# Financial Analysis Certificate

## *Using Excel*

**Australia's premier Excel course for finance professionals**

This course is designed for existing users of Excel or similar spreadsheet programs needing to vastly increase their modelling & analytical skills especially in the disciplinary areas of Finance, Accounting, Management & Procurement.

It is a unique & practical 48-hour hands-on course designed to improve the Excel modelling & analytical skills of finance professionals for the forecast, analysis & presentation of business & financial information.

### Modes of Study

- In class mode: 48 hours over one month
- In-house class mode: 48 hours over one month
- By distance learning: 48 – 72 hours over six to twelve months (see separate brochure)

### Key Outcomes

- Significantly upgrade your modelling & analytical skills;
- 48 to 56 hours of continuing professional education for accountants;
- Learn proven methodologies & techniques to build more transparent & powerful models & reports whilst reducing complexity;
- Gain effective approaches to build robust sensitivity into models;
- Build a useful & effective framework for assimilating technical knowledge;
- Importantly – develop measurable improvements in accuracy, productivity & transparency!

### The Course Delivers

- A thorough grounding in the tools & features available in Excel;
- Techniques to assist in auditing & understanding existing workbooks;
- Coverage of essential Excel functions for modelling, forecasting & financial analysis;
- Methods to generalise formulas for more dynamic & flexible calculations for modelling & analysis;
- Approaches to simplify calculations & increase the transparency of models & analyses;
- Practical guidance on the layout & structuring of workbooks for financial modelling.

### Who Benefits

- Financial modellers & those building valuation & forecasting models;
- Business Analysts responsible for forecasting & performance analysis;
- Accountants, finance managers & financial controllers budgeting & analysing business performance;
- Fund accountants & managers in equity & property funds;
- Financial advisers, public accountants, management consultants;
- Procurement, project planning & logistical staff responsible for financial & logistical planning;
- Managers responsible for their own analysis & forecasting;
- Post grad finance & MBA students from both financial & non-financial disciplines;
- Anyone who uses Excel to perform their role, looking to improve their productivity & accuracy.

### Benefits for the Employer

- Direct & measurable improvement in staff productivity & a reduction in errors through good design;
- Standardisation of technique within workgroups is an important outcome;
- A number of our clients have made this course an integral part of their employee training & development programs & have reaped measurable benefits from the standardised techniques adopted;
- The very flexibility that is the principal attraction of modern spreadsheet products is the reason for shortcomings in design. A user must adopt & develop a strongly defined technique that enhances their efficiency, increases transparency & improves reliability. This course is not "just another Excel course", it delivers on these requirements.

www.uts.edu.au

# Testimonials

Most of these testimonials were offered some months after course completion, not just as polite feedback on the final day of the course.

- "During the six weeks since this course commenced, my models have evolved from complex and volatile to simple and efficient. Furthermore, I have been able to add a level of functionality that was hitherto unappreciated." - Patrick H
- "I am writing to just let you know how much your course has helped me increase my productivity and add value to the work I do. With the learning's from the course I can run various scenarios with so much ease. I have received appreciation from my manager and senior management as these models have really helped them in making informed business decisions" - Sameer M
- "I found this course incredibly helpful and would highly recommend it as a good investment of time and money to anybody requiring advanced skills in the use of Excel. It has been an invaluable resource with fantastic quality of course notes for later reference. As a business person involved in feasibilities, computer modelling, due diligence etc and in my work as a Chartered Accountant and Licensed Real Estate Agent, it has certainly been very helpful" - Rob E
- "This course is not just about "Formulas". James challenges our entrenched way of building models through technique and planning. A tremendous value-add for any employee using Excel!" - John E
- "James has a passion for his subject which he effectively communicates to his students. This course has the potential to be very dry but James keeps it interesting and relevant. Few courses achieve what they claim in their promotions however this course exceeded my expectations and was excellent value." - Jim R

# Detailed Course Outline

### Key Techniques for Model Building

- Guidelines for effective model layout
- Guidelines for improving model and analytical clarity & reducing complexity
- Handling assumptions & designing for powerful & effective scenario & sensitivity analysis
- Model segregation

### Sensitivities

- Setting up workbooks to enable sensitivity analysis
- Methods to implement scenario analysis
- Sensitivity & scenario analysis using Data Tables
- Models with tables of scenarios
- Dynamic reference sensitivity solutions
- Placement of data tables on any worksheet
- Multi-variable data tables

### Formula Building

- Building formulas robustly
- Developing productive and error-averse formula entry techniques
- Pointing techniques to reference ranges & avoid errors
- Tools for building & interpreting formulas
- Important shortcuts for formula building
- Formula view, finding inconsistent formulas

### Understanding Formulas

- Understanding Excel expressions (formulas) and how they are evaluated
- Excel operators and their precedence
- Relative, mixed, absolute & multi-sheet addressing; A1 versus R1C1 addresses
- Expression nesting and managing complexity
- Identifying & implementing the appropriate function to solve problems
- Formula building techniques to reduce referential errors
- Range, Union & Intersection operators
- Data types & conversion
- Understanding array formulas
- Understanding the new Dynamic array formulas
- When to use array functions
- Alternatives to array formulas
- Understanding ambiguous & generalised references

### Keyboard Techniques

- Accessing ribbon controls, context menu commands, ranges, dialog boxes etc.
- Navigating and selecting ranges, sheets, objects, chart elements
- Range selection for formula entry, and during formula entry

## Working with Names

- Understanding names
- Working with names
- Defining, creating & editing names
- Guidelines for the use of names - when and when not to use names
- Effective naming techniques
- Creating dynamically defined names
- Alternatives to naming ranges
- Use of names to improve workbook links
- Working with names in formulas
- Keyboard shortcuts for effective name use and navigation

## Conditional Expressions

- Logical expressions & logical operators
- Use of trigger & switch expressions
- Use of IF() to handle conditional logic
- Use of CHOOSE() to handle conditional logic
- When (and when not) to use IF, CHOOSE, IFS, SWITCH
- Use of "Product of Comparison" formulas
- Replacing IF() with alternative, less complex solutions for conditional logic
- Handling complex, multi-step conditions
- Simplifying date-sensitive logic
- Implementing conditional formatting to identify errors, mismatches, duplicates
- Logical expressions in array formulas
- Alternatives to AND() and OR()

## Lookup and Referencing Formulas

- Use of VLOOKUP(), HLOOKUP(), XLOOKUP(), LOOKUP()
- Use of MATCH(), XMATCH(), INDEX() to more flexibly reference data and ranges
- Exact match & threshold match type lookups & when to use each, setting search order and search method
- Dealing with discontinuities and conditional logic using lookup tables
- Use of OFFSET(), INDIRECT(), INDEX() and CHOOSE() to dynamically reference ranges
- Building dynamic names to be sensitive to data, including UNIQUE() & SEQUENCE()
- Use of ROW(), COLUMN(), ROWS(), COLUMNS(), ADDRESS() and CELL() in referential formulas to locate values
- Use of & issues with GETPIVOTDATA()
- Using choices in drop-down boxes to dynamically access data / settings / assumptions
- Alternatives to lookup formulas

## Workbook Linking

- Building safe links using range names & the intersection operator
- Understanding link resolution
- Locating & removing invalid links

## Working with Dates & Times

- Understanding Excel's date & time functionality
- Date & time functions available in Excel
- Building date & time triggers for models
- Apportionment between financial periods
- Sensitivities dependent upon action dates & timing of transactions
- Robust solutions to deal with common but difficult calendrical calculations - Simplifying date and time logic which is a common source of complexity in many models
- Calculating financial year, financial quarter, recurrent dates, maturities
- Forecasting cyclically
- Use of and issues with YEARFRAC()
- Date & time custom formatting & related issues
- Converting to & from date & time values

## Financial Functions

- Annuity cash flow functions PMT(), RATE(), NPER(), PV(), FV(), IPMT(), PPMT()
- Discounted cash flow functions IRR(), XIRR(), NPV(), XNPV()
- Statistical / forecasting functions SLOPE(), INTERCEPT(), RSQ(), TREND(), FORECAST(), FORECAST.ETS()

## Data Type & Conversion Functions

- Information functions explained incl. ISBLANK(), ISNUMBER(), ISTEXT()
- Type conversion functions
- Coercion of data type by operator, function argument

## Summary & Analysis using Formulas

- Formulas to identify & analyse matched, duplicate, missing or unique entries
- Functions including SUMIF(), SUMIFS(), COUNTID(), COUNTIFS(), and optimising
- Summarising data using standard formulas
- Summarising data using array formulas, including SUMPRODUCT()
- Ranking & sorting data using formulas
- Transposing ranges using array formulas
- Basic statistical functions
- Building frequency distributions with FREQUENCY()

## Summary & Analysis using Tools

- PivotTables & accessing summarised data from pivot tables for reporting
- PivotTable settings
- Building calculated fields in PivotTables
- Building calculated items in PivotTables
- Consolidation via PivotTables (Power Query)
- Data subtotalling
- Outline & associated settings and shortcuts
- Filtering & sorting records
- De-duplicating data
- Working with text, CSV and data files
- Parsing text ranges
- Icon sets, colour scales & data bars using conditional formatting

## Sample Reports & Financial Techniques

- Cyclic cash forecasts
- Forecasting costs and cash flows using S Curves
- Discounted Cash Flow calculations
- Financial distress forecasting using Z scores
- Monitoring financial performance using the DuPont model
- Developing a planning model including assumption tables & incorporating changes
- Building three-way models – integrated Profit & Loss Balance Sheet & Cash Flow

## Formatting

- Understanding & using styles to build effective, manageable workbooks
- Key settings to improve workbook layout
- Using custom number formatting to control appearance of models
- Advanced custom formatting
- Conditional formatting
- Understanding Office themes
- Page layout settings
- Using and formatting shapes
- Working with linked text objects

## Interface Design

- Data validation & creating in-cell drop-down boxes
- Utilising values from in-cell drop-down boxes & applying default values
- Embedded controls for managing dynamic lists, based on user selections
- Use of Styles for consistent layout & aiding end-user interaction

## Model Deployment and Security

- Housekeeping & security
- Worksheet & workbook security
- Issues around distribution of models
- Understanding styles
- Development of templates, incorporating standard content & predefined styles
- Hyperlink Index worksheet for a standardised index to workbook content
- Template title pages

## Working with Lists and Filling Ranges

- Understanding AutoFill
- Sorting shortcuts
- Re-ordering rows and columns
- Pick from list keys and settings
- Autocomplete settings
- Paste special settings
- Excel Tables & Column Formulas

## Formula Errors

- Understanding the Excel error types, including new #SPILL! error
- Errors generated by ambiguous references
- Identifying & handling formula errors
- Identifying & handling data type errors
- Use of built-in functions to bypass errors rather than tortuous nested IF() functions
- Errors aren't all bad – making use of errors
- ISNA(), ISERR(), ISERROR(), ERROR.TYPE(), IFERROR(), IFNA() to manage errors
- Use of VALUE(), TEXT(), N(), T(), SUM() & information functions to avoid data type mismatch errors
- Formatting errors
- Reducing the complexity engendered by formula errors, alternative approaches
- Background error checking
- Building in a checklist

## User Errors

- Building-in cross checks to identify data inconsistency & user errors
- Building-in defaults to avoid errors
- Identifying errors using conditional formatting & styles
- Useful custom formatting to present cross-checks & errors
- Identifying out-of-order lookup tables

# Typical Course Schedule

Every course is different, and the flow of material changes in response to classroom questions, flow of material and customisation for in-house courses. However, the typical planned schedule is as follows…

### Day 1

- Case Study: Sales Forecasting model by region per page, consolidated totals and averages
  - Fundamental techniques for controlling Excel, navigating & selecting via mouse & keyboard shortcuts
  - Building robust formulas
- Case Study: Loan Repayment Calculator
  - Address modes in Excel - working with Mixed, Relative and Absolute addresses
  - Data Tables introduced
- Case Study: Simple Profit & Loss Model
  - Segregation of model
  - Layout of assumptions
  - Use of names in models working with names in models
  - Breaking down complexity
  - Handling conditional results
  - Use of switch and trigger formulas

### Day 2

- Case Study: Simple Profit & Loss Model cont'd
  - Building-up forecasting calculations - sensitive to triggers & switches
  - Alternatives to IF() functions
  - Use of "Product of Comparison"
  - Adding scenarios to an existing model
  - Scenario sensitivity report with Data Tables
- Workshop Exercise 1
- Review & Presentation on Workshop Exercise 1

### Day 3

- Case Study: Summary Reports
  - Introduction to Lookup Functions
  - HLOOKUP(), VLOOKUP(), XLOOKUP(), LOOKUP()
  - Introduction to Conditional Functions
  - SUMIF(), SUMIFS(), COUNTIF(), COUNTIFS(), wildcard matching, date range matching
- Case Study: Building a Dashboard
  - Date and selection sensitive formulas
  - Introduction to charting
  - Use of embedded charts
  - Conditional formatting for performance indicators
- Workshop Exercise 2
- Review & Presentation on Workshop Exercise 2
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### Day 4

- Case Study: Revised Sales Forecast
  - Dynamically retrieving drivers & assumptions
  - Use of MATCH() & INDEX() to streamline lookups
  - Formulas sensitive to Sheet Names
- Case Study: Fixed Asset Register & Depreciation Forecast
  - Date sensitive calculations
  - Simplifying formula layout
  - Generating asset register using Data Table
  - Allowing for asset acquisition and disposal scenarios
  - Forecasting depreciation and asset balance movements for modelling
- Case Study: Cash Requirements Forecasting
  - Date sensitive calculations
  - Forecasting cyclic payments
  - Including conditional (scenario-based) flows
- Case Study: DCF Modelling and Investment
  - Introductions to financial functions
  - Modelling sensitivity to key assumptions
- Workshop Exercise 3
- Review & Presentation on Workshop Exercise 3

### Day 5

- Case Study: Three-way Model
  - Layout for two-dimensional (time variable inputs)
  - Managing two-dimensional scenarios
  - Date sensitive triggers
  - Balance Sheet assumptions
  - Forecasting Balance Sheet movements from trading & P&L results
  - Deriving the Balance Sheet
  - Deriving the Source & Application of funds
  - Deriving movements in debt
  - Handling circularity in interest earned / paid
- Workshop Exercise 4
- Review & Presentation on Workshop Exercise 4

### Day 6

- Case Study: Linked Workbooks Summary
  - Use of names to make links robust
  - Use of MATCH() & INDEX() in linking
- Final Assessed Workshop

## Workshop Exercises

- A set of review exercises are worked at regular intervals throughout the course that require the students to work in groups to implement the knowledge gained in solving the problems set.
- Commentaries and sample solutions are provided to the students for the review exercises. The results of these exercises are critiqued in class & alternative approaches to solving these problems are canvassed.
- Final assessment (optional for in-house courses) is based upon a longer workshop during which the students working in groups demonstrate their knowledge & analysis skills through solving a set of problems based around the materials covered. Note: Sample solutions and commentaries are not provided for the assessed questions.

## Excel Version

- The course materials are fully compatible with all versions of Excel from Excel 2013 to Excel 2019 (Office 365). Version specific instructions are given where these vary between versions.
- Public courses are conducted using Excel 2019 (Office 365) desktop version.
- Some keyboard shortcuts taught are not available in the Macintosh versions of Excel but all formulas and techniques are applicable to the Macintosh.

## Course Materials

- The course materials include a 300+ page course text
- Access to online ready reference
- Online lectures and videos to support the materials presented
- A full set of blank and worked sample workbooks as well as a number of reference documents are available for download online.

## Public Courses

Public offerings of the Financial Analysis Certificate are available in Sydney. For details, visit our web site (www.uts.edu.au/future-students/business/business-study-areas/accounting/continuing-professional-education/financial or bit.ly/uts-fac) or call +61 (0) 417-777-750.

The Sydney venue is a well-equipped computer laboratory in the Short Courses complex at Building 10, Broadway. Courses are offered in Sydney three times a year in February/March, August/September and October/November.

## Private Courses

In-house offerings of the Financial Analysis Certificate can be arranged anywhere in Australia and we can assist with the hire of suitable training facilities if they are not available in-house. For a quotation or to discuss your particular needs, call +61 (0) 417-777-750.

## About the Course Author and Lead Presenter



Following an early career in both public and commercial accounting, James Clarkson has more than twenty-five years' experience as a presenter of professional programs and more than thirty consulting & model building for corporate clients.

He has gained wide experience in model & analytical report design & development and also has wide experience in application development using Microsoft Office (especially Excel), Visual Basic & Visual Basic for Applications (VBA).

He is an outstanding educator, demonstrating the ability to clearly explain difficult and technical subjects and consistently rates above 90% for satisfaction across a number of measures on student evaluations.

**www.clarksonitt.com**