

Practical Reservoir Simulation

COURSE DESCRIPTION

The course introduces the student to the basic theory and practices in reservoir simulation. The formulation of equations governing single-phase and multi-phase flow in porous media are discussed. The use of finite difference methods to solve ordinary and partial differential equations are then presented followed by discussion of various techniques to solve systems of linear equations. Finally, the concepts presented are demonstrated through applications using any commercial simulator.

DISCIPLINE

Reservoir
Engineering and
Petrophysics

COURSE DURATION

5 Days

DELIVERY METHOD

In-house

COURSE CONTENTS

- Definition of Reservoir Simulation and its objectives
- Types of Reservoir Simulators
- Formulation of fluid flow equations
- Darcy's Law
- Continuity equation
- Equations of state
- Single-phase flow equations
- Multi-phase flow equations
- Auxiliary relationships
- Finite difference formulations
- Discretization in Space
- Discretization in Time
- Explicit Formulations
- Implicit Formulations
- Applications of finite difference techniques
- Applications and exercises using a commercial simulator

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