

Descriptions of Courses

FE501 Stochastic Calculus for Finance **1.5:0:1.5**

This course introduces martingales or Markov properties of stochastic processes. The most popular example of stochastic process is Brownian motion process is defined and Ito integration and Ito's lemma will be introduced.

FE502 Statistical Analysis for Finance **1.5:0:1.5**

This course is designed to provide the framework for statistical analysis to study finance. Topics such as statistical inference, hypothesis testing, and regression analysis will be discussed

FE503 Fundamentals of Investment and Asset Pricing **1.5:0:1.5**

This course covers the foundations of modern finance and asset pricing; introduction to financial economic approaches; portfolio theory and various pricing models; arbitrage and fundamental theorems of asset pricing; market efficiency issues; structural issues

FE504 Analysis of Fixed Income Securities **1.5:0:1.5**

This course is an introductory course on the subject of fixed income securities and associated markets. The characteristics of term structure and nature of interest rate changes are discussed. Also covered are yield curves, basic term structure theories, interest rate risk of fixed income, duration, convexity, and credit risk.

FE505 Derivatives **1.5:0:1.5**

Student will learn about the basic derivatives such as forward, futures and options contracts in this course. The topics discussed in this course will include the concepts, pricing, and hedging of the forward, futures and options contracts.

FE506 Financial Accounting **1.5:0:1.5**

This course examines basic concepts of financial accounting. This course provides a basic framework to understand the financial statement from the perspective of users. It also provides overview of the basic financial statements - income statement, balance sheets, and cash flow statement.

FE507 Financial Statement Analysis **1.5:0:1.5**

This course introduces students to the fundamentals of financial statement analysis (FSA) and valuation. After completing the course, a student is expected to interpret and analyze financial statements, and use financial statements for equity valuation.

FE509 Modelling in Financial Engineering **1.5:0:1.5**

This course is designed to provide the framework to model in financial engineering. Students will learn about the mathematics and modeling methods in financial engineering, and apply those to the area of option pricing theory, bond pricing theory, and risk management.

FE511 Applications in Stochastic Calculus for Finance **1.5:0:1.5**

This course provides theoretical basis for risk-neutral valuation, connection to partial differential equation, and change of numeraire to price various exotic derivatives as well as plain vanilla options.

FE512 Econometric Analysis for Finance **1.5:0:1.5**

The objective of this course is to familiarize students with econometric methods and techniques that are widely used in modern empirical research. The course include general linear regression model with nonspherical disturbances, large sample theory and maximum likelihood estimation.

FE513 Portfolio Optimization and Management **1.5:0:1.5**

Methodologies and related issues of portfolio management is covered in this course. Classic optimal portfolio models and their variants will be discussed. Practical issues and techniques as well as management issues pertinent to different asset classes will also be discussed.

FE514 Term Structure of Interest Rates **1.5:0:1.5**

This course aims at building in-depth understanding of the term structure models and fixed-income products. Short-rate models, no-arbitrage models, forward-rate models, market models and other popular models are discussed. Theoretical understanding and practical applications are both emphasized.

FE515 Advanced Derivatives **1.5:0:1.5**

This course is designed to provide a deeper understanding of various issues associated with derivatives. It will explore the theoretical and practical implications of various models, trading strategies, and the institutional aspects of these derivatives and the activities of the major participants in them.

FE517 Analysis of Economic Indicators and Forecasting **1.5:0:1.5**

In this course, we learn how easily accessible economic indicators can help you better anticipate turning points in the economy. By studying the best forward-looking economic indicators, decision makers can foresee well in advance shifts in consumer and business spending, interest rates, operating costs, employment trends and foreign economic activity

FE518 Principles of Insurance and Risk **1.5:0:1.5**

This course focuses on issues regarding insurance and principles of risk sharing and transfer; law of large numbers; mutuality principle; risk averseness; insurability; supply and demand in risk management function; role of information in risk sharing and transfer.

FE519 Estimation of Financial Engineering Models **1.5:0:1.5**

This course deals with empirical estimation methods that are frequently used in financial engineering models, and applies the methods to problems in practice. GMM, MLE, EMM, MCMC and nonparametric estimation methods will be covered in the course.

FE521 Simulation Methods for Finance **1.5:0:1.5**

Simulation is one of the most widely used methods in finance. This course is designed to teach various simulation methods in a finance framework, and apply the methods to various financial applications.

FE522 Advanced Econometric Analysis for Finance **1.5:0:1.5**

This course is the second course in a two course sequence representing the core of econometric theory. The objective of this course is to familiarize students with advanced topics such as IV estimation, GMM, panel data models, VAR, and qualitative models.

FE523 Real Estate Investments **1.5:0:1.5**

In this course, we seek understand issues in real estate investments. To achieve this goal, we overview the fundamental finance theories of risk-return relationships. Finally, we look at how regulation can affect the market structure and pricing strategy.

FE524 Interest Rate Derivatives **1.5:0:1.5**

This course is designed to provide a understanding of various models associated with the term structure of interest rates and interest rate derivatives. It will explore the theoretical and practical implications of the various term structure of interest rate models, and pricing and hedging of interest rate derivatives.

FE525 Management of Derivative Position **1.5:0:1.5**

This course is designed to study various over-the-counter (OTC) derivatives. Students will learn about the structure, usage, pricing, hedging and portfolio management of OTC derivatives such as knock-in knock-out barrier options, Asian options, and Equity Linked Securities(ELS).

FE527 Security Analysis and Trading Strategies **1.5:0:1.5**

This course is designed to provide the methods of security analyses and asset management. The topics in this course will include the efficient market hypothesis, technical analyses, and fundamental analyses. Students will have opportunity to do simulated investment games.

FE528 Financial Market Risk Management **1.5:0:1.5**

This course handles the issues associated with market risk management. Hedging methods with various financial products and derivatives are covered. Market risk measurement issues are also discussed under the perspective of enterprise-wide risk management.

FE531 Numerical Methods in Finance **1.5:0:1.5**

This course is designed to introduce numerical methods used to solve mathematical problems in finance. It covers various numerical methods to solve the valuation problem for derivative securities.

FE532 Financial Time Series Analysis **1.5:0:1.5**

This course is designed to provide the framework to analyze and interpret the financial time-series data using time-series models. Topics covered in this course will include the serial correlation analysis, ARIMA models, and Co-integration analysis.

FE533 Behavioral Finance **1.5:0:1.5**

This course introduces the behavioral approach to finance. This course will explore how market participants' behavior influences on the financing and investment behavior of firms and on financial markets.

FE534 Credit Risk Modeling and Credit Derivatives **1.5:0:1.5**

This course introduces the credit risk models and associated risk measurement and management issues. Credit derivatives are also introduced and their pricing methods and hedging techniques are discussed.

FE535 Derivatives Trading Strategies **1.5:0:1.5**

This course is designed to explore the derivative trading strategies based on the knowledge of derivatives. It examines the arbitrage trading strategies between derivatives and their underlying assets as well as between derivatives, hedging strategies related to the investment in the underlying assets or derivatives, and some speculative trading strategies related to derivatives.

FE537 Statistical Arbitrage **1.5:0:1.5**

This course will provide students with the basic concepts and techniques for statistical-based trading. It will present some of the standard approaches to statistical arbitrage including market neutral strategies such as pairs trading, value-based or contrarian methods, momentum-based strategies, cointegration-based trading, algorithmic and high-frequency trading. The course will address how to search for statistical arbitrage strategies based on short term and long-term patterns as well as multi-equity relationships.

FE541 Mathematics for Insurance **1.5:0:1.5**

The objective of this course is to present the basic aspects of the theory of insurance and solid foundation for further study in a more general setting, concentrating on the part of this theory related to life insurance.

FE542 Advanced Financial Time Series Analysis **1.5:0:1.5**

This course is designed to provide advance knowledge on the methods of financial time-series analyses. The topics covered in this course will include the state-space models, VAR model, Cointegration test, GARCH, and VECM.

FE543 Financial Market Microstructure **1.5:0:1.5**

This course discusses the market microstructure of financial markets. The topics in this course will include the price-formation process, order structure, market making process, information dissemination process, the role of market participants, information transmission across markets, and the impact of market microstructure on quotes and trades in financial markets.

FE544 Mortgage Backed Securities & Other Structured Securities **1.5:0:1.5**

The course will cover the fundamentals and building blocks of understanding how mortgage-backed securities are priced and analyzed. The focus will be on prepayment and interest rate risks, benefits and risks associated with mortgage-backed structured bonds and mortgage derivatives. Credit risks of various types of mortgages will also be discussed. Next, the course will focus on other structured securities from their basic fundamentals and valuation.

FE545 Contemporary Topics in Derivatives **1.5:0:1.5**

This course deals with several cases in financial engineering and derivatives. Through the case analyses and term project in addition to the lectures, students are expected to develop insight regarding issues in financial engineering and derivatives.

FE547 Algorithmic Trading and Quantitative Trading **1.5:0:1.5**

In this course we develop a quantitative investment and trading framework. In the first part of the course, we study the mechanics of trading in the financial markets, some typical trading strategies, and how to work with and model high frequency data. Then we turn to transaction costs and market impact models,

portfolio construction and robust optimization, and optimal betting and execution strategies. In the last part of the course, we focus on simulation techniques, back-testing strategies, and performance measurement. We use advanced econometric tools and model risk mitigation techniques throughout the course.

FE553 Alternative Investment **1.5:0:1.5**

The aim of this course is to introduce the students to the various issues associated with these investment routes including risk return profiles, taxation and legal issues and the advantages and disadvantages of using them

FE554 Fixed Income Portfolio Management **1.5:0:1.5**

This course covers issues pertinent to the management of fixed income portfolios. Characteristics of asset classes of fixed income securities and related products will be discussed. How to construct the optimal portfolios using the above asset classes and how to maintain the portfolio will also be discussed.

FE557 Commodity Trading **1.5:0:1.5**

This course discusses the fundamental nature of the commodity market, associated derivatives, and analytic methods and tools of trading in commodities. Also discussed are specific trading strategies of diverse commodity markets.

FE563 Investments in Venture **1.5:0:1.5**

In this course, we seek understand issues in venture capital investments. To achieve this goal, we overview the fundamental finance theories of risk-return relationships in investing start-up firms. Using the case study approach, we look at each issue including the exit strategies.

FE573 Investments in Private Markets **1.5:0:1.5**

In this course, we seek understand issues in venture capital investments. To achieve this goal, we overview the fundamental finance theories of risk-return relationships in investing start-up firms. Finally, we then explore the valuation technique and examine the exiting strategy using the case study approach.

FE583 Foreign Currency Investment **1.5:0:1.5**

This course builds fundamental understanding on foreign currencies and exchange rates, analyzes the foreign currency market and the instruments, and discusses the trading mechanism and trading strategies.

FE587 Estimation of Asset Pricing Models **1.5:0:1.5**

This course is to introduce empirical asset pricing and to focus on the issues of factor pricing models such as expected return-beta representation. Using GMM and cross-sectional regressions, factor pricing models will be estimated.

FE600 Special Topics in Financial Engineering **1.5:0:1.5**

This course deals with the latest developments and contemporary topics in the field of financial engineering.

FE617 Distinguished Lectures in Asset Management **1.5:0:1.5**

This course focuses on special or current issues regarding asset management.

FE619 Distinguished Lectures in Financial Engineering 1.5:0:1.5

This course covers methodologies and techniques to analyze important new issues that arise in the field of financial engineering.

FE627 Cases in Asset Management 1.5:0:1.5

This course deals with several cases in asset management. Through the case analyses and term project in addition to the lectures, students are expected to develop insight regarding issues in risk management.

FE628 Case Studies on Risk Management 1.5:0:1.5

In this course, cases related to various aspects of risk management at financial institutions are analyzed and discussed. Through the case analyses and term project in addition to the lectures, students are expected to develop insight and problem solving skills in handling risks.

FE639 Research Methods in Financial Engineering I 1.5:0:1.5

This course covers research methods essential in analyzing financial engineering issues. State-of-the-art numerical and econometric methods as well as research design issues will be discussed.

FE649 Research Methods in Financial Engineering II 1.5:0:1.5

This course discusses research methods essential in analyzing financial engineering issues. As a culminating experience, students are expected work on an issue of choice for dissertation. A preliminary version of the dissertation is to be submitted, presented and evaluated as a term paper.

College of Business English and Chinese Descriptions of Courses

BUS910 Basic Fluency I 3:1:0(1)

This class is designed to help students develop basic communicative skills in terms of ease, speed and smoothness of speech. The content of the class allows maximum discussion on a wide variety of basic topics. (Beginning/Low Intermediate)

BUS911 Basic Fluency II 3:1:0(1)

This class is designed to help students further develop their communicative skills to enhance conversational ability. Course content focuses on discussion, consensus, problem-solving and current events. (Low/Mid Intermediate)

BUS912 Newspapers-Reading and Discussion 3:1:0(1)

This class uses various newspapers to investigate current events. The class will focus on the skills of reading, narration, and discussion. Students will develop an understanding of how to obtain information efficiently and how to express that information concisely. Topics for discussion will vary, but they will be selected based on the interests of the students and the instructor. (High Intermediate/Advanced)

BUS913 Case Studies in Business 3:1:0(2)

This class is designed for students who want to discuss issues in business while improving their communicative skills. This course focuses on case studies and background information in the areas of

management, marketing, negotiations, and conflict resolution. It is ideal for the students who want to develop basic analytical skills as well as those who want to evaluate their personal management skills. (High Intermediate/Advanced)

BUS914 American Popular Culture English 3:1:0(1)

This is a video-based course designed to teach students about American popular culture through television and movies. The primary focus of this course is on developing the listening skills of students, but other skills will also be developed. Various listening comprehension exercises will be done with video to build skills to facilitate interaction with native speakers of English. Additionally, the textbook World Class English is used to develop conversation and writing skills. This course is designed for beginners to Mid-Intermediate level students.

BUS915 Business English - Blended 3:1:0(1)

This course uses video and reading materials to increase the business knowledge of students. Videos dealing with business issues are used to develop the listening skills of students, as well as teach them how to function as global citizens in an increasingly international world. Additionally, readings and exercises from the book Business Communication Essentials are used to give students practical knowledge about how to write short business messages. Specifically, students will get hands-on experience writing various types of business letters, memo's and E-mail. The book World Class English is used to develop conversation and further writing skills of students. Although all four language skills will be enhanced in this course, the focus will be on developing listening and writing skills. This course is designed for students from OPI Level 4 to AS.

BUS916 Real Life English 3:1:0(1)

This is a debate and discussion course designed to enhance the conversational ability of students. Formal debates are held between teams of students through the use of movie segments. The textbook World Class English is used to further develop conversational and writing ability. This course prepares students to think on their feet when dealing with real-life situations in English. For Intermediate-level and higher.

BUS917 Job Search English Skills 3:1:0(2)

This class develops English language skills to help students obtain employment in Korea and around the world. Topics covered include starting the job search, cover letters, resumes, and interviews. Additionally, students will take several practice TOEIC tests since it is a requirement for many companies. For Intermediate-level and higher students.

BUS918 Business English Writing - Blended 3:1:0(1)

This course is an introduction to English Business writing. This course assumes that students have acquired a reasonable fluency in spoken English (minimum OPI Level 3) and have a good working knowledge of English sentence structure. The main thrust of this course is to focus on the basic elements of paragraph and essay writing. Then to focus on writing short business reports, proposals, and executive summaries.

BUS919 Academic English Writing II 3:1:0(5)

This course uses the North American style of teaching to develop academic writing skills in English. It is student centered in its approach in that students will write critiques on articles they read and lead class discussions on them. Additionally, students write a 5-10 page term paper which is to be completed in 3 drafts. PLEASE NOTE: THIS IS A RIGOROUS COURSE AND STUDENTS SHOULD BE PREPARE TO DO SEVERAL HOURS OF HOMEWORK EACH WEEK. For Mid-Intermediate-level and higher students.

BUS920 Listening Skills I 3:1:0(1)

This course is aimed at mid-intermediate to high-intermediate students (OPI 3, 4, 5). In this course you will improve your ability to listen to material found in many settings including academic settings. You will gain a better understanding of the listening process and how to listen actively. You will also develop the necessary skills needed to take effective notes in an academic lecture.

BUS921 Listening Skills II 3:1:0(1)

This course is aimed at high-intermediate to advanced students (OPI 5, 6, AS). In this course you will improve your ability to listen to material found in many settings including academic settings. You will gain a better understanding of the listening process and how to listen actively. You will also develop the necessary skills needed to take effective notes in an academic lecture.

BUS922 American Immersion I 3:1:0(1)

This course is designed to help students function better if they plan to go to America to further their studies. American culture is the main focus of the course, both from a historical and contemporary perspective. This course will use the textbook *The American Ways* and the television series *Friends* as the basis for instruction. All four language skills will be developed: listening, speaking, reading and writing. It is designed for high-intermediate level students and above

BUS923 American Immersion II 3:1:0(1)

This course is designed to help students function better if they plan to go to America to further their studies. American culture is the main focus of the course, both from a historical and contemporary perspective. This course will use the textbook *The American Ways* and the television series *Friends* as the basis for instruction. All four language skills will be developed: listening, speaking, reading and writing. Please be advised that American Immersion I is not a prerequisite for this course. The material covered in this course is different from American Immersion I. Both courses are designed for high-intermediate level students and above

BUS924 American Classic Films 3:1:0(1)

In this course students will improve their listening and speaking skills while seeking to understand the content and cultural issues associated with three classic, Oscar winning American films. We will explore the historical and social issues that provide the setting for the films. You will be responsible for learning and understanding the content of the films in addition to the language skills practiced.

BUS925 English Debate and Critical Communication Skills 3:1:0(1)

The purpose of this course is to introduce students to the art of proper debate. The course will focus on the purpose of debate, the rules of debate, and the development of a sound argument within a debate. Debating is an art that requires the combination of a logical and sound argument with the ability to communicate that argument in an oral format. Debating is the art of oral persuasion.

BUS926 English for Financial Issues 3:1:0(1)

This course is designed to facilitate discussion of finance in English. So that students can prepare for and participate in core finance issues effectively and confidently. .

BUS927 Business Presentation 3:1:0(2)

The purpose of this subject is to provide ME students with a range of skills, knowledge, and options for presenting in a professional and interesting manner, and knowledge on how to present to a range or audiences. Participants will be required to perform a variety of speeches on a regular basis and participants will be expected to provide constructive criticism and feedback to others, thereby creating a shared and mutually beneficial learning environment.

BUS928 Teaching Effectiveness in English 3:1:0(2)

The purpose of this subject is to provide PhD students with a range of skills, knowledge, and options for teaching in English in a professional and interesting manner, and knowledge on how to present information to students well. Participants will be required to learn a variety of teaching methods and will be expected to teach small groups and provide constructive criticism and feedback to others, thereby creating a shared and mutually beneficial learning environment.

BUS929 Academic Writing in English 3:1:0(2)

.The purpose of this subject is to provide ME and PhD students with rigorous practice in developing their ideas in writing. Students are expected to become experts in writing full paragraphs, referencing, using evidence to support their ideas and checking their own materials. Students are also expected to develop feedback skills in order to create a supportive learning environment.

BUS930 Elementary Business Chinese I 3:0:0(1)

This course is designed for beginners learning necessary Chinese expressions for daily commercial communication and skills for polite social intercourse.

BUS931 Intermediate Business Chinese I 3:0:0(1)

Ability to use appropriate to design to the teaching of business Chinese in three-in-one training pattern that combines the language as a carrier with commercial activities and cross-cultural knowledge. This course is prepared for beginners who acquire language skills for business information exchange.

BUS932 Intermediate Business Chinese II 3:0:0(1)

Ability to use appropriate to design to the teaching of business Chinese in three-in-one training pattern that combines the language as a carrier with commercial activities and cross-cultural knowledge. This course is prepared for beginners who acquire language skills for business information exchange.

BUS933 Advanced Business Chinese I 3:0:0(1)

Ability to use appropriate to design to the teaching of advanced business Chinese in three-in-one training pattern that combines the language as a carrier with commercial activities and cross-cultural knowledge. Designed for the training of intermediate learners in language skills for business information exchange.

BUS934 Advanced Business Chinese II 3:0:0(1)

Ability to use appropriate to design to the teaching of advanced business Chinese in three-in-one training pattern that combines the language as a carrier with commercial activities and cross-cultural knowledge. Designed for the training of intermediate learners in language skills for business information exchange.