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## *Title: Advanced Financial Modeling & Risk Analysis*

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This course is designed to provide you with a range of techniques, concepts and methodologies that will take your financial modeling skills to the next level and allow you to gain maximum value on these vital issues:

- UNDERSTAND essential steps in designing simple, yet powerful financial models and cope with well-known model complexities by applying best practice modeling principles and techniques
- LEARN to measure, identify potential trends, interpret and forecast company performance using Excel modeling
- UNDERSTAND how to choose reasonable assumptions and discover how to prepare realistic financial forecasts so that to develop reliable and robust models.
- REVIEW the major components in each financial statement and build dynamic and easy to use financial statement models in Excel using real-life case studies.
- DISTINGUISH among the most common valuation methodologies (DCF, Comps, and Trading Multiples), apply cash flow valuation and perform sensitivity analysis.
- IDENTIFY the importance of uncertainty for model building and decision making and LEARN how to select distributions and incorporate uncertainty in a financial model.
- APPLY and INTERPRET Monte Carlo simulation results and learn how to combine optimization and simulation
- CREATE meaningful management reports and charts for communication

The course is based in case studies and real-life examples, using a highly effective hands-on intuitive training approach.

### **Course Overview**

A financial modeling course for people who need to build and modify financial models faster and with fewer errors by improving their modeling design, style, structure and productivity. It is a unique combination of financial and risk modeling, enabling participants to produce realistic and robust corporate finance models.

It teaches the core financial model design and construction techniques that every modeler should know. Far too many business spreadsheet models are flawed due to a lack of thought about objectives, layout and design. This course will allow you to adopt a structured design strategy so that to develop better financial models, in less time and with greater accuracy.

Participants follow the instructor, while building their own financial models on their own computers; in this way they immediately practice what they have been taught. Various templates are going to be offered in line with the methodology discussed, that will help participants to apply principles and techniques presented during the course. Participants will also cover how to build models accurately and efficiently through a series of best practice modeling rules.

Having acquired the core financial modeling knowledge during the first weeks of this customized course, participants will then learn a range of new tools and techniques, master the fundamentals of discounted cash flow valuation and integrate uncertainty into their models using a risk modeling application.

Participants develop a financial model completely from scratch, inputting historical data and assumptions to forecast the income statement, balance sheet and cash flow of a business using a step-by-step approach on choosing, locating and developing the appropriate forecast inputs drivers. Participants will also learn how to integrate all financial statements to produce a correctly balanced Balance Sheet, avoiding any circularity.

Using the forecasted financial statements, the application of standard financial valuation methodologies (DCF, Comps, Trading Multiples, etc) is illustrated, focusing on the issues that come up when estimating discount rates, cash flows and expected growth and other key parameters; the model is then subjected to sensitivity and risk analysis by emphasizing the appropriate selection of distributions, and avoidance of common risk modeling mistakes. Finally using Monte Carlo simulation, participants take their models one step further from the simple static input/output financial models by creating a dynamic decision making tool.

The course will be accompanied with case studies that will ensure the ability of participants to implement the methods and techniques discussed during the workshop. During each stage participants will get practical tips that will help them upgrade the level of their work.

By attending this course you will become more efficient in creating a financial model from scratch and know how to create models that are easily understood and maintained. Key issues in designing a model, controlling model risk, effective selection of the proper type of financial model, are just some of the key topics that are going to be developed during the Course. The Course will be accompanied with case studies that will ensure the ability of participants to implement the methods and techniques discussed during the Course.

## **COURSE AGENDA**

### **A. Excel Spreadsheet Skills**

#### **Weeks 1 - 3**

- Introduction and Overview of the Course
- Effective Model Design & Construction - Financial Modeling Best Practices
- Reporting, Presentation and Review of the Model
- Review of commonly-used Excel functions in financial modeling (i.e. VLOOKUP, OFFSET, etc.)
- Calculation Techniques
  - a. Learning how to nest functions
  - b. Using Lookup tables and IF functions
  - c. Subtotals
  - d. Solving Circular References
  - e. Logic functions i.e. OR & AND
  - f. Using Filters
- Smart Techniques for quick and efficient modeling - Use of keyboard shortcuts
- List Boxes & Scroll Bars
  - a. Building a scrolling list box as a menu
  - b. Using the Scroll bar as input and linking to graphs
- Advanced Excel techniques for creating dynamic charts
- Optimization techniques
- Use of Goal Seek and Solver
- Advanced Charts
  - a. Create Tornado Charts
  - b. create a McKinsey-style waterfall charts

- Formatting Literature
  - a. Use conditional formatting
- Advanced Excel techniques for navigating within excel workbooks
  - a. Use of Macros
  - b. Use of Form & Active X Controls
- Data Handling
  - a. Use Pivot tables & Power Pivots
  - b. Build dynamic charts
  - c. Use of slicers
- How to Bullet-Proof your model
  - a. Preventing critical errors
  - b. Techniques to reduce potential errors , error-check creation
  - c. Stress testing and Auditing the Model

**Workshops:** You will practice the above techniques through various workshops. Moreover you will analyze different data sets using a variety of financial, statistical other Excel tools and techniques.

## **B. Corporate Financial Modelling**

### **Week 4-6**

- Gathering Historical Data – Navigating IFRS reports and extracting relevant information
- Setting up the core financial statements
  - a. Principles of Financial statements
  - b. The accounting equation
  - c. Links between financial statements
- Preparing an Integrated three-way financial model
- Selecting Key Forecast Drivers
- Balancing the model using various techniques (circular reference, cash sweeps, etc.)
- Modeling and presenting the cash flow statement
- Derivation of Major Financial Ratios: Profitability, Efficiency, Liquidity and Debt ratios
- Financial Statements and Valuation Modeling (DCF , Comps, NAV)
- Modeling Inflation
- Forecasting techniques
  - a. Determination of business trends, cycles & seasonality - Using trend and seasonal variation for revenue forecasting
  - b. Modelling S-shaped adoption curves
- The forecasting process and its applications
  - a. Forecasting Revenues & Costs
  - b. Forecasting CAPEX
  - c. Forecasting OPEX
- Modelling for Uncertainty - Risk Analysis results, presentation and interpretation
  - a. Introduction to Risk Modeling
  - b. Integrate uncertainty by performing Risk Analysis
  - c. Sensitivity Analysis: Identify key input/variables
  - d. Modeling scenarios - what's the best way to run scenarios?
  - e. Instant scenario switching with drop down boxes
- Examining the consequences of continuous risks
  - a. Probability Density Functions - Selecting the proper probability distribution
  - b. Monte Carlo Simulation
  - c. Frequency Distribution Charts
- Best Practices for Output presentation

**Workshops:** You will build various models, all parts of a fully integrated financial model. You will introduce a dashboard-like control panel, Multiple Scenarios, Sensitivity analysis and Monte Carlo simulation into the model.

## **C. Final Workshop**

### **Week 7**

You will draft a debt restructuring proposal to the CEO of TradeCo SA (a real life listed company). Based on your proposal the CEO will negotiate with TradeCo's banks a 10-year restructuring plan. The proposal will be based on a full operating financial model and will cover TradeCo's:

1. *Business operations – how it makes money,*
2. *Assets – the resources it will provide as a collateral and potential investments in the future,*
3. *Financing – how its future operations and investments, if any, will be financed, and*
4. *Analysis of Key Performance Indicators across the explicit forecast period.*