

Brief Review of Option Basics

- Types of options
- Intrinsic value of Options
- Profit/loss diagrams
- Minimum and maximum values
- Effect of interest rates on call and put option values
- Effect of volatility on call and put option values
- Early exercise considerations

Option Pricing Dynamics

- The 'Greeks'
- Delta, Gamma, Theta and Vega
- Factors influencing the price of Options
- Strangles
- Reversal / conversion spreads

Black-Scholes Model for Option Pricing

- Implied volatility and valuing Options using Implied Volatility
- Historical volatility
- Volatility Smile Versus The Volatility Curve
- Term structure of volatility

Introduction to Arbitrage Pricing Relationships

- Synthetic Positions
 - Synthetic Call
 - Protective Put
- Arbitrage Trading Strategies
 - Combination Strategies
 - Spread Strategies
 - Multiple Call/Put Strategies
- Conversions
- Calendar spreads
- Box spreads long and short
- Butterfly spreads long and short
- Put/Call Parity

Black-Scholes Option Pricing Model

- Black-Scholes - Limiting Case Of Binomial Model
- The formula
- What the formula means
- Computing an option price
- A Generalized Option Pricing Formula
- Options on dividend paying stocks
- Options On Futures

Binomial Pricing Models

- Binomial Trees
- Nodes
- Project stock prices to expiration, determine intrinsic values
- Step back process to find option value
- General considerations
- Multi period model
- Dynamic tree building process using advanced features of EXCEL

Volatility Models

- Volatility in different time frames
- Differential volatility - overnight, intraday, daily
- Implied volatility surfaces
- Trading the volatility skew
- Charting price changes in standard deviations
- Charting volatility
- Volatility as a technical indicator

Value at Risk

- Concept of VaR and its significance
- Variance – Covariance Matrix
- Historical Volatility Method
- Monte- Carlo Simulation

Portfolio Management

- Using Solver Feature of Excel to create an optimal portfolio of Stocks
- Measuring the effectiveness of portfolio using Sharpe, Treynor & Alpha ratios
- Computing the Risk & Return profiles of different securities
- Altering portfolio components and Risk Measurement process.