

Scandinavian Academy Training Center

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Riyadh - Al Khaleej District - Sheikh Abdul Aziz Bin Abdul Rahman Bin Bishr Street - 13223 - Office No. 5 | P.O.BOX : 13224

Course: Flooding: A to Z of Best Practices

Code	City	hotel	Start	End	price	Language - Hours
OG-132SA	Abha	Hotel Meeting Room	2027-02-07	2027-02-11	12950 SR	En - 25

Why Choose this Course?

This course is designed to provide design aspects required for successful water flooding plus main reasons for failures. It presents a comprehensive coverage of analytical and applied aspects of water flooding including rock and fluid properties, theory, prediction methods of Stiles, Craig-Geffen-Morse, and Dykstra-Parsons, surface production facilities, and water flood problems and optimization. Water affects every stage of oilfield life from exploration through development, production, and finally to abandonment. The course covers process description, pattern selection, injectivity issues, and design's procedure. Furthermore, the course provides all components of produced water analysis and its required chemical treatment unit. It describes important measurements of water flooding to identify main problems, examine treatments and provide solutions. Actual field cases for optimum application will be explained with in-class exercises.

This course will feature:

- Basics rock and fluid properties controlling water flooding
- Selection a candidate reservoir for water flood and design criteria
- Components of water flood plant and stages of actual field case application
- Calculation of water flooding injectivity and conductance ratio
- Diagnostics, indicators, and surveillance
- Surface facilities and water flood plant
- Analytical and prediction methods: Stiles, CGM, and Dykstra-Parsons

What are the Goals?

- Describe and apply surface and subsurface water flooding
- Understand and apply analytical and prediction methods
- Choose a candidate reservoir for water flooding
- Identify various components and function of a water flooding plant
- Identify water flood problems and how to solve them

Who is this Course for?

- Petroleum Production & Reservoir Engineers
- Processing engineers & other discipline engineers
- Geologists & Petro physicists
- Engineers who are new to the profession
- Other individuals who need to know about water flooding

How will this be Presented?

This course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. The course is designed as a blended environment of presentation, class exercises, field application/ analysis and several industry videos showing all processes.

The Course Content

Day One : Reservoir Properties and Design Factors of Water Flooding

- Definition and history of water flooding
- Water flood performance measurements
- Water sources of sweep water, good water and bad water
- Important factors to consider in water flooding design
- Types of water flood patterns and selection of a flood pattern
- Important rock/fluid properties for reservoir engineering calculation

Day Two : Frontal Displacement Theory and Water Flooding Injectivity

- Analytical models: Buckley-Leverett and Welge methods
- Calculation of time to breakthrough and cumulative water injected
- Calculation of water flood injectivity and stages of water flooding
- Prediction methods: Stiles, Craig-Geffen-Morse, and Dykstra-Parsons
- Calculation of areal and vertical sweep efficiencies
- Main reservoir problems of water flooding project

Day Three : Problems/Solutions of Water Flooding

- Phenomena of water fingering and tonguing
- Casing, tubing or packer leaks and channel flow behind casing
- Moving oil-water contact and watered-out layer without crossflow
- Fractures or faults between injector and producer
- Calculation of critical rate for water coning
- Using reservoir simulation for water flood optimization

Day Four : Diagnostics, Monitoring, and Surveillance of Water Flooding

- Monitoring water flood techniques and used tools
- Diagnostics, indicators, and surveillance of water flooding
- Well Diagnostics for water control using different ways
- Recovery plot, production history plot, and decline-curve analysis
- WOR diagnostic plot plus shut-in and choke-back analysis
- Special diagnostics for Vertical Communication

Day Five : Water Control Solutions

- Mechanical solutions for water-control problems
- Chemical solutions and squeeze cement treatments
- Rigid gels for near wellbore shutoff of excess water
- Injector problems and risk assessments

- Field-wide considerations for water flooding
- An integrated approach for cost saving operations

The Scandinavian Academy for Training Center adopts the latest scientific and professional methodologies in training and human resource development, aiming to enhance the efficiency of individuals and organizations. Training programs are delivered through a comprehensive approach that includes:

- Theoretical lectures supported by PowerPoint presentations and visual materials (videos and short films).
- Scientific evaluation of participants before and after the program to measure progress and knowledge acquisition.
- Brainstorming sessions and practical role-playing to simulate real-life scenarios.
- Case studies tailored to align with the training content and participants work nature.
- Assessment tests conducted at the end of the program to evaluate the achievement of training objectives.

Each participant receives the training material (both theoretical and practical) in printed form and saved on a CD or flash drive. Detailed reports, including attendance records, final results, and overall program evaluations, are also provided.

Training materials are prepared professionally by a team of experts and specialists in various fields. At the end of the program, participants are awarded a professional attendance certificate, signed and accredited by the Scandinavian Academy for Training Center.

Program Timings: 9:00 AM to 2:00 PM

The program includes:

- A daily buffet provided during the sessions to ensure participants comfort.
- A closing ceremony on the final day to distribute certificates and celebrate participants achievements.
- **Note: All prices are exclusive of 15% Value Added Tax (VAT).**

Our Success Partners

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