

MASTER OF SCIENCE IN FINANCE

Courses

Finance

FNCE 5400 Principles of Finance 3 Credits

Prerequisites: ACCT 5400, DATA 5400.

This course examines the fundamental principles of modern finance that are helpful in understanding corporate finance, investments, and financial markets. More specifically, the course examines the time value of money; the functioning of capital markets; valuation of stocks, bonds, and corporate investments; risk measurement; and risk management. Students learn to use sources of financial data and spreadsheets to solve financial problems.

FNCE 6500 Stakeholder Value 3 Credits

Prerequisite: FNCE 5400.

This course examines business decision-making with the aim of creating and managing value for stakeholders. Accordingly, students learn how to lead and manage a business in a competitive environment. This involves the formulation of corporate objectives and strategies, operational planning, and integration of various business functions leading to greater stakeholder value. Topics include investment and strategic financial decision-making. A business simulation facilitates the learning process.

FNCE 6530 Corporate Finance 3 Credits

Prerequisite: FNCE 5400.

This course provides an exploration of theoretical and empirical literature on corporate financial policies and strategies. More specifically, the course deals with corporate investment decisions, capital budgeting under uncertainty, capital structure and the cost of capital, dividends and stock repurchases, mergers and acquisitions, equity carve-outs, spin-offs, and risk management.

FNCE 6540 Investment Analysis 3 Credits

Prerequisite: FNCE 5400.

This course examines the determinants of valuation for bonds, stocks, options, and futures, stressing the function of efficient capital markets in developing the risk-return trade-offs essential to the valuation process.

FNCE 6545 Portfolio Management 3 Credits

Prerequisite: FNCE 6540.

Students examine how individuals and firms allocate and finance their resources between risky and risk-free assets to maximize utility. Students use an overall model that provides the sense that the portfolio process is dynamic as well as adaptive. Topics include portfolio planning, investment analysis, and portfolio selection, evaluation, and revision.

FNCE 6555 International Financial Management 3 Credits

Prerequisite: FNCE 6530.

The globalization of international financial markets presents international investors and multinational corporations with new challenges regarding opportunities and risks. This course examines the international financial environment of investments and corporate finance, evaluating the alternatives available to market participants in terms of risk and benefits. Topics include exchange rate determination, exchange rate exposure, basic financial equilibrium relationships, risk management including the use of currency options and futures, international capital budgeting and cost of capital, and short-term and international trade financing.

FNCE 6560 Global Financial Markets and Institutions 3 Credits

This course examines financial markets in the context of their function in the economic system. The material deals with the complexity of the financial markets and the variety of financial institutions that have developed, stressing the dynamic nature of the financial world, which is continually evolving.

FNCE 6565 Derivative Securities 3 Credits

Prerequisite: FNCE 6540 (concurrency allowed).

This course offers in-depth coverage of financial derivative securities, such as options futures and swaps. The course focuses on the principles that govern the pricing of these securities as well as their uses in hedging, speculation, and arbitrage activities.

FNCE 6570 Fixed Income Securities 3 Credits

Prerequisite: FNCE 6540.

This course deals extensively with the analysis and management of fixed income securities, which constitute almost two-thirds of the market value of all outstanding securities. The course provides an analysis of treasury and agency securities, corporate bonds, international bonds, mortgage-backed securities, and related derivatives. More specifically, this course provides an in-depth analysis of fixed income investment characteristics, modern valuation, and portfolio strategies.

FNCE 6575 Capital Budgeting 3 Credits

Prerequisite: FNCE 6530.

This course examines the decision methods employed in long-term asset investment and capital budgeting policy. The course includes a study of quantitative methods used in the capital budgeting process: simulation, mixed integer programming, and goal programming. Students use these techniques and supporting computer software to address questions raised in case studies.

FNCE 6580 Financial Risk Management 3 Credits

Prerequisite: FNCE 6540.

This course focuses on the evaluation and management of corporate and portfolio risk. More specifically, this course examines the methods of evaluating and managing risk with the objective of contributing to value maximization. Risk assessment methodologies such as value-at-risk (VaR) and cash-flow-at-risk (CaR) are analyzed and used extensively.

FNCE 6595 Research Methods in Finance 3 Credits

Prerequisite: FNCE 6540.

This course, open to MS in Finance students only, deals extensively with applied research methods in finance, a highly empirical discipline with practical relevance in the models and theories used. The central role of risk distinguishes research methodology in finance from the methodology used in other social sciences, necessitating the creation of new methods of investigation that are adopted by the finance industry at an astonishingly fast rate. For example, methods of assessing stationarity and long-run equilibrium, as well as methods measuring uncertainty, found a home in the finance area. This course covers traditional and new research methods that are directly, and in most instances, solely applicable to finance problems.

FNCE 6900 Contemporary Topics Seminar 3 Credits

Prerequisites: FNCE 6530, FNCE 6540.

This course presents recent practitioner and academic literature in various areas of finance, including guest speakers where appropriate. Topics vary each semester to fit the interests of the seminar participants.

FNCE 6990 Independent Research Seminar 3 Credits**Prerequisite:** FNCE 6595.

This course, open to MS in Finance students only, provides participants with the opportunity to explore a financial topic of interest in depth, immersing students in detailed investigations requiring substantial research and analysis.

FNCE 6991 Blockchain and Digital Assets 3 Credits

The sudden rise in the value of Bitcoin and other digital assets focused the world's attention on cryptocurrencies as a means of payment. Blockchain technology powers Bitcoin and has been hyped as the next new, transformative technology. This class will first discuss the technical underpinnings of blockchain and review key concepts such as decentralization and consensus algorithms. The class will then discuss practical applications of blockchain technology. It will then then examine blockchain as an asset and review the dynamics of the cryptocurrency markets. It will conclude with the discussion of the future of blockchain.

FNCE 6992 Decentralized Finance 3 Credits**Prerequisite:** FNCE 6991.

Decentralized finance (DeFi) allows parties to trade in a peer-to-peer, decentralized manner by replacing financial institutions and other intermediaries with blockchain-based smart contracts and by replacing traditional, physical currencies (e.g. U.S. dollars) with cryptocurrency (e.g. stable-coins pegged to a physical currency). This course will examine how FinTech companies are disrupting the traditional financial services industry and assess the pros and cons of these new technologies. Students in this course will also survey relevant aspects of banking and securities law, with a focus on current regulatory issues pertaining to DeFi and considerations of the future regulatory landscape.

FNCE 6993 Algorithmic Trading 3 Credits

This class introduces the necessary background knowledge and processes to design and implement algorithmic trading models including an introduction to financial markets, mechanics, participants, order types and execution, microstructure, and more. The course walks students through the process of generating trading strategies, quantifying the trading process, risk-based modeling concepts, back-testing and optimization techniques, technology and infrastructure, regulatory compliance, and key metrics of algorithmic trading model performance evaluation.

FNCE 6994 Ethical Considerations in and Regulation of FinTech 3 Credits**Prerequisite:** FNCE 6992 (concurrency allowed).

While FinTech provides the world of finance with exciting new opportunities and innovations, they come with a new set of ethical considerations and potential new regulations. Ethical issues include potential breach of privacy of the data obtained through social media and other means. Artificial intelligence and machine learning and the use of large datasets of proprietary data could unintentionally lead to discrimination and adverse effects on diversity and inclusion efforts. Since much of the FinTech applications are linked to the internet, avoiding cyberattacks poses a large risk to successful implementation of any models. Successful leaders in the field of FinTech must understand ethical considerations associated with FinTech. It is also crucial for the manager to understand current regulation of FinTech and anticipate possible new regulation. This course will consider these and other ethical and legal considerations associated with FinTech.