

## MIF PRE-COURSE DESCRIPTIONS

### **MF501 Mathematics for Finance**

Financial mathematical background for students entering the graduate program in finance. The concept of time value of money and its applications especially for use in the area of financial asset valuation and capital budgeting; the rudiments of probability theory and statistics relevant to the theory of investment and introductory linear algebra involving matrix operation such as determinant and inverse of matrix. The mathematical background in calculus necessary to understand how mathematical techniques are used in finance. Calculus, such as functions, limits, and continuity, the derivatives, analysis of functions, applications of derivatives, and integration and principles of integral evaluation, etc.

### **MF502 Introduction to Economics**

This class is an introduction to both macroeconomic and microeconomics and its concepts as they pertain to finance. The class covers the following:

1. Introduction to financial markets institution and price setting.
2. Basic concept of supply and demand, how prices are set, elasticity.
3. Consumer behavior.
4. Profit Maximization and Competitive Supply; Optimization with constraint: Profit Maximization;
5. The Analysis of Competitive Markets; Imperfect Competition: Market Power;
6. Macroeconomics: GDP, aggregate demand/supply; money demand/supply;
7. Fund flows/ interest rates.

Concepts include descriptive statistics, inferential statistics, and probability distribution theories. Basic concept in regression analysis including the Ordinary Least Squares (OLS) estimation method, hypothesis testing of parameters, dummy variables regression model, and predicting of both simple and multiple regression models. The tools of basic economics analysis including the concepts of opportunity choice, and supply and demand. Macroeconomics which looks at large issues such as economic growth, inflation, unemployment, fiscal and monetary policies and issues affecting the entire economy.

### **MF503 Fundamental Accounting and Finance**

This class presents students with the importance of accounting as an informational role which relates to business decision making. It also presents students with different accounting systems, how to read accounting data and translate it to finance, and how business transactions are recorded. It addresses accounting cycle, annual reports (56-1, 56-2 forms). The class covers how to read financial reports including balance sheet, income statement, and cash flow statement (introduction). The second part of this class includes time value of money, capital budgeting, and introduction to cost of capital among other basic finance concepts.