



OIL & GAS PRODUCTION TECHNOLOGY

Advanced Well Performance Analysis and Production Optimization by Nodal Analysis

ABOUT THE COURSE

Production optimization using system analysis approach became one of the most important tools to engineers who are responsible for finding the optimum operating parameters of oil and gas wells. Production optimization, considering the integrated petroleum production system has an important and, in many cases, key role for making operating decisions, production management and decreasing of total production costs. The course will provide an outstanding of system (NODAL) analysis, so the participants can use collected knowledge for practical problem solving. The course is designed to provide comprehensive approach, including the practical solving of the number of practical problems. The participants of this course will be able to apply optimization programs available on the market with full understanding and efficient use. Current oil Inflow Well Performance for various well type (vertical, slant and horizontal wells) for multizone reservoirs is be based on zone properties defined by PLT, Transient well test and production test.

DESIGNED FOR

Petroleum engineers with academic and practical experience; field operating engineers and geoscientists in the petroleum and natural gas industries.

YOU WILL LEARN

- How to analyze oil and gas production system
- Nodal concept and theory
- How to collect, evaluate and use production data to predict future system behavior
- What is required to recognize problems in petroleum system

COURSE OUTLINE

- The basic principles of oil and gas production
- Introduction to integrated production system
- Well completion effects on well inflow characteristics
- Hydrodynamic characteristic of oil and gas flow through perforations
- Well inflow performance relationship (IPR) for any well geometries and fluid type
- Comparative analysis of vertical, slant and horizontal well performance
- Gas condensate IPR using transient well test data
- Methods and procedures for production data analyzing (decline, reciprocal productivity index, time series analysis)
- Building of multilayer well flow performance model using all available data from the production and stimulation history, 3D simulation study, PLT and pressure gradient survey data
- Composite IPR of commingled production

- Fluid flow dynamics in well
- Composite model of fluid flow through the wellbore
- Well control and regulation-choke flow performance
- Oil and gas wells system analysis by using NODAL approach
- Network wells system analysis
- Artificial lift method selection
- Introduction to risk and economic analysis of production system
- Well performance modeling using analytical IPR models