Course RM4: Production Forecasting for Reserves Estimation and Performance Assessment in both Conventional and Unconventional Reservoirs

Throughout the life of an oil or gas well or reservoir, a variety of production forecasting methods may be used in order to estimate reserves. Early on, one uses volumetric or analogues to forecast production. As production and pressure data are gathered, decline curves, material balance, analytical models and reservoir simulation methods may be used. Also for shale oil and gas assets, it is important to assess the viability of hydraulic fracture design through proper estimation of Estimated Ultimate Recovery (EUR). This course presents a set of guidelines and best practices for using non-simulation techniques in conjunction with reserves evaluations and reservoir/well performance assessment. It is intended to remove some of the discrepancies and inconsistencies that the speaker has observed in many reserves and field reviews that he has audited.

Contents:

- o Best Practices in Conventional reservoirs
    - o Introduction to Evaluation Methodologies
    - o Material Balance Application
    - o Decline Curve Analysis
    - o Analytical Methods
    - o Use of Analogue Data
    - o Reservoirs under Waterflood or with an Active Aquifer
- o Application of DCA and Analytical models to Unconventional resources
    - o Rate Transient Analysis
    - o Forecasting methods
- o Tools and techniques (typical spreadsheets to help with the assessments)