REGULATIONS FOR THE DEGREE OF
MASTER OF FINANCE IN FINANCIAL TECHNOLOGY
[MFFinTech]

These Regulations apply to candidates admitted to the Master of Finance in Financial Technology curriculum in the academic year 2021-22 and thereafter.

(See also General Regulations and Regulations for Taught Postgraduate Curricula)

Admission requirements

MFFinTech 1. To be eligible for admission to the courses leading to the degree of Master of Finance in Financial Technology, candidates shall

(a) comply with the General Regulations;
(b) comply with the Regulations for Taught Postgraduate Curricula;
(c) hold
  (i) a Bachelor's degree with honours of this University; *or*
  (ii) another qualification of equivalent standard from this University or from another University or comparable institution accepted for this purpose;
(d) satisfy the examiners in a qualifying examination, if required; and
(e) preferably have background knowledge in computer science, engineering, mathematics, physics, statistics, or science and technology.

Qualifying examination

MFFinTech 2.

(a) A qualifying examination may be set to test the candidates' formal academic ability or their ability to follow the courses of study prescribed. It shall consist of one or more written papers or their equivalent, and may include a project report.
(b) Candidates who are required to satisfy the examiners in a qualifying examination shall not be permitted to register until they have satisfied the examiners in the examination.

Advanced standing

MFFinTech 3. Advanced standing of up to two required courses, except the capstone course, may be granted if

(a) the course is completed at a graduate, postgraduate or master level from a recognised curriculum elsewhere within the last four years before admission to the Master of Finance in Financial Technology curriculum and achieved a good grade in the course; or
(b) the candidate possesses a relevant professional qualification which was obtained before admission to the curriculum.

Course exemption

MFFinTech 4. Course exemption of up to two required courses, except the capstone course, may be granted (normally by examination) if candidates

(a) can produce evidence, such as transcript and course syllabus, that a course is equivalent in content to another course taken elsewhere for which a satisfactory grade has been obtained; or
(b) are holding relevant professional qualifications which were obtained before admission to the curriculum.

No credits will be given for the exempted course and candidates shall be required to take an approved alternative course of the same credit value.

Award of degree

MFFinTech 5. To be eligible for the award of the degree of Master of Finance in Financial Technology, candidates shall

(a) comply with the General Regulations;
(b) comply with the Regulations for Taught Postgraduate Curricula; and
(c) complete the curriculum and satisfy the examiners in accordance with the regulations set out below.

Period of study

MFFinTech 6. The curriculum shall normally extend over one academic year of full-time study. Candidates shall not be permitted to extend their studies beyond the maximum period of registration of two academic years of full-time study, unless otherwise permitted or required by the Board of the Faculty.

Completion of curriculum

MFFinTech 7. To complete the curriculum, candidates shall

(a) satisfy the requirements prescribed in TPG 6 of the Regulations for Taught Postgraduate Curricula;
(b) follow the courses of instruction and complete satisfactorily all prescribed written work and field work;
(c) satisfy the examiners in all prescribed courses as specified in the syllabuses and in any prescribed form of examination; and
(d) have achieved a cumulative GPA of 2.0 or above.

Assessment

MFFinTech 8. Candidates shall satisfy the examiners in all the prescribed courses as specified in the syllabuses. Examinations shall normally be held at the end of each course, unless otherwise specified. Only passed courses will earn credits.

MFFinTech 9. Candidates who have failed a course shall be required to sit for re-assessment/re-examination or to retake the course. If the failure is an elective course, candidates may elect to take another course as a substitute.

MFFinTech 10. Candidates who are unable, because of illness, to be present at the written examination of any course may apply for permission to present themselves at a supplementary examination of the same course to be held at some other time. Failure to sit for supplementary examination as arranged shall automatically result in course failure.

MFFinTech 11. Candidates shall not be permitted to repeat a course for which they have received a passing grade for the purpose of upgrading.

MFFinTech 12. Candidates who have failed in the assessment/examination or re-assessment/re-examination of more than two courses during the entire period of study of the curriculum or have exceeded the maximum period of registration as specified in Regulation MFFinTech 6 shall be recommended for discontinuation under the provisions of General Regulations G12.

MFFinTech 13. There shall be no appeal against the results of examinations and all other forms of assessment.

Grading system

MFFinTech 14. Courses shall be graded according to the following grading system:

Grade	*Standard*	*Grade Point*
A+	Excellent	4.3
A		4.0
A-		3.7
B+	Good	3.3
B		3.0
B-		2.7
C+	Satisfactory	2.3
C		2.0
C-		1.7
D+	Pass	1.3
D		1.0
F	Fail	0

Assessment results

MFFinTech 15. On successful completion of the curriculum, candidates who have shown exceptional merit at the completion of the curriculum may be awarded a mark of distinction, and this mark shall be recorded in the candidates' degree diploma.

SYLLABUSES FOR THE DEGREE OF
MASTER OF FINANCE IN FINANCIAL TECHNOLOGY
[MFFinTech]

These syllabuses apply to candidates admitted to the Master of Finance in Financial Technology in the academic year 2021-22 and thereafter.

CURRICULUM STRUCTURE

Unless advanced standing is granted, candidates normally need to take a total of twelve courses, comprising ten core courses (inclusive of one capstone course) and two elective courses. A list of electives will be announced at the beginning of each course. Candidates may take one of the two elective courses, DASC7606 Deep learning (6 credits) and FITE7410 Financial fraud analytics (6 credits), offered by the Faculty of Engineering, and/or one of the three electives, LLAW6046 Privacy and data protection (9 credits), LLAW6126 E-Finance: law, compliance and technology challenges (9 credits) and LLAW6256 Law of anti-money laundering and counter-terrorist financing and compliance issues (9 credits), offered by the Faculty of Law. Candidates can also choose up to two elective courses from the taught postgraduate curricula offered by the Faculty of Business and Economics under the advice and approval of the Programme Directors concerned.

Not all the courses listed in the syllabuses will necessarily be offered each academic year.

I. Fundamental Core Courses (Four Courses):

MFIN7002 Investment analysis and portfolio management (6 credits)
This course aims to provide candidates with understanding of (i) fundamental knowledge for asset valuation, (ii) portfolio management techniques for risk management and speculation. (iii) investment strategies adopted in financial market, and (iv) the recent development of portfolio management tools and investment strategies. On the theoretical side, this course introduces fundamental knowledge for asset pricing, investment strategies, and portfolio management. On the practical side, this course covers recent topics that are related to the investment strategies and portfolio management in both Hong Kong and United States. Some projects about portfolio management and asset valuation are specially designed to let candidates apply the theoretical knowledge into practice. This course is highly recommended for candidates who intend to pursue a career or further studies in investment strategies and portfolio management. Of course, the knowledge will also be very useful when candidates make their own personal investment decision.

MFIN7005 Corporate finance and asset valuation (6 credits)
This course aims to provide candidates with understanding of (i) fundamental approaches for equity valuation, (ii) fundamental approaches for valuation of fixed income securities, (iii) the knowledge about corporate finance and behavioral approaches in asset valuation, and (iv) the recent development of valuation techniques. On the theoretical side, this course introduces fundamental knowledge for asset valuation, investment strategies, and portfolio management. On the practical side, this course covers recent topics that are related to the asset valuation techniques used in both Hong Kong and United States. Some projects about asset valuation are specially designed to let candidates apply the theoretical knowledge into practice. This course is highly recommended for candidates who intend to pursue a career or further studies in equity valuation and securities analysis. Certainly, the knowledge from this course will also be very useful when you make your own personal investment decision.

FITE7409 Blockchain and cryptocurrency (6 credits)
This course is for students who are not computer science majors. In this course, students will learn the rationales behind the design of blockchain and cryptocurrency, the key technical/cryptographic elements that build up the blockchain technology, classifications of different types of blockchains, the comparisons of different blockchain platforms, what applications fit the best for the blockchain technology, and example applications in a wide range of disciplines. This course will also introduce some popular cryptocurrencies, e.g. Bitcoin, discuss in details about bitcoin transactions, briefly introduce what a cryptocurrency exchange is, and the evil sides of cryptocurrencies (e.g. being the ransoms of ransomeware and money laundry).
Note: Students with computer science majors may apply for an exemption from this course.

LLAW6093 Regulation of financial markets (9 credits)
The course will examine, from legal and policy perspectives, the fundamentals respecting regulation of the primary financial intermediaries and markets: i.e., money and banking, investment banking, and asset management and insurance. Emphasis will be on the on-going phenomenon of globalisation and interdependence/interconnection of financial markets and intermediaries, and the need for economies to develop viable and robust financial markets, with a particular focus on the current global financial crisis. Use of international, comparative (especially PRC, US and EU) and interdisciplinary materials will be made.

II. Advanced Core Courses (Five Courses):

MFIN6003 Derivative securities (6 credits)
Derivatives have become a popular hedging and investment tool over the last few decades and derivatives concept are required for every advanced finance topic. This course provides candidates with a framework (1) to understand the fundamental concepts of derivative products (forward and futures, options, swaps, and basic structured products), (2) to develop the necessary skills used in valuing derivative contracts, and (3) to understand a wide variety of issues related to risk management and investment decisions using derivatives. The course intends to provide a solid foundation for other advanced courses of the program such as mathematical finance, risk management, fixed income securities, and financial engineering.

MFIN7003 Mathematical techniques in finance (6 credits)
There are three main approaches to mathematical finance: the tree approach, the martingale approach and the partial differential equation approach. This course will present these three approaches and their applications to pricing and hedging financial derivatives. The corresponding numerical methods of the three approaches are lattice method, Monte Carlo simulation method, and finite difference method. Along the lectures, necessary mathematics, such as calculus, partial differential equation, applied probability and stochastic calculus will also be reviewed. After taking this course, candidates should be able to fully understand no-arbitrage theory, risk-neutral probability, martingale, and Black-Scholes equation. The purpose of this course is to lay down a solid mathematical foundation for candidates to learn more advanced topics in financial engineering and risk management, such as exotic options, interest rate derivatives and credit risk models.
Prerequisite: MFIN6003 Derivative securities

MFIN7033 Advanced financial programming and databases (6 credits)
This course provides students a foundation in managing and analyzing financial datasets as well as other datasets. The first part of the course focuses on building skills – data manipulation using programming languages. The second part introduces various financial databases. Through practice on real-world financial datasets, students will learn methods used to warehouse and retrieve data for statistical computing. The course then turns to analytical methods with a focus on demonstrating these methods on real-data from various contexts in finance. Methods covered include statistical modeling and inference, machine learning, textual analysis, classification and alternative datasets. Problem sets and projects will be the primary mode of learning. Course learning will be supplemented with exposure to industry speakers from the local financial industry.
Prerequisite: MFIN7005 Corporate finance and asset valuation

MFIN7034 Machine learning and artificial intelligence in finance (6 credits)
Machine learning and artificial intelligence are the apex technologies of the information era. These methods are getting increasingly popular in the financial market. This course provides students the fundamental models and methods of machine learning and apply them to solve real-world financial problems. The topics include regression, classification, clustering methods, model selection, topic modeling and policy search. The first part of the course focuses on supervised learning techniques for regression and classification. The second part of the course covers unsupervised learning techniques for clustering and matrix factorization. The third part of the course covers reinforcement learning algorithm. The last part provides the fundamental concepts of artificial intelligence and its implications. The course provides introductions to the latest datasets in financial markets and practices applying learning algorithms to these datasets in a variety of topics. The primary mode of learning is based on assignments and projects.

MFIN7037 Quantitative trading (6 credits)
This course provides a foundation for advanced quantitative trading in financial markets. The course has two parts. First, the course reviews stylized facts and methods used for time-series predictability,

cross-sectional asset pricing and strategy performance evaluation. The second part of the course uses these tools to study recent advances in investment strategies sourcing from academic and practitioner literature. For example, the course will discuss new theories on risk premia, intermediation-based asset pricing, and quantifiable soft information and alternative data. The primary method of learning will be a combination of problem sets and projects. Subject to availability, learning will be supplemented with exposure to industry speakers from the local financial industry.
Prerequisite: MFIN7002 Investment analysis and portfolio management

III. Capstone Course

MFIN7035 Big data in finance (6 credits)
This course provides students a foundation in managing and analyzing large datasets for applications in finance. The first part of the course focuses on building skills – data custodianship and performance computing. Through practice on real-world financial datasets, students will learn methods used to warehouse and retrieve data for high-performance statistical computing. The course then turns to analytical methods with a focus on demonstrating these methods on real-data from various contexts in finance. Methods covered include statistical modeling and inference, machine learning, textual analysis, classification and alternative datasets. Problem sets and projects will be the primary mode of learning. Course learning will be supplemented with exposure to industry speakers from the local financial industry.

IV. Electives Courses (Choose Two) (6 credits each):

MFIN7031 Introduction to FinTech and its impact on the future of banking and finance
The world of global finance, banking and financial services is changing rapidly with the emergence of start-up financial technologies, commonly referred to as FinTech that may disrupt the status quo. Taught as a series of practical courses and guest lectures by industry entrepreneurs and professionals, the course covers the main pillars of the FinTech start-up ecosystem in Asia, including peer to peer lending platforms, internet finance, online finance, bitcoin, digital currencies, digital payments, big data, cybersecurity, cryptography, etc and their practical impact on global banking and finance. This course will provide students with the latest empowering and practical knowledge on FinTech enabling them to understand some of the FinTech changes taking place currently in the financial services industry and, most importantly, the trends that will impact the industry in the future. This is a very practical course with a heavy emphasis on guest lectures on the latest industry trends and best practices by industry experts and entrepreneurs rather than theoretical concepts.

MFIN7036 Text analytics and natural language processing in finance and FinTech
This course covers the main elements of natural language processing (NLP), text analytics, and text mining, providing students with a foundation in collecting, managing, and analyzing textual data with financial applications in mind such as FinTech. Examples of potential applications include understanding and responding to sentiment in financial newspapers and social media, using social media to improve performance in asset/investment management, due diligence, Fed watching, monitoring of company events, and detecting insider trading. Although students write their own computer programmes in this course, they are not required to implement most algorithms from scratch. Instead, the focus of this course is on how to use existing state-of-the-art open-source software libraries and how to apply them in a financial context. This course consists of three parts. In the first part, we work with real-world textual data sets to obtain proficiency in collecting, importing, organizing, and cleaning textual data from sources related to finance and FinTech. Among others, we cover web scraping, textual corpora, text processing, tokenization, stemming, and stop word removal. In the second part we delve into a more detailed analysis of NLP, text analytics, and machine learning with a particular focus on finance and FinTech. For instance, we examine bag-of-words, word weighting schemes, document classification, document clustering, sentiment analysis, and topic models. The third part consists of summarizing, displaying, and visualizing results obtained from NLP and text analytics for applications in finance and FinTech.

MFIN7004 Financial services regulations
This course provides candidates with the legal background necessary to comply with the regulatory requirements in banking and finance. It covers the legal aspects of corporate governance, the legal framework of banking and finance, and financial products, including derivatives. This course also provides candidates with background on market access in financial services, as China embarks on liberalisation of its financial markets as a member of the WTO.

MFIN7013 Seminar in commercial banking and real estate financing
This course covers bank management techniques that include asset and liability management, liquidity and reserve management, credit analysis, loan pricing and off-balance-sheet banking, as well as regulatory issues of commercial banks. It also discusses issues related to mortgage loan products and how real estate risks may affect the market value of mortgages.

MFIN7014 Fund management and alternative investments
Hedge funds are one of the fastest growing sectors of asset management. This course studies the styles of hedge funds and management strategies from an investment decision-making perspective. Topics covered in this module include environment and micro-structure of capital market, investment strategies, quantitative tools, derivative products, investment performance evaluation and discussions of some hedge funds failures. Special attention is given to various practical investment strategies and their risks, including equity selection techniques, market-neutral portfolio constructions, arbitrage strategies, emerging market investment, shortselling problems, etc.

MFIN7015 Behavioral finance
Behavioral finance uses insights from psychology to understand how biases, heuristics, framing and emotions influences the decisions of individual and professional investors, markets and managers. It describes how and why these suboptimal decisions might deviate from those predicted by traditional financial or economic theory. The course also shows why arbitrageurs such as hedge funds cannot correct but instead choose to ride on the misbehavior and mispricing. The course will explore the implications of investor psychology and limitation to arbitrage in the individual trading behaviors, aggregate stock market and the cross-section of average returns, and corporate finance. How insights of behavioral finance complement the traditional finance paradigm will be examined, so that candidates will gain an understanding of how individuals and institutions actually make financial decisions (descriptive) and guidance on how to improve financial decision making (prescriptive) in themselves and others.

MFIN7016 Real options and dynamic corporate finance
A real option is a right—not an obligation—to take an action on an underlying real asset. The action may involve, for example, abandoning, expanding, or contracting a project or even deferring the decision until a later time. Real options analysis (ROA) is a tool that helps to quantify the value of a real option. This course provides a synthesis of modern asset pricing and corporate finance via the framework of ROA. The course compares and contrasts ROA with the traditional tools of valuation. The benefits and limitations of ROA in terms of practical applications are also discussed.

MFIN7025 Entrepreneurship in finance: hedge funds, private equity and venture capital
This course provides students with the foundations and practical knowledge enabling them to launch and manage their own entrepreneurial venture including a hedge fund, private equity, venture capital or asset management firm. Taught as a combination of practical classes and guest lectures by industry professionals, the course covers the entire fund and business launch spectrum including fund structuring, investor capital raising, investor due diligence, regulatory, tax, governance, fund terms, private placement regulations, market trading rules, service provider selection, counterparty selection, employment matters, real estate, technology, operations, etc. The course also covers the investor landscape and investor lifecycle from early stage investors to institutional capital raising from global family offices, fund of funds, endowments, private banks and pension funds. We also cover the ongoing management and deal making of such funds from angel and venture capital early investments to private equity deals and exits. The course also discusses the global trends and industry institutional best practices, the customs and usage in the industry as well as some of the future trends, including FinTech and cybersecurity, and their impact on the industry. This is a very practical course with a heavy emphasis on the latest industry trends and best practices rather than theoretical concepts.

MFIN7029 Asian financial markets
This course gives candidates an overview of Asian financial markets, their latest development and future trends so that candidates can better prepare themselves for building their career in finance in the region. It consists of company visits, executive talks/seminars, training, networking and/or cultural activities.

MFIN7030 Current topics in finance
This is a special course that deals with various current topics in finance. Topics covered may vary from year to year, depending on the research interests of the instructor.

MFIN7032 Equity valuation and investment management

This course aims to provide students with a practical approach to equity valuation and investing. They will learn how to apply the key concepts, techniques and tools used by market practitioners in making real world investment decisions. Topics include: identifying sources of value, core valuation techniques - discounted cash flow, multiples analysis of comparable companies, real options valuation, and other valuation methods commonly used by practitioners; an overview of the asset management industry; the fundamental assumptions and approaches to value investing; risk management in the investment process.

MFIN7047 Entrepreneurial finance and innovation strategy
This course aims to cover basic information and knowledge about project choice and financing, idea implementation, decision-making, and innovations in start-up businesses. The majority of such information and knowledge is delivered based on the case method (with supplementary lecture notes when appropriate). It is noteworthy that we will take two roles interchangeably throughout this course: the entrepreneurs who seek funding and the venture capitalists who seek good projects. Understanding the role of both important players in the entrepreneurial finance process helps us have an objective evaluation and unbiased assessment of potential ideas and projects.

MFIN7051 Current topics in financial technology
This is a special course that deals with various current topics in financial technology. Topics covered may vary from year to year, depending on the research interests of the instructor.

ASSESSMENT
Candidates shall be assessed for each of the courses for which they have registered, and assessment is normally conducted in the form of coursework assessment (40-100%) and examinations (0-60%), unless otherwise specified by the course instructor.