



## CERTIFICATE IN FINANCIAL RISK 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

This certificate consists of following courses:

1. Quantitative methods in finance
2. Financial Risk Management
3. Derivatives Pricing
4. Time series analysis and forecasting in finance

### Facilitators:

1. Dr. S Nuugulu
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3. Dr. M Kamga Pene
4. Mr. V Kandaswamy

*Enquiries:*

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# Short Course Content & Unit Descriptions

## UNIT 1. Quantitative methods in finance:

Time value of money - present and future value of an annuity - discounted cash flow applications - NPV and IRR - Portfolio return measurement - Money and time weighted rate of return - Money market yields. Statistical concepts and market returns - measures of central tendency - measures of dispersion - Sharpe ratio - symmetry and skewness - Probability - expected value and variance - Baye's formula.

## UNIT 2. Financial Risk Management:

Financial Risks in Banks. The Basel II&III Capital Accords. Operational Risk Analysis and Management - A Four-Step Measurement Process for Operational Risk. The Basel II Operational Risk Capital Charge - Basic Indicator Approach (BIA) & The Standardized Approach (TSA).

Mapping of Business Lines - Advanced Measurement Approach (AMA) for Operational risk. Actuarial Risk Models and Model Risk. Credit Risk Analysis & Management for the Retail Portfolio, Probability of Default, Loss Given Default, Exposure at Default. Market Risk Analysis & Management (Foreign Exchange, Interest Rates, Commodities, Equities)- Historical Simulation-Monte Carlo Simulation.

## UNIT 3. Derivatives Pricing:

Derivative markets and instruments, forward markets and contracts, Pricing And Valuation Of Forward Contracts, Generic Pricing and Valuation of a Forward Contract, Pricing and Valuation of

Equity Forward Contracts, Pricing and Valuation of Fixed-Income and Interest Rate Forward Contracts, Pricing and Valuation of Currency Forward Contracts. Futures markets and contracts: Types Of Futures Contracts -Short-Term interest Rate Futures Contracts-Intermediate- and Long-Term interest Rate Futures Contracts -Stock index Futures Contracts-Currency Futures Contracts -Pricing And Valuation Of Futures Contracts -Generic Pricing and Valuation of a Futures Contract- Pricing interest Rate Futures. Option markets and contracts: Basic Characteristics of Options -Types of Options - Principles Of Option Pricing - Payoff Values-Boundary Conditions- Effect of a Difference in Exercise Price/Time to Expiration. Discrete-Time Option Pricing: The Binomial Model - Continuous- Time Option Pricing: The Black-Scholes-Merton Model. Swaps.

Pricing Options On Forward And Futures Contracts and An Application To Interest Rate Option Pricing. Swap markets and contracts: Characteristics of Swap Contracts -Termination of a Swap -Pricing And Valuation Of

## UNIT 4. Time Series analysis and forecasting:

Correlation Analysis - Correlation Coefficient -Testing Significance of Correlation Coefficient. Regression - Linear Regression - Multiple Regression - Using Dummy Variables in Regression - Violations of Regression Assumptions - Model Specification and Errors in Specification - Models with Qualitative Dependent Variables. Principles of Forecasting Time-Series Analysis and Forecasting- Components of Time Series - Trend Analysis - Forecasting Model Selection - Moving Average and Exponential Smoothing - Forecasting with Regression Methods - Time Series Decomposition - ARIMA (Box- Jenkins)- Type Forecasting - The Forecast Process and Choosing the Right Forecasting Technique.

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

**Online Application: [www.unam.edu.na/shortcourses](http://www.unam.edu.na/shortcourses)**