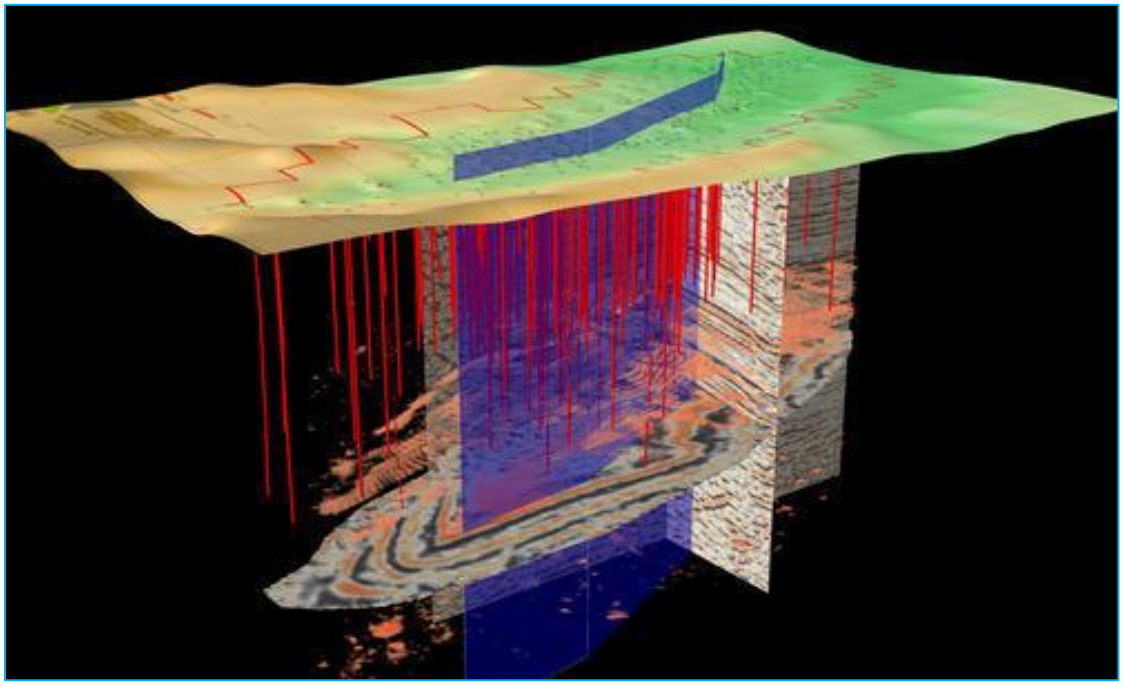
Tel No:+97126654546 | Fax No:+97126654182 | Email: aisha@cmc-me.com | www.cmc-me.com



DE410:
Geomodelling

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Training Description:

The range of scales affecting flow behavior is wide, ranging from the microscopic which includes: mineralogy and clay content (Vshale); pore space geometry (Porosity, Kh, Kv, Sw and Pc) to the large scale which includes: depositional environments, reservoir architecture, trapping mechanism, field geometry and faults, all of which affect connectivity and must be integrated with the microscopic parameters and captured into a geologically coherent gridblock system that it is flow simulated it can replicate accurately the flow behavior at each well and for the field as a whole. Particular emphasis is given on fluid contacts and transition intervals.

The training course is split equally between teaching classes in a tutorial. Each participant/team is/are required to build a static model from scratch, which she/he will have to test in a flow simulator. Using this model, participants will have to determine the in place and recoverable resources.

On the last day of the training course, each participant or team will be given 20 minutes to present their evaluation, results and conclusions. A dataset, together with detailed written instructions and expected deliverables are given while guidance and support are provided throughout the tutorial.

This geomodelling workshop aims to give greater insight into the building of static geomodels that best replicate the true flow behavior of wells and fields, and gain a better understanding of the complexity of reservoir geology, particularly the large number of parameters and the difficulty of capturing the key heterogeneities that affect flow behavior.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ The main reasons and objectives of geomodelling & flow simulation
- ✓ The workflow and each step in constructing a geomodel
- ✓ Introductory Geostatistics and its application in constructing geomodels
- ✓ Data analysis and data integration in geomodelling workflow
- ✓ Uncertainties in geomodelling
- ✓ In Place Resource Estimates
- ✓ Reserves and Resources definition and how they are estimated
- ✓ Build their own Static model from Scratch
- ✓ Test their Static Model in a Flow Simulation.
- ✓ Assess the Resources of their constructed Model
- ✓ Present results and conclusions of tutorial before Peers

Training Designed for:

This course is intended for Geoscientists (Geology, Geophysics & Petrophysics) and Reservoir & Petroleum Engineers.

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request." (This hands-on, highly-interactive training includes simulator, real-life case studies and exercises).

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This training course is available upon request in English or Arabic. Content, location and duration can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- Intro to Geomodelling & Reservoir Characterization
- Geostatistics
- Geomodelling Workflow
- Structural Modelling
- Reservoir Zonation
- Gridding
- Rock Typing
  - Petrophysical Groups
  - Lithofacies & Log Typing

DAY TWO:

- Facies Modelling
  - Pixel & Object Based Models
  - Multipoint Modelling Financial & Cost
  - Geobody Modelling
- Petrophysical Modelling
  - Cut-Offs
  - NTG & Porosity Modelling
  - Kh & Kv Predictor & Modelling
  - Sw Modelling

DAY THREE:

- Modelling Techniques
- SIS, SGS, SGS, STGS Simulation
- Collocated Kriging
- Uncertainty in Modelling

DAY FOUR:

- Dynamic Simulation
  - Numerical Flow Simulation
- Volumetric Estimates
  - Fluid Contacts (FWL vs. OWC)
  - Deterministic & Probabilistic Calculation (Monte-Carlo)
- Resource and Reserves
  - World Resources & Production
  - Resources/ Reserves Definitions
- Fluid Development Plan (FDP)
  - Workflow
  - Gas Handling

- Health, Safety & Environment (HSE)

DAY FIVE:

- ❖ Field development Plan (FDP)
  - Workflow
  - Gas Handling
  - Health, Safety & Environment (HSE)
- ❖ Tutorial
  - Complete & Present Results
  - Deterministic & Probabilistic Calculation (Monte-Carlo)
- ❖ Course Conclusion
- ❖ POST-TEST and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department