Scenario Manager, Goal Seek to solve problems that closely resemble real-life situations.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74AT. Fintech Compliance- Asia to Us. (3 Credits)
An overview of the components of an effective global Corporate Compliance Program. Examination of the Part C Risk Assessment and the Seven Steps of a corporate compliance and ethics program. Review of compliance program design and best practices, including the roles of the corporate compliance office and in-house counsel, risk assessments, Foreign Corrupt Practices Act, global codes of conduct, corporate governance, monitoring and re-evaluation.
Attribute: ABFF.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74AU. Algorithm Trading. (3 Credits)
Electronic algorithms are being used by major institutions, investment banks, and hedge funds to trade stocks, bonds, currencies, and a plethora of financial derivatives. Algorithms are being used for all aspects of trading - from asset allocation and stock selection, to execution and implementation, and for risk management and regulatory and compliance reporting. In this course, students will learn the necessary skill sets, and underlying math, statistics, and programming skills to build, develop, manage, and implement profitable algorithms across all asset classes.
Attribute: ABFF.
Prerequisite: FNGB 7421.

FNGB 74AV. Seminar in Value Investing. (3 Credits)
This course is designed to introduce the fundamentals of the Graham and Dodd value approach to investment analysis. The course will be segmented into two parts: the basic structure of the analytical approach to value investing and its relationship to many of the elements of the MBA curriculum will be described through lectures, exercises, readings, in-class discussions and homework assignments; the last sessions of the course will be devoted to student presentations of their investment recommendations. Parts of the course will entail empirical data analysis.
Prerequisite: FNGB 7421.

FNGB 74AW. Applied Capital Markets and Financial Regulations. (3 Credits)
This course will explore how the market structure has fundamentally changed after the 2008 liquidity and credit crisis, and how this crisis has affected liquidity, balance sheets, risk taking, and returns across the entire financial services industry. The new reality is that regulation has changed the landscape of Wall Street and the dynamic of how the sell-side and buy-side will interact in the foreseeable future.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74AX. International Fin Mgt. (3 Credits)
The goal of this course is to explain the concepts of corporate finance and their applications in an international setting. We will examine opportunities and problems that are faced specifically by multinational and foreign corporations and will compare corporate finance practices around the world. Topics covered in the course include foreign exchange rate mechanics, international parity theories, forecasting and hedging, international cost of capital, capital budgeting, capital structure, and valuation of foreign investments.
Prerequisite: FNGB 7421 (may be taken concurrently).

FNGB 74AY. Global Financial Markets. (3 Credits)
This course is intended as an introduction to Global Financial Markets. We will discuss the instruments traded in the markets, the institutions that support and frame the markets, the trading mechanisms and the regulatory structure. The course is intended to be descriptive and conceptual. The aim is to familiarize you with the breadth and scope of equity, debt, and derivative markets. We shall discuss the recent developments in the US and the development of financial markets globally.
Prerequisite: FNGB 7421 (may be taken concurrently).

FNGB 74AZ. Innov in Business & Energy. (3 Credits)
This course aims to frame and critique opportunities for business to create innovations in energy systems. It discusses how contemporary energy systems have evolved and how energy infrastructures vary across regions of the world. It also examines how business decision makers can think about choices of energy and energy systems by encouraging students to think broadly in terms of innovation possibilities.
Attribute: ABGS.

Updated: 01-31-2020
FNGB 74BA. Communicating Finance Theory. (0 Credits)
This lecture series will provide a summary of many financial topics. The class will also train students to communicate knowledge of this material to professionals at financial institutions.

FNGB 74BB. Applied Investment Principles. (3 Credits)
This course provides applications that follow Principles of Finance or Global Investment Principles. EXCEL models will be applied to CAPM modeling of Risk and Return, to Factor Models, and to Portfolio Attribution. Data may be drawing from Boomerang, Yahoo Finance, and other sources.
Prerequisite: FNGB 7421.

FNGB 74BC. Research in Value Invest. (3 Credits)
Prof. Johnson, a leading expert in the field of Value Investing, will lead a small, project based seminar that focuses on best practices in the field. Selective enrollment by approval of the instructor.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74BD. Impact Investing. (3 Credits)
This course will discuss investment strategies that have a societal orientation from both financial and socially responsible perspectives. The key questions are: how can we allocate money in a manner that is beneficial to all stakeholders and viable in a business sense, and, what are the appropriate metrics to evaluate such investments. Impact investments to be analyzed include government and ESG (environmental, social, governance) policies, micro finance, philanthropy, and green energy.
Attribute: ABGS.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.

FNGB 74BE. Lectures in Applied Port Mgt. (3 Credits)
This advanced Portfolio Management course quickly reviews Modern Portfolio Theory (MPT) conceptual underpinnings and builds on MPT 1.0. It delves into contemporary liability driven asset allocation, MPT 2.0 and portfolio management industry practices, issues and concerns. Lectures, problem solving, and self-study along with extensive hands-on tools using Microsoft Excel based models will be used to provide a practitioner’s perspective. We will review and demo contemporary asset allocation optimization and forecasting techniques, new asset class pricing and valuation, performance and risk attribution, tail risk measurement and management tools etc. using real time vendor based (third party) solutions. As prerequisites - the student should have class exposure to investment and portfolio analysis, Excel, stats, and basic regressions.
Prerequisite: FNGB 7421.

FNGB 74BF. Financial Innova & Institu. (3 Credits)
This course will introduce major financial institutions, such as commercial and investment banks, insurance companies, mutual funds, hedge funds, and credit rating agencies with a focus on their risk contributions to the modern financial system. We will examine their credit risk in depth, and how to model and analyze credit risk and products. We will also understand new financial sector regulations and systemic risk by focusing on Dodd-Frank, market based stress-testing, Comprehensive Capital Analysis and Reviews (CCAR), and other methods. This course will help prepare students for the job market at financial institutions and regulators.

FNGB 74BG. Auto Trading Systems - Intro. (3 Credits)
This course discusses key issues involved in the design of an Auto (Algorithmic) Trading Systems, and provides hands-on experience. The end product is a prototype Auto Trading System designed by students that successfully trades in the real market (stock, futures, option) using live data feeds from exchanges. Issues covered include: typical structures of trading systems; efficient processing of live information; minimizing trade slippages; handling large number of securities; asynchronous information processing; GUI interfaces; etc. Industry experts are invited to discuss new developments. Key programming techniques will be reviewed at the beginning, very briefly. The course is suitable for students in MSGF, MSQF, and other master level students with programming skills equivalent to one formal course (e.g, R, Matlab, VBA, etc). Students with less programming skill may take the course if approved by instructor.
Attribute: ABFF.

FNGB 74BH. Investing in European Union. (3 Credits)
The EU is the largest market for US exports and foreign direct investment. The objective of the course is to familiarize students with the process of regional integration and monetary unification in Europe and the opportunities and challenges which this has created for foreign investors. Regulatory differences between the US and EU in competition laws and financial sector will related to the investment climate for foreign companies. The course will highlight that despite the deep economic and financial integration in the EU, significant country- and regional differences exist. This will be assessed through the analysis of several Harvard Business case studies covering different country- and industry experiences.

FNGB 74BJ. Financial Media. (3 Credits)
Financial Media examines the complex interactions between business, politics, and the press. The course is designed to help students achieve a better understanding of how business content is delivered and retrieved in the current media environment. The course focuses on the dynamics of reporting about companies and business industry leaders who are using the media to deliver critical messages to several stakeholder groups, including investors and consumers. The course provides numerous examples of business or political leader interactions with the media and debates their communication strategy as well as their outcomes.

FNGB 74BK. Fintech - An Introduction. (3 Credits)
FinTech is a new and emerging field of technology that is disrupting the way that many companies are conducting business. FinTech has already “forever” changed many sectors including mobile payments, social media, money transfers, loans, fundraising, travel, trading and asset management. It has completely revolutionized the way companies are developing products, conducting research, establishing directed sales and marketing plans, and utilizing start-up technology. Businesses are using FinTech to expand their products and services at a fraction of its previous cost. Entrepreneurs are utilizing FinTech as a central foundation for research, funding, and product development. Customers are already utilizing FinTech as part of their daily lives - mobile apps, social media, banking, online shopping, entertainment and gaming. This course will introduce students to the breadth of FinTech, and touch upon the technical underpinnings.
Attribute: ABEP.
Prerequisites: FNGB 6411 or GBA Waiver Fin Environment with a score of 070.
FNGB 748L. Stress Tests and Cap Adequacy. (3 Credits)
The financial crisis of 2007-08 taught us all a lesson: that preparedness is everything. How resilient and prepared will we be, and how fast will we be able to recover? This is the key focus of this course: how to plan for moments of distress so that firms such as yours have capital of a sufficient quality to survive potential storms. We will demonstrate how to create a robust capital plan and test it for moments of hypothetical stress. We will investigate exactly how a bank holding company and an insurance company should conduct their capital plan, highlighting the significant differences between the two industries. By the end of the course, you will be able to create a capital plan for your business on your own.

FNGB 748M. Empirical Value Investing. (3 Credits)
This course examines historical data to consider empirical aspects of Value Investing. Excel or other programming will be important to the course. Theoretical and institutional issues will also be discussed.

FNGB 748N. Investor Relations. (3 Credits)
corporate Investor Relations program formulates and communicates the financial performance and strategic direction of diversified corporations to the global investment community. Investor Relations professionals are well versed in accounting, compliance, finance, governance, marketing and communications. They collaborate with senior management and the Board of Directors to convey and interpret corporate matters to the public. This course will teach students the skills and competencies required to become a corporate Investor Relations professional. The course utilizes a course textbook, case studies, investor relations guest speakers and participation in investor relations events.

FNGB 748P. Wharton-Impact Investment Workshop. (3 Credits)
Students will attend workshops on ESG (Environmental, Social, and Corporate Governance) and Impact Investing. They will will compete in teams of three to five against other nationwide schools to construct a 100% Impact Portfolio. Since this is a two-semester competition, only students who participated in Fall may register in Spring.

FNGB 748Q. Contemp Develop in Corp Fin. (3 Credits)
This course will cover a number of important topics of current interest to the corporate finance industry, such as : executive compensation and governance; utilizing and responding to fintech; importance of the growth of intangible assets; importance of large corporate cash holdings invested in risky assets, such as hedge funds and private equity.
Prerequisite: FNGB 7422.

FNGB 748R. Behavioral Finance. (3 Credits)
Over the past several decades, the field of finance has developed a successful paradigm based on the notions that investors and managers are generally rational and that the prices of securities are generally efficient. In recent years, however, anecdotal evidence as well as theoretical and empirical research has shown this paradigm to be insufficient to describe various features of actual financial markets. In this course we will use psychology and more realistic settings to guide and develop alternative theories of financial markets. We will examine how the insights of behavioral finance complement the traditional paradigm and shed light on investors' trading patterns, the behavior of asset prices, corporate finance, and various financial market practices through lectures, case studies, and our own discussions.
Prerequisite: FNGB 7421.

FNGB 748S. Student Managed Investment Fund: ESG-Impact. (3 Credits)
In this joint graduate and undergraduate course, students will apply their investment and portfolio skills in the analysis and selection of a real set of securities and opportunities. Selection will focus on ESG investments and/or those that stress societal impact.

FNGB 748T. Fintech Lending & Payments. (3 Credits)
This course will consider modern on-line methods of lending and borrowing that may be outside of the traditional banking environment. The main players in the space will be analyzed, as well as their websites. Students will learn their business models, methods of credit analysis, and measures of return to investors.
Attribute: ABFF.

FNGB 7811. Finance - Internship. (1 to 3 Credits)

FNGB 8009. M&A and Leverage Acquisition. (1.5 Credits)
The course covers corporate debt solutions and provides an overview of credit risk principles. It will focus on corporate acquisitions and LBOs, and analyze different sources of funding, from senior to subordinated. Students will hear from many guest speakers, learn main capital structure issues, and be exposed to the current market environment.

FNGB 8405. Iss. Fin: Delevgd Fin. (1.5 Credits)
This course discusses the use of debt in LBOs, recapitalization, restructuring and refinancing, including Debtor-in-Possession (DIP) financing. Students develop practical insights by utilizing case studies from several public highly leveraged firms; practical insights are critically reviewed.
Prerequisite: FNGB 7421.

FNGB 8408. Acquisition & Leverage Fin. (1.5 Credits)
The course covers corporate debt solutions and provides an overview of credit risk principles. It will focus on corporate acquisitions and LBOs, and analyze different sources of funding, from senior to subordinated. Students will hear from many guest speakers, learn main capital structure issues, and be exposed to the current market environment.
Prerequisite: FNGB 7422.

FNGB 8414. Modern Financial Analysis. (1.5 Credits)
Learn how the financial services industry applies valuation techniques in a deal context! In this mini-course, you will demystify the theory behind the analytics and ultimately appreciate the “art” and “science” of valuation analytics. What is a company worth? What is someone willing to pay? The answers depend on: who the seller is; who the potential buyer(s) is; the context of the transaction and the current market conditions... Attribute: ABEP.
Prerequisite: FNGB 7421 (may be taken concurrently).
FNGB 8415. FinImks: Cncpts/Methods/Trd. (1.5 Credits)
This course provides a real-life, hands-on experience of financial market activity and its impact on the broader economy. Throughout the course, students will participate in a trading game (which is explained in more details below) to assess and manage real world factors such as counterparty risk, liquidity, leverage, etc. They will also learn the impact of various policy issues on the markets and thus the economy (ex: impact of limiting foreclosures), some of the mathematics behind the markets, and the broad spillover effects of various investor / issuer decisions.
Class sessions will be divided into two parts, lectures and trading. No prior market experience is required, but students are expected to have a passion to learn about financial market activity and stay aware of current market and political conditions. Trading Game: Students participate in 5 sessions of the trading game. Essentially, this game operates in a closed economy with various market participants (sell side, buy side, central bank, etc.) that trade a wide variety of assets, including stocks, bonds, loans, indices, commodities, CDS, currencies, and options, and do so in the context of the current, real world market environment (ex: record Treasury issuance). Each class will have an active trading session, and all market participants are expected to keep and update their trade books to track their P and L.
Prerequisite: FNGB 7421.

FNGB 849C. FinImks: Cncpts/Methods/Trd. (1.5 Credits)
This course provides a real-life, hands-on experience of financial market activity and its impact on the broader economy. Throughout the course, students will participate in a trading game to assess and manage real world factors such as counter party risk, liquidity, leverage, etc.

FNGB 849H. Advanced Finan Modeling. (1.5 Credits)
FNGB 849I. Blockchain. (1.5 Credits)
The course covers corporate debt solutions and provides an overview of credit risk principles. It will focus on corporate acquisitions and LBOs, and analyze different sources of funding, from senior to subordinated. Students will hear from many guest speakers, learn main capital structure issues, and be exposed to the current market environment.
Prerequisite: FNGB 7421.

FNGB 849J. Digital Currencies. (1.5 Credits)
Digital Currencies-New Revolution. The course will leverage what was taught in Digital Currency to explore specific examples of new technologies being used to develop new forms of currency and digital money, and redefine the broader category of capital. The course will use real products/service to explore these topics.
Attributes: ABBC, ABEP, ABFF.
Prerequisite: FNGB 849J (may be taken concurrently).

FNGB 849L. Empirical Value Investing - A. (1.5 Credits)
This course examines historical data to consider empirical aspects of Value Investing. Excel or other programming will be important to the course. Theoretical and institutional issues will also be discussed. The "A-section" will examine several topics / methods. It is a pre-req for the "B-section," which will investigate the same issues more fully.
Prerequisite: FNGB 7421.

FNGB 849M. Empirical Value Investing - B. (1.5 Credits)
This course examines historical data to consider empirical aspects of Value Investing. Excel or other programming will be important to the course. Theoretical and institutional issues will also be discussed. The "A-section" is a pre-req for the "B-section," which will investigate the same issues more fully.
Prerequisite: FNGB 849L (may be taken concurrently).

FNGB 849N. Disruption in Finan Services. (1.5 Credits)
Graduate students will learn directly from industry experts how new technologies, changing demographics and investor preferences are significantly impacting the delivery of wealth management, creation of investment products and capital market mechanisms. From the global adoption of crypto currencies to the trillion dollar tsunami of money flowing into passively managed ETFs, students will be exposed to the current and future implications of these "disruptions" and gain helpful insight and intelligence impacting their careers. We will focus on one “disruption” per week with subject matter experts explaining the economic and cultural implications for both winners and losers. This course will be valuable to all students navigating future employment opportunities in financial services.
Attributes: ABEP ABFF.

FNGB 8999. Independent Study. (3 Credits)

Global Finance Courses
GFGB 6000. CFA Prep. (0 Credits)
Student prep for the CFA exam; second year students and alumni along with faculty help students study and prepare for the CFA exam.

GFGB 6002. Basics of Finance. (1 to 3 Credits)
This course is an introduction to the financial system and the basic techniques in valuation of financial and physical assets. The course is primarily meant for someone who has not had a formal introduction to financial markets, institutions, and instruments. The course will cover the topics of Financial Statement Analysis, Time Value of Money, Valuation of Stocks and Bonds, Capital Budgeting, Cost of Capital, and the Efficient Market Hypothesis.

GFGB 6003. Managerial Economics. (1 to 3 Credits)
AVAILABLE ONLY TO STUDENTS IN THE MSGF PROGRAM. Examines microeconomic theory and concepts that strive to explain economic decisions of businesses in the marketplace. The dominant issues addressed are the factors of supply and demand and the relationship of production costs, output and market structures to pricing. Designed to provide the economic foundation for management decisions.

GFGB 6005. Financial Modeling. (3 Credits)
AVAILABLE ONLY TO STUDENTS IN THE MSGF PROGRAM. Develops (using Excel) the type of financial models that businesses use every day to analyze a wide range of financial problems and make decisions. Covers modeling of financial statements and models in many other important practical areas, such as time value of money, project evaluation, bonds, investment management and derivatives. Emphasizes on using most powerful and useful tools in Excel, such as logical functions, PivotTables, Data Table, Scenario Manager, Goal Seek to solve problems that closely resemble real-life situations.
**GFGB 6006. International Financial Management. (3 Credits)**
This course will explain the concepts of corporate finance and their applications in an international setting. We will examine opportunities and problems that are faced specifically by multinational and foreign corporations and will compare corporate finance practices around the world. Topics covered in the course include foreign exchange rate mechanics, international parity theories, forecasting and hedging, international cost of capital, capital budgeting, capital structure, and valuation of foreign investments.

**GFGB 6007. Global Investment Principles. (3 Credits)**
The objective of this course is to introduce the student to investment principles in the U.S. and in the global capital market. We will understand existing assets and investment vehicles, the functioning of capital market, the theoretical principles that underline asset pricing, and its applications in the valuations of fixed income and equity securities.

**GFGB 6008. Financial Econometrics. (3 Credits)**
This course covers estimation of parametric and non-parametric techniques commonly used in finance, applying high-frequency financial databases. We will discuss properties of financial data; linear time-series data analysis; and the basic theory of statistical inference with linear models, general linear models, conditional Heteroskedasticity models, nonlinear models, and Bayesian inference and estimation.

**GFGB 6010. Global Financial Markets. (3 Credits)**
This course is intended as an introduction to Global Financial Markets. We will discuss the instruments traded in the markets, the institutions that support and frame the markets, the trading mechanisms and the regulatory structure. The course is intended to be descriptive and conceptual. The aim is to familiarize you with the breadth and scope of equity, debt, and derivative markets. We shall discuss the recent developments in the US and the development of financial markets globally.

**GFGB 6011. Basics of Accounting. (1 to 3 Credits)**
This course provides a basic understanding of the preparation and analysis of corporate financial statements; introduces generally accepted accounting principles (GAAP) and the standard-setting process; and discusses current issues in the reporting process, such as the benefits and problems of the Sarbanes-Oxley Act.

**GFGB 6012. Basics of Statistics. (1 Credit)**
This course introduces the basic statistical concepts essential for business research and decision-making. These include descriptive statistics, probability distributions, statistical inference, and simple and multiple regressions.

**GFGB 6013. Communicating Finance Theory. (0 Credits)**
This lecture series will provide a summary of many financial topics. The class will also train students to communicate knowledge of this material to professionals at financial institutions.

**GFGB 6014. MSGF—Industry Applications. (0 to 1.5 Credits)**
This course is required for all new students in the Master of Science in Global Finance (MSGF) program. The program director will lead lectures and bring in many industry professionals to expose MSGF students to a range of financial applications and opportunities. Grading will be Pass/Fail.

**GFGB 6015. MSGF Roundtable. (0 Credits)**
This course is required for all new students in the Master of Science in Global Finance program. The program director will lead small group seminars of 15 to 20 students. Topics will be focused on student interests and needs. Each student will select two sessions to attend during the term, one in the first half and in the second half. Grading will be Pass/Fail.

**GFGB 7001. Global Financial Markets. (3 Credits)**
AVAILABLE ONLY TO STUDENTS IN THE MSGF PROGRAM. Provides a comprehensive overview of global financial markets, the functions and goals of key financial institutions and the role played by central banks and regulatory agencies. Covers international money markets, international equity markets, the foreign exchange market, forward markets for commodities and financial instruments, bond markets and derivative markets. Prerequisites: GFGB 6001-PRINCIPLES OF MODERN FINANCE, GFGB 6003-MANAGERIAL ECONOMICS.

**Prerequisites:** GFGB 6001 and GFGB 6003.

**GFGB 7002. Contemp Issues Global Finance. (3 Credits)**
AVAILABLE ONLY TO STUDENTS IN THE MSGF PROGRAM. Explores current issues relevant to the global financial system, including international commercial and investment banking and international investments. It emphasizes the underlying conditions and fundamental trends in various sectors of international finance. Prerequisites: GFGB 6001-PRINCIPLES OF MODERN FINANCE, GFGB 6005-FINANCIAL MODELING.

**Attributes:** GFCF, GFCR, GFIM.

**GFGB 7004. Global Equity Portfolio Mgt. (3 Credits)**
AVAILABLE ONLY TO STUDENTS IN THE MSGF PROGRAM. Provides a comprehensive overview of equity portfolio management in theory and practice. Examines portfolio objectives and links them to appropriate investment strategies. It covers pricing of equities, the asset-allocation decision, return enhancement/risk control techniques, performance evaluation and recent changes in international fund management. Analyzes international investment strategy and the relative merits of various approaches. Prerequisites: GFGB 6001-PRINCIPLES OF MODERN FINANCE, GFGB 6005-FINANCIAL MODELING.

**Attribute:** GFIM.

**GFGB 7005. Global Corp Governance. (3 Credits)**
AVAILABLE ONLY TO STUDENTS IN THE MSGF PROGRAM. Examines how modern publicly traded corporations are governed in the global markets. It discusses the roles of the board of directors, corporate management, institutional investors, and other shareholders, and also discusses the effects of the recent legislation and financial market developments on corporate governance. Provides international comparisons of corporate governance structures and issues arising in contests for corporate control. Prerequisites: GFGB 6001 PRINCIPLES OF MODERN FINANCE, GFGB 6005-FINANCIAL MODELING.

**Attributes:** GFCF, GFCR.

**GFGB 7006. Global Risk Management. (3 Credits)**
AVAILABLE ONLY TO STUDENTS IN THE MSGF PROGRAM. Covers market risk and volatility, calculation of vaR (value at Risk), Monte Carlo Simulation, credit risk and use of credit derivatives, operational risk, counterparty risk and other topics. Discusses risk regulations, including Basel II, recent developments in Basel III, and recent regulations on the banking industry in the U.S. Prerequisites: GFGB 6001-PRINCIPLES OF MODERN FINANCE, GFGB 6005-FINANCIAL MODELING.

**Attributes:** GFCF, GFCR, GFIM.
GFGB 7007. Raising Capital and Investing in Global Financial Markets. (3 Credits)
AVAILALBE ONLY TO STUDENTS IN THE MSGF PROGRAM. Provides a comprehensive overview of the going-public decision. Examines the strategies and process of corporate restructuring and investing activities, such as mergers and acquisitions, corporate diversification, spin-offs, carve-outs, asset sell-offs, tracking stock, exchange offers, and debt restructuring. Prerequisites: GFGB 6001 PRINCIPLES OF MODERN FINANCE, GFGB 6004-FINANCIAL STATEMENT ANALYSIS.
Attribute: GFCF.

GFGB 7009. Money Credit Interest Rates. (3 Credits)
Studies the role of money, credit and interest rates in the efficient and ethical functioning of domestic and global financial markets. This building-block course assumes a background in macroeconomics and finance, and it establishes a foundation for further study in all areas of finance. Topics include: flow of funds and interdependency within the financial system; the Federal Reserve System and its role in money creation; interest rates; the links between interest rates and the growth of money; and the effects of inflation and term structure.
Attribute: GFCF.

GFGB 7010. Investment Banking. (3 Credits)
This course is intended to give students a practical introduction to investment banking and its role in helping corporations raise capital from the global capital markets. Topics include: venture capital, public offerings, private placements, going public, stock and bond financing, convertibles and other hybrid instruments, design of innovative securities, swaps and other derivative instruments, mergers and acquisitions and leveraged buyouts.
Attribute: GFCF.

GFGB 7011. Hedge Fund. (3 Credits)
The course provides in-depth analysis of hedge fund strategies including absolute-return; controlled risk arbitrage; equity market neutral, long short, and statistical arbitrage; derivatives including options and credit derivatives; fixed income, currency and global macro arbitrage; distressed debt and emerging markets. It examines the role of various participants including regulators, banks, brokerage firms, market makers and investors, both private and institutional.
Attribute: GFCF.

GFGB 7013. Fixed Income Securities. (3 Credits)
Introduces fixed-income securities, basic fixed-income concepts, the different sectors of the fixed-income market and basic bond mathematics. Studies quantitative fixed-income analysis and its use in valuing bonds and quantifying risk-return characteristics. Involves extensive training in the mathematical formulation of bond valuation problems and in the use of the existing models and software to solve these problems.
Attribute: GFIM.

GFGB 7014. Futures and Options. (3 Credits)
Examines the institutional aspects of options and futures markets and discusses the strategies of hedgers, arbitrageurs and speculators. Provides an introductory analytical foundation for pricing futures and option contracts.
Attribute: GFIM.

GFGB 7015. Credit Management. (3 Credits)
This course focuses on the analytic approach (stemming from Basel II capital accords) and will help students make wise credit decisions and manage lending portfolios. Topics include the latest lending techniques based on cash flow, advanced forecasting methods (including simulation and stochastic optimization), pricing, portfolio management, default probability, valuation analysis risk rating and credit derivatives.

GFGB 7016. Real Estate Capital Markets. (3 Credits)
This Real Estate Capital Markets course will cover both the primary and secondary debt and equity markets linked to real estate assets. While the underlying real estate assets in the primary markets will be covered, a greater portion of the class will be devoted to the secondary debt and equity markets, mainly dealing with mortgages, mortgage backed securities, and Real Estate Investment Trusts (REITs). A distinguishing aspect of this course is the focus on the intersection of the primary and secondary real estate capital markets, investor perspectives, and the impact of macroeconomic factors. Additionally, this course will include a robust mix of quantitative and qualitative factors in order to provide a holistic, less technical perspective on the real estate capital markets, and the real estate industry at large.

GFGB 7017. Real Estate Finance. (3 Credits)
Discusses the major factors affecting the valuation and financial structuring of real estate, including general tax and depreciation policies. Presents the roles of principal lending institutions, mortgage banks and investment banks in real estate lending, syndications and partnerships. Also surveys real estate-related securities and their markets.

GFGB 7018. Adv Global Portfolio Mgt. (3 Credits)
The course will review (1) basics of modeling of securities' returns and volatility in the context of portfolio management / "buy-side"; (2) theoretical basis and empirical evidence of risk-return tradeoff and investor preferences; (3) main approaches to portfolio construction and challenges with their practical application; (4) performance evaluation, and other relevant portfolio management topics.

GFGB 7019. Equity Analysis. (3 Credits)
This course explores techniques and skills required to evaluate the attractiveness of investment opportunities. Experts in the field will be invited to join the class and lead discussions on issues facing analysts, how analysis is used by money managers in making investment decisions, wealth management, and private equity analysis. The course is a combination of guest lectures, case studies and team projects. Students will be expected to analyze an industry as well as engage in a discussion with guest speakers and class participants.

GFGB 7020. Value Investing Student Mgt Fund. (3 Credits)
This course aims to familiarize the student with the principles and techniques of value investing, the investment philosophy pioneered by Graham and Dodd during their years at Columbia Business School. This will be done through a combination of formal lectures, in-class valuation discussions (see below) and three presentations by leading investors.

GFGB 7021. Emerging Markets. (3 Credits)
This course will focus on government policies; their motivation, transmission and limitations. Students will learn how a country's investment possibilities and potential GDP is driven by its labor force and productivity. In turn, the level of productivity can be affected by a confluence of monetary, fiscal, currency and regulatory policies developing at the “emerging growth” phase when political goals and legal structures are still in transition, financial and government institutions are not yet fully formed and consumer spending behavior and market availability are evolving.
Attribute: GFIM.
GFGB 7022. Venture Capital Financing. (3 Credits)
We will examine the changes in the asset class over time - from the formation of American Research and Development in 1946 to the formation of some of the angel-type funds of the present. We also will examine the geographical differences between venture funds - West Coast and East Coast. We also will look at specialization - the beginnings of IT-focused investing and the move into healthcare and finally into energy. Finally we will examine the phenomenon of global venture capital. How does that vary from the way venture capital is practiced in the US. The class will be taught in modules and we also will rely on practitioners and experts to visit with the class. Where possible, the students will be asked to visit venture capital fund presentations, expert briefings as well as personal briefings.

Attribute: ABEP.

GFGB 7024. Fintech Compliance-Asia to Us. (3 Credits)
An overview of the components of an effective global Corporate Compliance Program. Examination of the Part C Risk Assessment and the Seven Steps of a corporate compliance and ethics program. Review of compliance program design and best practices, including the roles of the corporate compliance office and in-house counsel, risk assessments, Foreign Corrupt Practices Act, global codes of conduct, corporate governance, monitoring and re-evaluation.

Attribute: GFCR.

GFGB 7025. Adv Corporate Finance. (3 Credits)
This course teaches the art of applying corporate finance theory and essential tools and techniques to strategic decision-making in critical real-life situations faced by organizations. The course enhances the students' understanding of corporate finance by providing a comprehensive examination of selected advanced topics, such as alternative valuation methods, real options in corporate finance, decision trees, international operations, mergers and acquisitions, risk arbitrage, debt capacity and leveraged buyouts, private equity, warrants and convertibles, and ethical issues.

Attribute: GFCF.

GFGB 7026. Alternative Investments. (3 Credits)
The course is an introduction to the rapidly evolving universe of alternative investments. Delivered in modules, the course covers a broad array of alternative strategy classes (Quantitative/Systematic, Fundamental Long/Short, Global Macro, Private Equity) ranging across all major asset classes (Equities, Fixed Income, Currencies, Commodities, Derivatives).

Attribute: GFCM.

GFGB 7027. Algorithm Trading. (3 Credits)
Electronic algorithms are being used by major institutions, investment banks, and hedge funds to trade stocks, bonds, currencies, and a plethora of financial derivatives. Algorithms are being used for all aspects of trading - from asset allocation and stock selection, to execution and implementation, and for risk management and regulatory and compliance reporting. In this course, students will learn the necessary skill sets, and underlying math, statistics, and programming skills to build, develop, manage, and implement profitable algorithms across all asset classes.

GFGB 7028. Technical Analysis. (3 Credits)
This course is designed to inform students about how the markets and individual stocks behave (i.e., technical analysis), and how they differ from the economy and individual companies (i.e., fundamental analysis).

GFGB 7029. Student Managed Investment Fund. (3 Credits)
Students will be trained on construction of a disciplined investment process using “Value Investing” strategy as the core foundation based on research work accentuated by Benjamin Graham and David Dodd. Students are expected to develop relationships with the Wall Street “sell-side analyst(s) covering his or her stocks as well as the Investor Relationship (IR) person(s) of the targeted stocks. A team of industry experts, fundamental analysts, portfolio managers, risk managers and other investment professionals will work closely with students to ensure that the students are exposed to various tools and methods that are currently being employed in the industry.

GFGB 7030. CFA Competition and Workshop. (0 Credits)
While this course is for zero credit, it has a heavy work load and provides valuable practical experience. Students will be arranged into teams. Each team will write a full sell-side coverage report, build out a presentation, and pitch it to Fordham Wall Street alumni.

GFGB 7031. Seminar in Value Investing. (3 Credits)
This survey course is designed to introduce the fundamentals of the Graham and Dodd value approach to investment analysis. The course will be segmented into two parts: the basic structure of the analytical approach to value investing and its relationship to many of the elements of the MBA curriculum will be described through lectures, exercises, readings, in-class discussions and homework assignments; the last sessions of the course will be devoted to student presentations of their investment recommendations.

GFGB 7032. Applied Capital Markets and Financial Regulations. (3 Credits)
This course will explore how the market structure has fundamentally changed after the 2008 liquidity and credit crisis, and how that crisis has affected liquidity, balance sheets, risk taking, and returns across the entire financial services industry. The new reality is that regulation has changed the landscape of Wall Street and the dynamic of how the sell-side and buy-side will interact in the foreseeable future.

GFGB 7033. Corporate Finance. (3 Credits)
Studies corporate finance and its specific decisions. Topics include evaluating capital expenditure proposals, forecasting financing requirements and selecting sources of financing. The course also discusses working capital management, dividend policy and contingency planning, and addresses the additional challenges of multinational firms.

GFGB 7034. Finl Statement Analysis. (3 Credits)
Gives students a better understanding of financial statements and the information they communicate on the operating, investing and financing activities of corporations. Focuses on the impact of financial accounting principles, disclosure standards and alternative accounting practices on financial reports. Examines and evaluates traditional and non-traditional methods of financial statement analysis.

GFGB 7035. Intl Trade & Development. (3 Credits)
The first half of the course focuses on the theories and practices of world trade. Topics include comparative advantage, the changing trade competitiveness of nations and protectionism. During the second half, the focus shifts to developing countries: the process of economic development, including the contribution of foreign investment and technology as well as investment and trade opportunities, policies and regulations.

GFGB 7036. Research in Value Invest. (3 Credits)
Prof. Johnson, a leading expert in the field of Value Investing, will lead a small, project based seminar that focuses on best practices in the field. Selective enrollment by approval of the instructor.
GFGB 7037. Applied Investment Principles. (3 Credits)
This course provides applications that follow Principles of Finance or Global Investment Principles. EXCEL models will be applied to CAPM modeling of Risk and Return, to Factor Models, and to Portfolio Attribution. Data may be drawn from Boomerang, Yahoo Finance, and other sources.

GFGB 7038. Applied Quant Invest Strateg. (1.5 Credits)
This course provides applications that follow Financial Econometrics, using SAS or similar software. The techniques from that course will be reviewed, extended, and applied to stock return and accounting data. The focus will be on anomalies, predictions, and multifactor models.

GFGB 7039. Computational Fin for MSGF. (3 Credits)
The course will introduce students to programming in R and Python, and will provide many basic finance applications.

Attributes: ABFF, GFCR.

GFGB 7040. Lectures in Applied Port Mgt. (3 Credits)
This advanced Portfolio Management course quickly reviews Modern Portfolio Theory (MPT) conceptual underpinnings and builds on MPT 1.0. It delves into contemporary liability driven asset allocation, MPT 2.0 and portfolio management industry practices, issues and concerns. Lectures, problem solving, and self-study along with extensive hands-on tools using Microsoft Excel based models will be used to provide a practitioner’s perspective. We will review and demo contemporary asset allocation optimization and forecasting techniques, new asset class pricing and valuation, performance and risk attribution, tail risk measurement and management tools etc. using real time vendor based (third party) solutions. As prerequisites - the student should have class exposure to investment and portfolio analysis, Excel, stats, and basic regressions.

GFGB 7041. British Economy and Brexit. (3 Credits)
This intensive course is designed to give students an in-depth understanding of Brexit including the implications for the British economy and the companies that operate in it. Students meet three times as a class in preparation for travel to England, scheduled for May 10-20, 2017. This course may count toward a Finance or Management concentration. Please see your program director or dean-adviser for further registration information.

GFGB 7042. Sustainability and Finance. (3 Credits)
In this course we explore how the evolving needs of society are changing the way financial theories, tools, and techniques are conceived and applied.

GFGB 7043. Financial Innova & Institu. (3 Credits)
This course will introduce major financial institutions, such as commercial and investment banks, insurance companies, mutual funds, hedge funds, and credit rating agencies with a focus on their risk contributions to the modern financial system. We will examine their credit risk in depth, and how to model and analyze credit risk and products. We will also understand new financial sector regulations and systemic risk by focusing on Dodd-Frank, market based stress-testing, Comprehensive Capital Analysis and Reviews (CCAR), and other methods. This course will help prepare students for the job market at financial institutions and regulators.

GFGB 7044. Auto Trading Systems - Intro. (3 Credits)
This course discusses key issues involved in the design of an Auto (Algorithmic) Trading Systems, and provides hands-on experience. The end product is a prototype Auto Trading System designed by students that successfully trades in the real market (stock, futures, option) using live data feeds from exchanges. Issues covered include: typical structures of trading systems; efficient processing of live information; minimizing trade slippages; handling large number of securities; asynchronous information processing; GUI interfaces; etc. Industry experts are invited to discuss new developments. Key programming techniques will be reviewed at the beginning, very briefly. The course is suitable for students in MSGF, MSQF, and other master level students with programming skills equivalent to one formal course (e.g., R, Matlab, VBA, etc). Students with less programming skill may take the course if approved by instructor.

GFGB 7045. Investing in European Union. (3 Credits)
The EU is the largest market for US exports and foreign direct investment. The objective of the course is to familiarize students with the process of regional integration and monetary unification in Europe and the opportunities and challenges which this has created for foreign investors. Regulatory differences between the US and EU in competition laws and financial sector will related to the investment climate for foreign companies. The course will highlight that despite the deep economic and financial integration in the EU, significant country- and regional differences exist. This will be assessed through the analysis of several Harvard Business case studies covering different country- and industry experiences.

GFGB 7046. Fintech - An Introduction. (3 Credits)
FinTech is a new and emerging field of technology that is disrupting the way that many companies are conducting business. FinTech has already “forever” changed many sectors including mobile payments, social media, money transfers, loans, fundraising, travel, trading and asset management. It has completely revolutionized the way companies are developing products, conducting research, establishing directed sales and marketing plans, and utilizing start-up technology. Businesses are using FinTech to expand their products and services at a fraction of its previous cost. Entrepreneurs are utilizing FinTech as a central foundation for research, funding, and product development. Customers are already utilizing FinTech as part of their daily lives - mobile apps, social media, banking, online shopping, entertainment and gaming. This course will introduce students to the breadth of FinTech, and touch upon the technical underpinnings.

GFGB 7047. Stress Tests and Cap Adequacy. (3 Credits)
The financial crisis of 2007-08 taught us all a lesson: that preparedness is everything. How resilient and prepared will we be, and how fast will we be able to recover? This is the key focus of this course: how to plan for moments of distress so that firms such as yours have capital of a sufficient quality to survive potential storms. We will demonstrate how to create a robust capital plan and test it for moments of hypothetical stress. We will investigate exactly how a bank holding company and an insurance company should conduct their capital plan, highlighting the significant differences between the two industries. By the end of the course, you will be able to create a capital plan for your business on your own.

GFGB 7048. Dynamics of Banking & Fin Mkts. (3 Credits)
This course is designed to provide students a well-rounded and hands-on perspective on the practical functioning and decisions in financial markets and banking.
GFGB 7050. Machine Learning for Finance. (3 Credits)
Machine learning (ML) methods of data analysis and prediction are transforming the financial landscape. This course provides a broad overview, knowledge, and practical skills of Machine Learning (ML), focusing on applications in Finance. The course will introduce various ML methods including supervised and unsupervised learning, as well as deep and reinforcement learning. Students will understand the general landscape of available ML algorithms and learn to implement the most appropriate solutions of a given problem. The course will use Python programming and open source Python packages, and requires knowledge of statistics. Class sessions will provide the basics of Python, which is not a prerequisite, and resources will be provided for both Python and statistics.
Attribute: ABFF.

GFGB 7051. Econtech: Econ & Data Mining. (3 Credits)
The overall financial markets and individual company performance are largely driven by the growth rate of the economy, which in turn is affected by monetary, fiscal, and currency policies. Our understanding and forecasting ability are based on analyzing and mining available data. This course will examine data and data mining to better understand a range of policy and output variable, and how they interact under different regimes.
Attribute: ABFF.

GFGB 7052. Empirical Value Investing. (3 Credits)
This course examines historical data to consider empirical aspects of Value Investing. Excel or other programming will be important to the course. Theoretical and institutional issues will also be discussed.

GFGB 7053. Investor Relations. (3 Credits)
A corporate Investor Relations program formulates and communicates the financial performance and strategic direction of diversified corporations to the global investment community. Investor Relations professionals are well versed in accounting, compliance, finance, governance, marketing and communications. They collaborate with senior management and the Board of Directors to convey and interpret corporate matters to the public. This course will teach students the skills and competencies required to become a corporate Investor Relations professional. The course utilizes a course textbook, case studies, investor relations guest speakers and participation in investor relations events.

GFGB 7054. Wharton-Impact Investment Workshop. (3 Credits)
Students will attend workshops on ESG (Environmental, Social, and Corporate Governance) and Impact Investing. They will compete in teams of three to five against other national schools to construct a 100% Impact Portfolio. Since this is a two-semester competition, only students who participated in Fall may register in Spring.

GFGB 7055. MSGF Research Seminar. (3 Credits)
Students will learn from industry practitioners how textbook concepts are applied in the finance industry. Guest lecturers will cover areas which include wealth management, equity research, portfolio management, investment banking, risk management and FinTech.

GFGB 7056. Blockchain Tech & App Dev. (3 Credits)
The main objective of this course is to familiarize you with the ecosystem, technologies, and development skills surrounding Blockchain. The course starts with foundational concepts such as distributed state machine, hash tree, P2P network, GPU processing, cryptocurrencies, and cryptography. Using both simulated sandbox and locally installed environments, the course then guide you through the development, front-end integration, and deployment of Blockchain-based smart contracts. Other topics covered include rapid prototyping, design patterns, and agile process to maximize the success likelihood for Blockchain projects. Prerequisites: Proficiency in computer programming; basic knowledge in analysis and linear algebra.

GFGB 7057. Contemp Develop in Corp Fin. (3 Credits)
This course will cover a number of important topics of current interest to the corporate finance industry, such as: executive compensation and governance; utilizing and responding to fintech; importance of the growth of intangible assets; importance of corporate cash holdings invested in risky assets, such as hedge funds and private equity. Prerequisite: GFGB 6006.

GFGB 7058. Behavioral Finance. (3 Credits)
Over the past several decades, the field of finance has developed a successful paradigm based on the notions that investors and managers are generally rational and that the prices of securities are generally efficient. In recent years, however, anecdotal evidence as well as theoretical and empirical research has shown this paradigm to be insufficient to describe various features of actual financial markets. In this course we will use psychology and more realistic settings to guide and develop alternative theories of financial markets. We will examine how the insights of behavioral finance complement the traditional paradigm and shed light on investors’ trading patterns, the behavior of asset prices, corporate finance, and various financial market practices through lectures, case studies, and our own discussions.

GFGB 7059. Student Managed Investment Fund: ESG-Impact. (3 Credits)
In this joint graduate and undergraduate course, students will apply their investment and portfolio skills in the analysis and selection of a real set of securities and opportunities. Selection will focus on ESG investments and/or those that stress societal impact.

GFGB 8001. Iss in Fin: Modern Fin’al Ana. (1.5 Credits)
Learn how the financial services industry applies valuation techniques in a deal context! In this mini-course, you will demystify the theory behind the analytics and ultimately appreciate the “art” and “science” of valuation analytics. What is a company worth? What is someone willing to pay? The answers depend on: who the seller is; who the potential buyer(s) is; the context of the transaction and the current market conditions… The seminar is ideal for individuals are currently working in or are considering a career in the following disciplines: • Financial services industry (investment banking, consulting, research, asset management, private equity, brokerage, sales & trading, insurance, etc.) • Finance or strategic development group of a corporation – mid-sized thru multinational • Marketing, brand management or a non-finance field… namely anyone interested in gaining a solid foundation in valuation analytics in a condensed, real-world context.

GFGB 8002. Fin’lmkts: Cncpts/Methods/Trd. (1.5 Credits)
This course provides a real-life, hands-on experience of financial market activity and its impact on the broader economy. Throughout the course, students will participate in a trading game to assess and manage real world factors such as counterparty risk, liquidity, leverage, etc.
GFGB 8004. Iss in Fin: Delevgd Finance. (1.5 Credits)
This course discusses the use of debt in Leverage Buyouts, recapitalization, restructuring and refinancing, including Debtor-in-Possession (DIP) financing. Students develop practical insights by utilizing case studies from several public highly leveraged firms; practical insights are critically reviewed.

GFGB 8005. Business Communication for Finance - A. (1.5 Credits)
This class will enable students to learn and improve their communication and presentation skills so that they are better able to interact with and convey finance knowledge to business professionals.

GFGB 8006. Business Communication for Finance - B. (1.5 Credits)
This class will enable qualified students to more fluently converse with professionals on a variety of financial topics, and will improve students’ ability to achieve success as they enter the business community.

GFGB 8007. Computational Finance for MSGF - R. (1.5 Credits)
This course will introduce student to the R programming language, with applications to finance.

GFGB 8008. Computational Finance for MSGF - Python. (1.5 to 3 Credits)
This course will introduce student to the Python programming language, with applications to finance.

GFGB 8009. M&A and Leverage Acquisition. (1.5 Credits)
The course covers corporate debt solutions and provides an overview of credit risk principles. It will focus on corporate acquisitions and LBOs, and analyze different sources of funding, from senior to subordinated. Students will hear from many guest speakers, learn main capital structure issues, and be exposed to the current market environment.

GFGB 8010. Advanced Finan Modeling. (1.5 Credits)

GFGB 8011. Blockchain. (1.5 Credits)

GFGB 8012. Digital Currencies. (1.5 Credits)

GFGB 8013. Acct &Corp Fin-Valu&Modeling. (1.5 Credits)
This course expands on valuation techniques discussed in Modern Financial Analysis and Valuation Techniques. Students will have the opportunity to learn the modeling techniques used by todays Wall Street practitioners associated with Discounted Cash Flow Analysis, Merger Analysis, Purchase Price Allocations and Synergy DCFs. COREQUISTE: GFGB 8001.

GFGB 8014. Empirical Value Investing - A. (1.5 Credits)
This course examines historical data to consider empirical aspects of Value Investing. Excel or other programming will be important to the course. Theoretical and institutional issues will also be discussed. The "A-section” will examine several topics / methods. It is a pre-req for the "B-section," which will investigate the same issues more fully.

GFGB 8015. Empirical Value Investing - B. (1.5 Credits)
This course examines historical data to consider empirical aspects of Value Investing. Excel or other programming will be important to the course. Theoretical and institutional issues will also be discussed. The "A-section” is a pre-req for the "B-section," which will investigate the same issues more fully.

GFGB 8016. Disruption in Finan Services. (1.5 Credits)
Graduate students will learn directly from industry experts how new technologies, changing demographics and investor preferences are significantly impacting the delivery of wealth management, creation of investment products and capital market mechanisms. From the global adoption of crypto currencies to the trillion dollar tsunami of money flowing into passively managed ETFs, students will be exposed to the current and future implications of these "disruptions" and gain helpful insight and intelligence impacting their careers. We will focus on one “disruption” per week with subject matter experts explaining the economic and cultural implications for both winners and losers. This course will be valuable to all students navigating future employment opportunities in financial services.

GFGB 8017. Fintech Lending & Payments. (3 Credits)
This course will consider modern on-line methods of lending and borrowing that may be outside of the traditional banking environment. The main players in the space will be analyzed, as well as their websites. Students will learn their business models, methods of credit analysis, and measures of return to investors.

GFGB 8018. Fund Strategies and Performance. (3 Credits)
This course examines how money is managed by organizations such as university endowments, pension funds, mutual funds, hedge funds, and private equity funds. It provides an advanced treatment of asset allocation and equity portfolio strategies, and a performance evaluation of U.S. mutual funds and hedge funds. The course provides a deeper understanding of the measurement of risk and its relationship to return, as well as of multi-factor models. Implementation issues, including statistical estimation, back-testing, portfolio construction, and performance evaluation, are covered. Some programming skill (likely Python/SAS) will be important, and partly taught.

GFGB 8951. Internship & Project Report. (1.5 to 6 Credits)
Residential students have the option of including up to 6 credits of internships as part of their program of study. Please note that an internship is not required as part of the program; students may complete any two MBA or MSGF courses in lieu of an internship.

GFGB 8999. Independent Study. (1 to 3 Credits)
Independent study.

Quantitative Finance Courses
QFGB 8900. Greenpoint/Finastra Project. (0 Credits)
The goal of this program is conceptual learning and hands-on research with real-life portfolios and enterprise systems, including the Finastra Capital Markets Fusion Platform. At the end of the program students are expected to have enriched their learning—and their CVs—with projects that have direct industry applicability and through achievements that will enhance their employment prospects and career growth. The research will include FRTB QIS on a portfolio, model sensitivity of PLA tests, impact of specific portfolio features, and risk parameters on FRTB SA and IMA charges.

QFGB 8901. Accounting I. (1 to 3 Credits)
Provides a basic understanding of the preparation and analysis of corporate financial statements. Introduces generally accepted accounting principles (GAAP) and the standard-setting process. Discusses current issues in the reporting process, such as the benefits and problems of the Sarbanes-Oxley Act.
QFGB 8902. Basics of Economics. (1 to 3 Credits)
Covers both microeconomics and macroeconomics. Microeconomics topics include theory of demand and the nature of profit and utility-maximizing market equilibrium that constitute the economic basis of finance theory and applications. The macroeconomics segment defines the major components of the economy, outlines a simple model of long-run, real economic behavior with competitive, market clearing prices, then establishes a companion model of short-run adjustments without flexible pricing.

QFGB 8903. Basics of Finance. (1 to 3 Credits)
Provides a conceptual framework for decision-making processes in many diverse areas of finance. Concepts including time value of money, stock and bond valuation, project and firm valuations, risk and return measures, portfolio management, basic CAPM and APT, diversification and hedging are reviewed. Basic theoretical aspects of corporate finance, such as dividend policy and capital structure, are also introduced.

QFGB 8905. Math for Quantitative Finance. (1.5 Credits)
Reviews the basics of mathematics in preparation for advanced courses in the MSQF program. Topics include: Special functions, Multivariate calculus, Optimization, Integration, Differential equations (ODE and PDEs), and Linear algebra.

QFGB 8906. Probability and Statistics. (1.5 Credits)
Reviews the basics of probability and statistics in preparation for advanced courses in the MSQF program. Topics include special distributions like binomial, poisson, normal, lognormal, gamma, beta, and fat-tailed distributions.

QFGB 8907. Introduction to Web Technology: Blockchain. (0 Credits)
Blockchain technology is affecting the financial services industry and considered to be the biggest disruption in payments, financial contracts, and almost all other aspects of the financial services industry. The goal of this course is to give students a basic understanding of and hands-on experience with the web technology tools necessary for blockchain technology. This 0-credit course will be offered in the fall and must be taken prior to Blockchain Application Development course offered in the spring, which will involve development of a real blockchain application via various hands-on projects. Second-year M.S. in quantitative finance students are encouraged to take this introductory course in the second half of the fall term. The instructor will be a top industry expert in blockchain technology and its applications in the financial services industry.

QFGB 8911. Adv Financial Modeling. (2 Credits)
Provides the foundation for developing skills in the quantitative analysis of financial decisions, primarily using Microsoft Excel. Topics include business planning, forecasting, sensitivity and scenario analyses, risk and return measures, portfolio analysis, binomial option pricing and Value-at-Risk (VAR) analysis. Emphasizes practical skills to produce end products that are useful for a variety of decision-making purposes.

QFGB 8914. Basic of Derivatives. (2 Credits)
Introduces deferred delivery (i.e. exchange-traded futures and OTC traded forward) markets and option markets. The course covers the following: (1) briefly examines the institutional features of these markets; (2) discusses hedging, arbitrageur and speculator strategies; (3) provides and analytical foundation for the pricing of these contracts; (4) reviews some of the available empirical evidence concerning these markets; and (6) uses the data to perform small-scale suggestive tests of the theories and strategies.

QFGB 8915. Introduction to Stochastic Calculus. (2 Credits)
Focuses on the practical applications of stochastic differential equations subject to appropriate boundary conditions, solving valuation problems, and using measure-transformations as required in advanced financial engineering practice to value assets within a risk-neutral framework. Builds a theoretical foundation for continuous-time models that are essential for the pricing and hedging of financial derivatives.

QFGB 8923. Machine Learn & Econometrics. (2 Credits)
Covers estimation of parametric and non-parametric techniques commonly used in finance, applying high-frequency financial databases. Discusses properties of financial data, linear time series data analysis, basic theory of statistical inference with linear models, general linear models, conditional Heteroskedasticity models, nonlinear models and Bayesian inference and estimation.

QFGB 8924. Equity Style Derivatives. (2 Credits)
Designed to complement and extend the topics discussed in Basics of Derivatives (QF 8914), this course includes all types of derivatives where a commodity, equity, or currency is the underlying asset. Hull's software and a Bloomberg/Reuters terminal are used for pricing options and gathering data. The data to perform small-scale suggestive tests of theories and strategies is used.

QFGB 8925. Simulation Applications. (2 Credits)
Introduces state-of-the-art computational techniques essential for implementing financial models, pricing derivatives, obtaining numerical solutions to estimation problems, and simulating stochastic systems in risk management. Provides conceptual framework for gaining experience on simulation design and implementation using METLAB. This course builds a skill set that combines financial modeling, data analysis, and computation.

QFGB 8926. Finance Theory. (2 Credits)
Introduces financial theory with a particular emphasis on portfolio choice and the fundamentals of asset pricing. Focuses on both the partial equilibrium theory (CAPM), and the general equilibrium theory (Arrow-Debreu Pricing Theory) with brief introductions on the arbitrage-based theories. Introduces the basics of asymmetric information and how the problems it imposes can be mitigated via security design. It also emphasizes and understanding of the theories of Discrete-Time Asset Pricing; studies the application of the theory of stock options to real options and complex corporate liabilities; and explores the basic foundation of the GMM tests of asset-pricing theories.

QFGB 8927. Introduction to C++. (2 Credits)
This course will introduce quantitative finance students to programming in C++.

QFGB 8928. Auto Trading Systems - Intro. (3 Credits)
This course discusses key issues involved in the design of an Auto (Algorithmic) Trading Systems, and provides hands-on experience. The end product is a prototype Auto Trading System designed by students that successfully trades in the real market (stock, futures, option) using live data feeds from exchanges. Issues covered include: typical structures of trading systems; efficient processing of live information; minimizing trade slippages; handling large number of securities; asynchronous information processing; GUI interfaces; etc. Industry experts are invited to discuss new developments. Key programming techniques will be reviewed at the beginning, very briefly. The course is suitable for students in MSGF, MSQF, and other master level students with programming skills equivalent to one formal course (e.g. R, Matlab, VBA, etc). Students with less programming skill may take the course if approved by instructor.
QFGB 8931. Fixed Income Securities. (2 Credits)
Introduces fixed-income securities, basic fixed-income concepts, the different sectors of the fixed-income market, and basic ond mathematics. Studies quantitative fixed-income analysis and its use in valuing bonds and quantifying risk-return characteristics. Involves extensive training in the mathematical formulation of bond valuation problems and in the use of the existing models and software to solve these problems.

QFGB 8932. Financial Econometrics II. (2 Credits)
Introduces modern financial econometric techniques with a special focus on applications to finance. Both the theoretical framework for making statistical inference and exemplary applications using data in modern finance are emphasized. The course involves extensive use of commercial software packages as well as implementing new financial econometric techniques using high-level programming language, such as MATLAB.

QFGB 8934. Interest Rate Derivatives. (2 Credits)
Studies continuous time no-arbitrage models of yield curves and pricing of fixed-income securities and derivatives. In particular, treasury bonds as well as more complicated instruments, such as options on bonds, interest rate swaps, option on interest rate swaps, caps, floors, and Mortgage Backed Securities are priced and analyzed.

QFGB 8935. Risk Management. (2 Credits)
Builds strong understanding of the risks of individual products and methods of hedging and/or replication those products. Also examines firm-wide risk issues from a financial perspective which requires aggregation of multiple positions and consideration of interrelationships among asset price fluctuations. Regulatory and other non-market risk issues are considered and simulation techniques for modeling risk are practiced.

QFGB 8942. Advanced Finance Theory. (2 Credits)
This course builds upon Financial Theory I (QF 8922) and examines cross-sectional and time series properties of asset returns. Offers an in-depth statistical review of several theoretical models of inter-temporal asset pricing. Microstructure effects on short-term asset returns as well as term of returns predictability are covered.

QFGB 8943. Large-Scale Data Modeling. (2 Credits)
Explores financial modeling topics using large data sets and various econometric techniques applied in a variety of financial problems. Topics include modeling the yield curve in the US and other countries, application of pattern recognition techniques in developing stock-rating systems, factor models in portfolio construction, and portfolio performance evaluation. Emphasis on project analysis using SAS to process large data sets and develop appropriate models for solving real problems in equity and fixed-income research.

QFGB 8944. Credit Risk Mgmt. (2 to 3 Credits)
Introduces modern credit risk models with particular focus on credit derivative instruments. Focuses on derivative market methods, rather than accounting analyses of business risks. Exposes students to institutional practices and commonly used data. Students will be expected to thoroughly understand professional software output, along with the risks and rewards of credit product strategies.

QFGB 8945. Computational Finance. (3 Credits)
This course uses C++ to solve financial problems. Two types of students will take this course. One type is the student with a strong computer programming background (perhaps an engineering undergraduate), but who has not taken C++ or applied it to finance problems. The other type may have been a finance undergraduate student who has little computer programming experience before entering the MSQF program. The latter student must take the spring introduction to C++ course offered by the computer science department as a prerequisite to taking this course in their second fall term.

QFGB 8947. Advanced Derivative Pricing. (2 Credits)
This course covers advanced option pricing.

QFGB 8948. Quantitative Methods for Portfolio Management. (2 Credits)
Introduces the scope of the quantitative concepts used in asset management, with focus on practical application, challenges and limitations in constructing optimal portfolios, evaluating performance and portfolio risk. Involves extensive discussions of case studies and group project.* Subject to NY Approval.

QFGB 8949. Advanced Financial Econometric. (2 Credits)
This course takes up Bayesian estimation of small-scale financial sector and macro-econometric models. Counter-factual simulations will also be used, as well as monte-carlo methods for evaluating confidence intervals. In addition to Bayesian estimation, the course will make use of extensive data sets to investigate topics such as contagion effects across countries in financial markets, and neural networks for predictive accuracy. * Subject to NY Approval.

QFGB 8950. Alternative Investments. (2 Credits)
The course is an introduction to the rapidly evolving universe of alternative investments. Delivered in modules, the course covers a broad array of alternative strategy classes (Quantitative/Systematic, Fundamental Long/Short, Global Macro, Private Equity) ranging across all major asset classes (Equities, Fixed Income, Currencies, Commodities, Derivatives).* Subject to NY Approval.

QFGB 8951. Internship and Project Report. (2 to 4 Credits)
A professional project report and presentation are the final outputs of this course. Students complete these projects under the supervision of a faculty member. Both individual and group-projects are possible.

QFGB 8952. Business Comm for Quants A. (1 Credit)
Covers the basics of professional speaking and writing. Develops oral and written presentation skills essential for successful careers. Coordinated with summer term internship to give students the opportunity to apply their new communication skills in a business setting.

QFGB 8953. Research Seminar 1. (1.5 Credits)
This fall course features a series of lecturers from the finance industry. They discuss research projects that their companies are working on.

QFGB 8954. Research Seminar 2. (1.5 to 3 Credits)
This spring course features a series of lecturers from the finance industry. They discuss research projects that their companies are working on.

QFGB 8955. Computational Finance. (2 Credits)
QFGB 8957. Applied Capital Markets and Financial Regulations. (3 Credits)
This course will explore how the market structure has fundamentally changed after the 2008 liquidity and credit crisis, and how this crisis has impacted on liquidity, balance sheets, risk taking, and returns across the entire financial services industry. The new reality is that regulation has changed the landscape of Wall Street and the dynamic of how the sell-side and buy-side will interact in the foreseeable future.
QFGB 8958. Lectures in Applied Port Mgt. (3 Credits)
This advanced Portfolio Management course quickly reviews Modern Portfolio Theory (MPT) conceptual underpinnings and builds on MPT 1.0. It delves into contemporary liability driven asset allocation, MPT 2.0 and portfolio management industry practices, issues and concerns. Lectures, problem solving, and self-study along with extensive hands-on tools using Microsoft Excel based models will be used to provide a practitioner’s perspective. We will review and demo contemporary asset allocation optimization and forecasting techniques, new asset class pricing and valuation, performance and risk attribution, tail risk measurement and management tools etc. using real time vendor based (third party) solutions. As prerequisites - the student should have class exposure to investment and portfolio analysis, Excel, stats, and basic regressions.

QFGB 8959. Machine Learning for Finance. (2 Credits)
This course explores the world of Machine Learning and financial applications. We will investigate how it uses large amounts of structured or unstructured data to discover patterns and hidden topics, transforming raw data into knowledge for decision making. We will investigate real and practical examples from finance, tracing parallels between data science, statistics, and data analytics.

QFGB 8960. Advanced C++ for Finance. (2 Credits)
Advanced C++ for finance.

QFGB 8961. Business Comm for Quants B. (1 Credit)
Covers the basics of professional speaking and writing. Develops oral and written presentation skills essential for successful careers.

QFGB 8962. Dynamics of Banking& Fin Mkts. (3 Credits)
This course is designed to provide students a well-rounded and hands-on perspective on the practical functioning and decisions in financial markets and banking.

QFGB 8963. Stress Tests and Cap Adequacy. (3 Credits)
The financial crisis of 2007-08 taught us all a lesson: that preparedness is everything. How resilient and prepared will we be, and how fast will we be able to recover? This is the key focus of this course: how to plan for moments of distress so that firms such as yours have capital of a sufficient quality to survive potential storms. We will demonstrate how to create a robust capital plan and test it for moments of hypothetical stress. We will investigate exactly how a bank holding company and an insurance company should conduct their capital plan, highlighting the significant differences between the two industries. By the end of the course, you will be able to create a capital plan for your business on your own.

QFGB 8964. Arpm Bootcamp-Intensive Quant. (3 Credits)
Consolidates portfolio and risk manager’s expertise into a structured and rigorous quantitative framework. Empowers avid learners with background in hard sciences to gain the deep technical knowledge necessary to operate across the complex world of quantitative trading, asset management, and risk management. Topics include data science and machine learning; classical / Bayesian multivariate statistics, and econometrics; financial analytics; market, credit & liquidity risk management; estimation error and model risk; and much more. ARPM Lab online (theory, case studies, Python & MATLAB code, slides, exercises). Obtain ARPM Certificate of Attendance & 40 GARP CPD.

QFGB 8965. Trading - Market Making and Algorithms. (3 Credits)
This course will introduce students to basic market microstructure, algorithmic trading, and quantitative investment strategies. Mathematical and statistical techniques along with their computational implementation in R or Python will be used throughout the course.
Prerequisites: QFGB 8911 and QFGB 8923 and QFGB 8926.

QFGB 8966. Behavioral Finance. (2 Credits)
Over the past several decades, the field of finance has developed a successful paradigm based on the notions that investors and managers are generally rational and that the prices of securities are generally efficient. In recent years, however, anecdotal evidence as well as theoretical and empirical research has shown this paradigm to be insufficient to describe various features of actual financial markets. In this course we will use psychology and more realistic settings to guide and develop alternative theories of financial markets. We will examine how the insights of behavioral finance complement the traditional paradigm and shed light on investors’ trading patterns, the behavior of asset prices, corporate finance, and various financial market practices through lectures, case studies, and our own discussions.

QFGB 8967. Bank Capital Adequacy. (2 Credits)
An overview of the range of risks that banking institutions undertake to perform their role as credit intermediaries. This course will delve into the choices that bank managers have to measure the risks they undertake and the approaches that a bank can take to translate risk measurement into stress tests of a bank's capital position. Students will have an opportunity to apply methodologies discussed to developing a model to stress test a bank's exposure to market, credit, or operational risk for the purpose of testing the adequacy of a bank's capital position.

QFGB 8968. Blockchain Technology and Application Development. (3 Credits)
The main objective of this course is to familiarize you with the ecosystem, technologies, and development skills surrounding Blockchain. The course starts with foundational concepts such as distributed state machine, hash tree, P2P network, GPU processing, cryptocurrency, and cryptography. Using both simulated sandbox and locally installed environments, the course then guides you through the development, front-end integration, and deployment of Blockchain-based smart contracts. Other topics covered include rapid prototyping, design patterns, and agile process to maximize the success likelihood for Blockchain projects. The lab portion of this course involves weekly submissions of programming exercises, assignments, and project deliverables. Prior knowledge required: Proficiency in computer programming; basic knowledge in analysis and linear algebra.

QFGB 8969. Systematic Investment Strategies. (0 Credits)
This lecture series will cover a variety of topics on quantitative investment management. We start with an overview of the evolution of the current state of affairs, both with respect to individual strategies as well as topics related to their management within the context of a portfolio. We will first cover the basic set of thematic strategies (e.g., value/reversion, momentum/trend, carry, volatility, etc.) across different asset classes with some representative specific strategies covered in detail. We will then consider extensions and refinements. We will also cover various portfolio construction approaches for baskets of systematic strategies and their consequences. The lecture series will feature readings from “Wall Street” practitioner research series at the major asset managers and investment banks, with guest lecturers from industry on specific topics. Students will be expected to participate via data collection, strategy construction, and back-testing analysis, etc.

QFGB 8999. Independent Study. (1.5 to 3 Credits)
Independent study.