PETROSYNC

Application of VBA & Advanced Excel to Financial Modeling & Analysis

Proficiency in the use of VBA & to refresh more advanced aspects of Excel

8th June 2015 - 11th June 2015 | Kuala Lumpur, Malaysia

Petrosync Distinguished Lecturer
Dr Michael Rees
Director and Founder of Financial Modelling in Practice Limited
MBA (Distinction), INSEAD and PhD (Mathematics), Oxford University

- Over 20 years business and finance experience across oil and gas, energy, resources, engineering and other sectors

- Previously a Vice-President at J.P. Morgan, Principal at Mercer Management Consulting (now Oliver Wyman) and European Director of Training and Consulting for Palisade Corporation

- Europe's most experienced trainer and consultant in **@RISK®** and other **Palisade** products, having trained or consulted over 2000 people in the use of simulation and related tools to support decision-making through risk modelling and optimisation.

- Delivered training courses and consulted for many oil and gas companies in Europe, North America and Asia, in financial modelling, risk modelling and related topics.

- Past clients include Shell, Statoil, BG, Cairn, Dong, Dana, Addax, Talisman, Oxy, Petrofac, Tullow and others.

- Author of **" Financial Modelling in Practice: A Concise Guide for Intermediate and Advanced Level "**

Testimonials

" I have never experienced such a valuable financial modeling training as yours. It is a pleasure to contribute to a testimonial. I will recommend you to whomever I encounter looking for top-notch quality ! "

"Dr. Rees brings original and most valuable insight … I have been most fortunate to have consulted with such a unique individual … It has assisted me in getting more value out of my models than I would ever have imagined."

"Mike has both excellent theoretical and practical background in risk analysis. The course went far beyond the use of the software itself and really provided crucial insight into model building and risk analysis. This provides a full set of perspective in a very limited time: a very motivating session and a truly high value-for-money investment"

"Thank you for a very good introduction to @Risk and for many other enlightening insights into the world of simulation and risk analysis. We hope to see you again in connection and would thoroughly recommend your course to any of our colleagues who are even remotely considering using Palisade's software."

Course Overview

Many analysts and modellers develop a high level of competence in the use of Excel, but often find that they have a lack of awareness and capability around extending their skills to VBA (macros).

The use of VBA in the modelling of oil and gas sector is often particularly beneficial, and sometimes a necessity:For example, macros are often found in standard applications, such as project finance models, as well as to automate sensitivity-, scenario-, simulation- and optimisation-procedures that arise frequently in the sector. In addition, macros can be extremely useful in data manipulation: including where repeated manipulation of data is required, where consolidation from multiple data sources is needed (allowing larger datasets than a single workbook would permit, for example), or where data is taken from external sources before being manipulated in Excel.User-defined functions can also be used to create flexible model structures and layouts, including mechanisms to rapidly include or delete assets or data sets in a model, for example.

This 4-day course is aimed at experienced Excel practitioners who wish to become proficient in the use of VBA, as well as to refresh some of the more advanced aspects of Excel. The course focuses on learning through hands-on exercises. Day 1 is used to review advanced Excel modelling topics and functions, whilst Days 2-4 are focused on using VBA in a variety of analysis, modelling and decision-support contexts.

* This program is limited to 15 seats only.

Course Objectives

- **CREATE** more effective, flexible and powerful models using VBA(macros) and advanced Excel.
- **DEVELOP** an in-depth knowledge of a wide range of advanced functions in Excel.
- **RECOGNIZE** modeling situations where the use of VBA would be effective & worthwhile.
- **CONSTRUCT** highly flexible, robust and transparent models that follow best practice principles
- **CREATE a** solid basis to write VBA code
- **ANALYZE** and **MANIPULATE** data sets efficiently and able to **CONSOLIDATE** data from different workbooks.
- **GAIN** insight into alternative methods and best practises in model design
- **GAIN** exposure to a wider range of applications in financial modeling
- **LEARN** a variety of options ways to design, structure, layout and build models

Specially Designed for

This course is designed for staff involved in Business & Strategic Planning, Planning, Development & Commercial, Budgeting & Forecasting

- Business & Strategic Planners
- Planning, Development & Commercial Analysts
- Budgeting & Forecasting Staffs
- Financial Analysts
- Petroleum Economists
- Risk Managers
- Business Analysts
- Portfolio Managers

Prerequisites

Participants are expected to have a sound knowledge and understanding in the use of Microsoft Excel and will be required to bring a laptop computer with Microsoft Excel 2007 or 2010, and trial version of DecisionToolsSuite from Palisade installed.

Program Schedule

Time	Activity
08:00 – 09:00	Registration (Day1)
09:00 – 11:00	Session I
11:00 – 11:15	Refreshment & Networking Session I
11:15 – 13:00	Session II
13:00 – 14:00	Lunch
14:00 – 15:30	Session III
15:30 – 15:45	Refreshment & Networking Session II
15:45 – 17:00	Session IV
17:00	End of Day

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DAY 1 Setting the Scene for VBA: Recap of Advanced Excel Functionality

Introduction & Course Overview

* Recap of core modeling principles
* Model formulation, design and best practices (structure, layout, formatting, named ranges, circular references)
* Distinguishing and sensitivities, scenarios risks, uncertainties and optimization situations
* General limitations of Excel and the key uses of VBA within financial modeling (overview)

Recap of key advanced function areas

* Lookedup functions
* Text, date and information functions
* Array, statistical and database functions

* Hands-on exercises,

- Breakeven analysis and Goal Seek
- Sensitivity and scenario analysis; DataTables and basic lookup functions
- Optimisation modelling; Solver; portfolio composition, transfer-pricing; curve fitting
- Formulae referring to variable-sized ranges; dynamic range
- Reversing and manipulating data
- Resolving circular references iteratively
- Cost allocation with array functions
- Implementing multiple database queries
- Creating models fed by multiple data sheets
- Calculation of taxes payable with various tax bands
- Calculation of rank correlation of two series
- Calculation of semi-deviation of a data set
- Calculation of an inverse (percentile) function for a probability distribution

*Potential uses and benefits of VBA approaches
*Q&A, Discussion, Day 1 Close

DAY 2 Getting Started with VBA for Financial Modeling

*The need for VBA and demo of pre-built examples
* Hands-on exercises:

- Simple recording example (e.g. code to copy ranges)
- Running code and stepping through line-by-line; use of break points
- Adapting recorded code through direct writing of code
- Use of named ranges
- Creation of buttons to run code

* Introduction to syntax; object orientation, ways to refer to ranges
*Creation of simple Input and Message Boxes
*Controlling execution and related topics: Use of With, Set, and Conditional statements
*Comments, indenting and formatting, data types, variable declaration, and other best practices

* Hands-on exercises:

- Comparing assignment statements with copying of values
- Recording and adapting the running of GoalSeek for breakeven analysis
- Using macros to run sensitivity and scenario analysis
- Running multiple database queries using a macro
- Using VBA to resolve circular references
- Embedding one procedure within another

* Introduction to event code

- Code that runs automatically when a cell is changed
- Forcing a Disclaimer to be read, and running procedures at workbook open and close

DAY **3**   Using VBA for Data Manipulation and Consolidation

* Efficient manipulation of data using VBA: An introduction

* Hands-on exercises:
- Reversing the time axis of a data set (Single and multi-columned data)
- Removal of duplicates
- Removal of empty rows
- Division of quarterly into monthly data
- Automated sorting of data sets

* Hands-on exercises: Consolidation into a single sheet of data in several worksheets
-Overview of possible approaches
-Worksheet functions and VBA functions
-Creating a list of sheet names

*Hands-on exercise:Consolidation into a single sheet of datainspecified sheets of separate workbooks
*Q&A, Discussion, Day 3 Close

DAY **4**   User-defined Functions, SImulation and Optimisation
* Benefits and examples of user-defined functions

* Hands-on exercises: Simple examplesof writing user-defined functions:
- Replication of IFERROR function
- Summing absolute errors
- Rank correlation and semi-deviation
-Compound growth rates
-Calculation of an inverse (percentile) function for a probability distribution

*Debugging functions: varying the position of the return statement, stepping through from a sub-routine etc.
* Hands-on exercises: More complex examples
- Time-shifting
- Functions referring to sheet names (referring to, manipulating data on specified sheets, or consolidating across sheets)
-Combination of user-defined functions (e.g. time-shifting with sheet names)
*Demo of more complex examples
-Generalised time-shifting and reallocation
-Black-Scholes' valuation of European options
-Portfolio optimisation using Huang-Litzenberger formula

*Impact of VBA on possible model layout and data structures
-Achieving distributed data structures using VBA tools
-Advantages and disadvantages compared to pure Excel approaches

Petrosync Quality

Limited Attendees
The course has limited seats to ensure maximum learning and experience for all delegates.

Certificate of Attendance
You will receive a Certificate of Attendance bearing the signatures of the Trainer upon successful completion of the course. This certificate is proof of your continuing professional development.

Interactive Training
You will be attending training designed to share both the latest knowledge and practical experience through interactive sessions. This will provide you with a deeper and more long-term understanding of your current issues.

High Quality Course Materials
Printed course manual will provide you with working materials throughout the course and will be an invaluable source of reference for you and your colleagues afterward.

*Using VBA for Simulation: Coreconcepts
  * Hands on exercise:
    -Uncertainty modelling in a project's cash flows
    -Passing values to and from Excel ranges and code
    -Creation of random numbers, repeated recalculations, storing and analysing results
    -Saving and clearing of results; insertion and deletion of sheets
    -Creation of percentile and inverse functions; other techniques to create samples
    (search and lookup procedures); user-defined functions to create distribution samples)

*Optimisation Modelling using Solver within a loop (time-permitting or demo)
  * Hands on exercise:
    -Setting up a Markowitz mean-variance (portfolio optimisation) calculation in Excel , and recording
    the use of Solver to generate a single optimum solution
    -Generating the Markowitz efficient frontier through repeated calculations
    -Automating the resetting of constraints or other criteria

Petroleum Accounting & Finance Training Courses (May - November 2015)

DATE	COURSE TITLE	INSTRUCTOR
18th - 22nd May	Crude Oil Trading & Price Risk Management	David Ford
17th - 18th Aug	Introduction to Oil & Gas Accounting	Ahmed Badawy
19th - 21st Aug	Practical Accounting in JV and PSC	Ahmed Badawy
29th - 2nd Oct	Advanced Financial Modelling for Oil & Gas	Michael Rees
5th - 8th Oct	Risk and Simulation Modeling for Oil and Gas Applications	Michael Rees
16th - 17th Nov	Introduction to Oil & Gas Accounting	Ahmed Badawy
18th - 20 Nov	Practical Accounting in JV and PSC	Ahmed Badawy

For a copy of PetroSync's Training Calendar for 2015, please visit : http://petrosync.com/PETROSYNC_-_Catalog_Training_Yearly_Version_-_2015_-_1.pdf

WHY YOU SHOULD ATTEND PETROSYNC'S EVENTS

- To ensure that all objectives of the course matches yours, all PetroSync programs are developed after intensive and extensive research within the industry

- PetroSync programs focus on your immediate working issues to ensure that you are able to apply and deliver immediate results in real work situations

- Application and implementation of industry knowledge and experience are the drivers for our course design, not theoretical academic lectures

- PetroSync training focuses on practical interactive learning tools and techniques including case studies, group discussions, scenarios, simulations, practical exercises and knowledge assessments during the course. Invest a small amount of your time to prepare before attending the course to ensure maximum learning

- PetroSync follows a rigorous selection process to ensure that all expert trainers have first-hand, up-to-date and practical knowledge and are leaders of their respective industrial discipline

Petrosync Distinguished Lecturer

Dr Michael Rees
Director and Founder of Financial Modelling in Practice Limited
MBA (Distinction), INSEAD and PhD (Mathematics), Oxford University

Dr. Michael Rees is an independent expert in quantitative decision-support and risk modelling. He provides quantitative decision-support to senior executives who are facing major decisions on strategy, financing, business structure, transactions, valuation and portfolio optimisation. He also leads training courses in financial modelling, risk modelling and related topics for client staff of all levels, and is Europe's most experienced trainer and consultant in @RISK® and other Palisade products, having – since 2003 – trained or consulted with over 2000 people in the use of simulation and related tools to support decision-making through risk modelling and optimisation.

Michael has over 20 years business and finance experience, including 10 years as an independent consultant. As a Principal at Mercer Management Consulting (now Oliver Wyman) until 2000 he led major projects in the area of strategy, organization and change (such as market and competitive analysis, partner and acquisition assessments, performance measurement and improvement, cost reduction, outsourcing, process redesign, restructuring and change management). He later worked as a Vice-President at J.P. Morgan, where he was involved in the development of financial forecasts, conducting valuations, publishing reports and advising fund managers and hedge funds. He was ranked as a top City analyst by all the companies under his direct coverage and received a vote in the Institutional Investor 2002 survey.

Much of his work is focussed in the oil and gas, energy, resources and engineering sectors, but he is also frequently asked to assist clients in private equity, finance, insurance, as well as health care and other industries.

Michael has a Doctorate in Mathematical Modelling and Numerical Algorithms, and a B.A. with First Class Honours in Mathematics, both from Oxford University in the UK. He also has an MBA with Distinction from INSEAD in France. He has studied for the Certificate of Quantitative Finance, graduating top of the course for on-going class work and also receiving the Wilmott Award for the highest final exam mark.

Michael's Latest Publication

He is the author of "Financial Modelling in Practice: A Concise Guide for Intermediate and Advanced Level " (John Wiley & Sons, 2008), which is a practical, comprehensive and in-depth guide designed to cover Excel modelling, financial statement modelling, valuation, risk analysis, real options, and VBA coding for practical applications in business, economic analysis and finance that are relevant to facilitate the construction of robust and readily understandable models.

IN-HOUSE SOLUTIONS
SAVE COST • IMPROVE PERFORMANCE • REDUCE RISK

PetroSync understands that in current economic climate, getting an excellent return on your training investment is critical for all our clients. This excellent training can be conducted exclusively for your organization. The training can be tailored to meet your specific needs at your preferred location and time. We will meet you anywhere around the globe.

If you like to know more about this excellent program, please contact Jerry Tay (Conference Director) on +65 6415 4502 or email jerry.t@petrosync.com

COURSE DETAILS

Title : Applications of VBA & Advanced Excel to Financial Modeling & Analysis
Date : 8th - 11th June 2015
Location : Kuala Lumpur, Malaysia

INVESTMENT PACKAGES

Please circle the package that you are attending!

Investment Package	Deadline	FULL MASTERCLASS
Standard Price	5th June 2015	SGD $ 4,995
Early Bird Offer	8th May 2015	SGD $ 4,795
Group Discount (3 or more Delegates)	5th June 2015	10% discount for groups of 3 registering from the same organization at the same time

Group Discount is based on Standard Price
* To enjoy the promotion & discount offer, payment must be made before deadline
* For 7 or more delegates, please inquire for more attractive package.
* Prices include lunches, refreshments and materials. Promotion & discount cannot be combined with other promotional offers.
* Important: Please note that registration without payment will incur a SGD 200 administration fee.

DELEGATES DETAILS

1st Delegate Name _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐ Others ☐
Direct Line Number: _____ Email: _____
Job Title: _____ Department: _____
Head of Department: _____

2nd Delegate Name _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐ Others ☐
Direct Line Number: _____ Email: _____
Job Title: _____ Department: _____
Head of Department: _____

3rd Delegate Name _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐ Others ☐
Direct Line Number: _____ Email: _____
Job Title: _____ Department: _____
Head of Department: _____

INVOICE DETAILS

Attention Invoice to: _____
Direct Line Number: _____ Fax: _____
Company: _____ Industry : _____
Address: _____ Postcode: _____
Country: _____ Email: _____

Please note:
- Indicate if you have already registered by Phone ☐ Fax ☐ Email ☐ Web ☐
- If you have not received an acknowledgement before the training, please call us to confirm your booking.

PAYMENT METHODS

☐ By Credit Card :
Please debit my credit card: ☐ Visa ☐ MasterCard ☐ AMEX Security Code: ☐☐☐☐
Card Number: ☐☐☐☐ – ☐☐☐☐ – ☐☐☐☐ – ☐☐☐☐ Expiry Date: ☐☐☐☐
Name printed on card: _____

☐ By Direct Transfer : Please quote invoice number(s) on remittance advice
PetroSync Global Pte Ltd Bank details:
Account Name: PetroSync Global Pte Ltd
Bank Name : DBS Bank Ltd
Bank Code : 7171 • Bank Swift Code : DBSSSGSGXXX • Branch code : 288
Account No : • SGD : 288-901898-0 • USD : 0288-002682-01-6
Bank Address : 12 Marina Boulevard, Level 3. Marina Bay Financial Centre Tower 3. Singapore 018982

All bank charges to be borne by payer. Please ensure that PetroSync Global Pte Ltd receives the full invoiced amount.

PROGRAMME CONSULTANT

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TERMS AND CONDITIONS

DISCLAIMER
Please note that trainers and topics were confirmed at the time of publishing; however, PetroSync may necessitate substitutions, alterations or cancellations of the trainers or topics. As such, PetroSync reserves the right to change or cancel any part of its published programme due to unforeseen circumstances. Any substitutions or alterations will be updated on our web page as soon as possible.

DATA PROTECTION
The information you provide will be safeguarded by PetroSync that may be used to keep you informed of relevant products and services. As an international group we may transfer your data on a global basis for the purpose indicated above. If you do not want us to share your information with other reputable companies, please tick this box ☐

CANCELLATION POLICY
You may substitute delegates at any time as long as reasonable advance notice is given to PetroSync. For any cancellation received in writing not less than fourteen (14) working days prior to the training course, you will receive **credit voucher** less a SGD $200 administration fee and any related bank or credit card charges.

Delegates who cancel less than fourteen (14) working days of the training course, or who do not attend the course, are liable to pay the full course fee and no refunds will be granted.

In the event that PetroSync cancels or postpones an event for any reason and that the delegate is unable or unwilling to attend in on the rescheduled date, you will receive a credit voucher for 100% of the contract fee paid. You may use this credit voucher for another PetroSync to be mutually agreed with PetroSync, which must occur within a year from the date of postponement.

PetroSync is not responsible for any loss or damage as a result of the cancellation policy. PetroSync will assume no liability whatsoever in the event this event is cancelled, rescheduled or postponed due to any Act of God, fire, act of government or state, war, civil commotion, insurrection, embargo, industrial action, or any other reason beyond management control.

CERTIFICATE OF ATTENDANCE
A minimum of 70% attendance is required prior issuance of PetroSync's Certificate.

DETAILS

Please accept our apologies for mail or email that is incorrectly addressed.
Please email us at registration@petrosync.com and inform us of any incorrect details. We will amend them accordingly.

CHARGES & FEE(s)

- For Payment by Direct TelegraphicTransfer, client has to bear both local and oversea bank charges.

- For credit card payment, there is additional 4% credit card processsing fee.

Confirmation

I agree to PetroSync's terms & conditions, payment terms and cancellation policy.

Authorized Signature : _____

PAYMENT TERMS : **Payment is due in full at the time of registration. Full payment is mandatory for event attendance.**