QUANTITATIVE INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

The School of Science presents these unique courses for professionals and employees in the financial industry, in search of new expertise to enhance their skills in financial risk management.

COURSE OBJECTIVES

The course aims to provide comprehensive overview of theory and practice of portfolio management and quantitative analysis of investment.

LEARNING OUTCOMES:

On completion of this short course, participants should be able to:

1. Define and apply logarithms
2. Describe and compute compounded returns and continuously compounded returns
3. Use geometric series
4. Explain and use probability and statistical concepts in finance problems.
5. Use various probability distributions
6. Apply regression models
7. Engage with securities markets and capital markets
8. Model and analyze Asset Allocation
9. Work with models of risk and return
10. Apply and analyze asset pricing models
11. Valuate stocks, securities and financial derivatives
12. Analyze financial statements
13. Evaluate portfolio performance.

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Short Course Content & Unit Descriptions

Facilitators:

Mr. Vijayakumar Kandaswamy – MSc, PGDCS.

Dr. Rodriguez Gnitchogna; MSc PhD.

UNIT 1: Quantitative Methods (6 weeks)

Probabilities: Discrete Random Variables, Continuous Random Variables, Mutually Exclusive Events, Independent Events, conditional Probability. Basic Statistics: Averages; Expectations; Variance and Standard Deviation; Standardized Variables; Covariance; Correlation; Application: Portfolio Variance and Hedging; Moments; Best Linear Unbiased Estimator (BLUE) Problems. Distributions: Uniform Distribution; Bernoulli Distribution;Binomial Distribution;Poisson Distribution;Normal Distribution;Lognormal Distribution;Central Limit Theorem;Application: Monte Carlo Simulations: Creating Normal Random Variables; Chi;Squared Distribution;Student's t Distribution;F;Distribution; Confidence Intervals; Hypothesis Testing; Chebyshev's Inequality;Application: VaR; Principal Component Analysis; Application: The Dynamic Term Structure of Interest Rates; Application: The Structure of Global Equity Markets. Linear Regression (One Regressor); Linear Regression (Multivariate); Application: Factor Analysis.

UNIT 2: Investment analysis and Portfolio management (8 weeks)

Introduction;investment setting and selection in global markets; Securities market and indicator series; efficient capital markets; multifactor models of risk and return; Portfolio management; Asset allocation; Asset pricing models; macroeconomic and market analysis of global allocation decision; Analysis of financial statements; security valuation and stock market analysis; stock valuation;;equity portfolio management; bond fundamentals; analysis and valuation of bonds; bond portfolio management strategies; derivate markets and securities; forward, future contracts, option and swap contracts; evaluation of portfolio performance.

Learning Resources

Recommended textbooks:

1. Investment analysis and Portfolio management – Frank Reilly and Keith Brown – CFA Institute

Additional Readings:

2. Principles of Portfolio and Equity Analysis – Michael G McMillan, Jerald E Pinto et al – John Wiley & Sons, Inc.
    Quantitative Investment analysis ; Michael G McMillan, Jerald E Pinto et al – John Wiley & Sons, Inc.

Application Deadline: February or July | Mode of Delivery: Online

Online Application: www.unam.edu.na/shortcourses

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