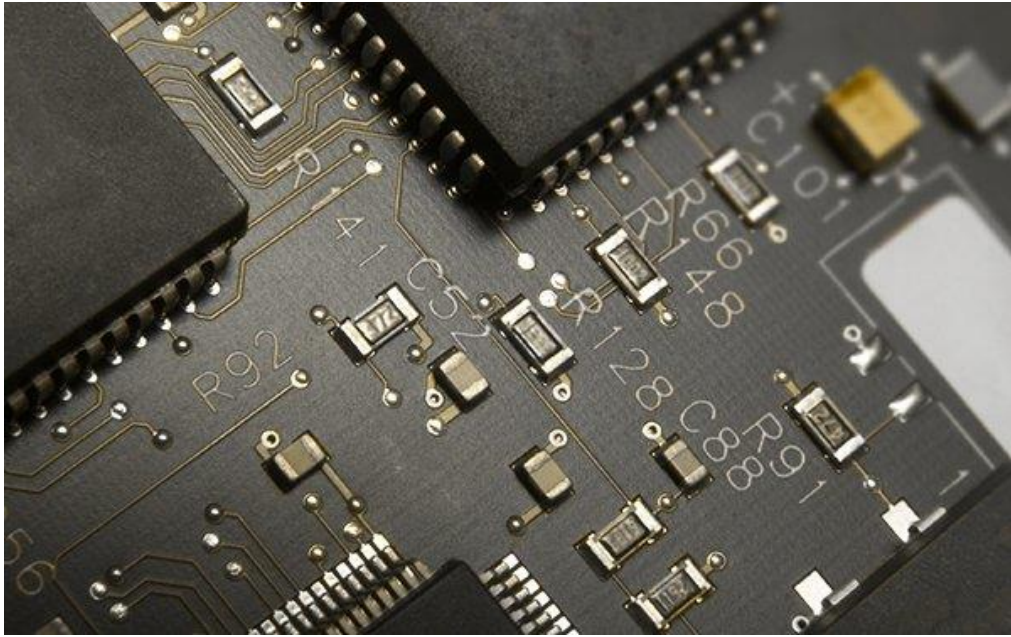




DE1601

Production Optimization Using Nodal Analysis

Course Introduction:

This course is designed to provide the best understanding of all aspects used in Nodal analysis approach starting from the fundamentals and up to the parameters used for overall production system optimization. The course will address main flow correlations through the total production system such as reservoir inflow, tubing vertical flow, flow line horizontal flow and flow through surface chokes. The course will clarify the role of Nodal analysis approach to optimize different production system parameters such as flow line size, surface choke size, artificial lift design & suitable installation time in addition to effect of well stimulation.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ Understand the fundamentals of Nodal analysis approach
- ✓ Gain sufficient knowledge on reservoir inflow correlations
- ✓ Gain sufficient knowledge on tubing vertical flow correlations
- ✓ Gain sufficient knowledge on flow line horizontal flow correlations
- ✓ Gain sufficient knowledge on surface flow choke correlations
- ✓ Raise their knowledge on the role of Nodal analysis in production system optimization
- ✓ Understand the impact of Nodal analysis on artificial lift design & installation time

Who Should Attend?

This course is intended for junior and experience production, reservoir, operation, petroleum and field engineers in addition to other geoscientists who seeks to have more knowledge on production optimization using Nodal analysis approach.

Course Outline:

Day 1:

- Introduction
- Reservoir Production Process
- Reservoir Drive Mechanisms
- Reservoir Fluid Properties
- Reservoir Rock Properties
- Darcy's Law
- Well Production Performance

Day 2:

- Nodal Analysis Concept
- Inflow Performance Curve
- Outflow Performance Curve
- Inflow Performance Correlations
- Predicting IPR for Oil & Gas Wells

Day 3:

- Vertical Flow Correlations
- Horizontal Flow Correlations
- Factors Affecting Outflow Performance

Day 4:

- Importance of surface Chokes
- Multiphase Flow Choke Correlations
- Artificial Lift Design with Nodal Analysis

Day 5:

- Importance of Nodal Analysis on Production System Optimization
 - Stimulation Impact
 - Tubing Size Selection
 - Effect of Flow Restriction
 - Effect of Flow Line size
 - Effect of Well Completion
 - Depletion Impact

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test

- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

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

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 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

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