A FINANCIAL MODEL IS A REPRESENTATION of the present and future states of a financial entity. A financial model is a dynamic creation and its outcomes are all action-related: deciding, reporting, analysing, valuing and risk assessing – these are just some of the outcomes of financial modelling.

Financial modelling requires accounting, finance and spreadsheet skills. Design, presentation and communication skills are also important.

This is a practical hands-on workshop with a strong emphasis on delegate participation.

About this Course

This course shows how financial modelling is performed and how financial models are used. It also shows the finance, accounting, spreadsheet and design skills that underlay good modelling practice.

This intermediate through to advanced course is aimed at those who wish to learn the principles and practice of financial modelling for the purpose of designing or maintaining their own models. With a practical 'hands-on' approach, each participant will work with a computer for the majority of the course on practical financial modelling topics.

It is expected that participants will have had prior exposure to spreadsheets, and already be able to work with essential formulae like SUM and IF. An understanding of the difference between absolute and relative addressing (e.g. between =B$2 and =B2) will also be helpful. Familiarity with basic accounting concepts like balance sheets, cash flow statements and profit and loss is also necessary. Participants attending the extended (day 2) course should have a level of knowledge equivalent to that covered on the core (day 1) course.

Day 1 - Core

This day's workshop will equip participants to:

» Explain the finance principles underlying financial modelling: Discount rates, the relationship between discount rates and present and future value, and the definition and interpretation of internal rate of return

» Perform a range of financial calculations by using the following spreadsheet financial functions: PMT, PV, FV, RATE, NPER, IPMT, PPMT, EFFECT, NOMINAL, NPV, XNPV, IRR and XIRR

» Apply the following classes of spreadsheet functions individually and in combination in a modelling
context: Arithmetic, logical, referencing, aggregation, date, ranking, error handling and text manipulation

» Use this range of spreadsheet tools and features in developing models: Data tables, worksheet and workbook protection, row / column hiding, pane freezing, the function wizard, auditing tools and keyboard shortcuts

» List some of the major benefits and outcomes of financial modelling

» Explain and apply design principles relating to the structure, presentation, user interface and access control of models

» Design a financial model and use it for sensitivity and scenario analysis and for valuation purposes

Day 2 - Extended
This day’s workshop will equip participants to:

» Describe and use the following advanced spreadsheet functions and features: Arrays, form elements, custom and conditional formatting

» Explain the meaning and relevance to modelling of these finance concepts: Inflation, term structure, cost of capital and its drivers, risk and its accounting

» Build, test and enhance financial models and solve common modelling challenges including the following:
  — determining appropriate periodicity
  — dealing with one-off or irregular events
  — modelling non-linear and scale effects
  — prioritising and arbitrating between claims on cash flows
  — dealing with extreme values
  — avoiding circularities
  — planning for sensitivity and scenario analysis
  — accounting for risk and uncertainty
  — managing and extending large / multi-tab models

» Apply Excel’s Goal-seek and Solver to modelling problems that require an iterative method for their solution

» Give examples of how Visual Basic can be used in modelling to automate routine or repetitive tasks, to add new functions and to integrate Microsoft Office applications

Length

This is a two day course. The first day covers core modelling concepts and practice. The second day covers extended modelling concepts and practice. Delegates may register for one or both days.
**INTENSIVE FINANCE SERIES**

**Financial Modelling**

**COURSE AGENDA**

### Day One – Core

- **Finance concepts and financial functions**
  Core finance concepts – on which many financial models rely – are covered in this section: Present and future value, discount rates and their determinants, and internal rate of return. Spreadsheet functions that calculate these quantities are described and applied.

- **Spreadsheet functions used in financial modelling**
  This section reviews the functions most commonly used in financial modelling and gives examples of their applications. These function groups are covered: Arithmetic, logical, referencing, aggregation, date, ranking, error handling and text manipulation.

- **Spreadsheet tools and features used in financial modelling**
  Spreadsheets provide additional tools and features that are helpful in modelling. These are reviewed and applied: Data tables, charts, worksheet and workbook protection, row/column hiding, pane freezing, function wizard, auditing tools and keyboard shortcuts.

- **Accounting concepts that underlie financial modelling**
  Financial modelling rests on an accounting framework. This section reviews accounting principles and shows how a financial model can be implemented within an accounting framework. The structure of the Balance sheet, income statement and cash flow statement is described.

- **An overview of financial modelling**
  A financial model is a dynamic creation and its outcomes are all action-related: Deciding, reporting, analysing, valuing and risk assessing – these are just some of the outcomes of financial modelling. This section reviews the objectives and benefits of modelling.

- **Financial modelling design principles**
  A financial model should be easy to understand and clear to follow. It should be easy to extend. It should be error-free and as compact and responsive as possible. Design principles to achieve these goals are described as they relate to the structure, presentation, control and user-interface of models.

- **Financial modelling applications and exercises**
  In this section a financial model is constructed according to the design principles covered earlier in the course. It used to model the current and future states of an enterprise, to examine the enterprises’ behaviour under various scenarios, to determine its sensitivity to critical revenue and cost drivers, to value the cash flows it generates and to determine its overall value.

### Day Two – Extended

- **Advanced spreadsheet functions and features**
  Spreadsheets provide advanced functions and features for the more complex or sophisticated financial model. These advanced functions features are examined: Arrays, form elements, custom and conditional formats.

- **Applications of advanced spreadsheet functions and features**
  The advanced spreadsheet functions and features covered in the preceding section are used to solve a range of compact but challenging problems.

- **Advanced finance concepts**
  The following concepts may need to be considered in the design of some financial models: Inflation and real and nominal values, term structures of interest and discount rates, the factors that influence the cost of capital, and accounting for risk. These concepts are described in this section.

- **Financial modelling applications and exercises**
  This section shows how financial models are constructed and how they are maintained and enhanced through their life-cycles. It gives examples of common problems financial modellers face and techniques and solutions to address those challenges. The following modelling applications and outcomes are amongst those covered: Valuation, sensitivity and scenario analysis, risk-assessment and decision-support. Practical exercises and topics include these:
  - Determining appropriate periodicity: e.g. Aligning with calculation dates of debt covenants, capturing seasonal effects. Structuring the model to permit periodicity to be easily changed.
  - Modelling one-off / irregular or short-term events.
  - Modelling non-linear and scale-dependent effects.
  - Prioritising and arbitrating between claims on cash flows.
  - Dealing with extreme values, shocks and boundary conditions.
  - Planning for sensitivity / scenario / stress-test analysis.
  - Techniques to avoid unnecessary circularities.
  - Structuring models to allow extensions to be performed easily.
  - Modelling entities with perpetual life-spans / time-scales.
  - Error and consistency checking and notification
  - Defining and applying stylistic and structural conventions
  - Dealing with and extending large / multi-tab models

- **Goal-seeking and the Solver**
  Some financial modelling problems cannot be solved in a single step and require an iterative solution. Spreadsheets provide three tools for problems like these: Iteration, Goal-Seek and the Solver. These tools are described in this section, their advantages and limitations are examined and they are applied to solve a range of finance problems.

- **Applications of Visual Basic**
  Visual Basic allows routine spreadsheet tasks to be recorded and played back. This lessens the time needed to perform repetitive spreadsheet tasks. Visual Basic also allows new functions to be defined and used within spreadsheet formulæ. These applications of Visual Basic are illustrated in this section.
INTENSIVE FINANCE SERIES

Financial Modelling

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