



# PCE143

## Oil Production & Processing Facilities

## Course Introduction:

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The emphasis of this course is on oil production facilities - from the wellhead, to the delivery of a specification crude oil product, to the refinery. Both onshore and offshore facilities are discussed. Produced water treating and water injection systems are also covered. Solution gas handling processes and equipment will be discussed at a relatively high level. In addition to the engineering aspects of oil production facilities, practical operating problems will also be covered, including emulsion treatment, sand handling, dealing with wax and asphaltenes, etc. Exercises requiring calculations are utilized throughout the course. The course intended to complement the G-4 Gas Conditioning and Processing course, focused on the gas handling side of the upstream oil and gas facilities area.

## Course Objectives:

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

- ✓ Well inflow performance and its impact on production/processing facilities
- ✓ About oil, gas, and water compositions and properties needed for equipment selection and sizing
- ✓ How to select and evaluate processes and equipment used to meet sales or disposal specifications
- ✓ To apply physical and thermodynamic property correlations and principles to the design and evaluation of oil production and processing facilities
- ✓ How to perform equipment sizing calculations for major production facility separation equipment
- ✓ To evaluate processing configurations for different applications
- ✓ How to recognize and develop solutions to operating problems in oil/water processing facilities

## Who Should Attend?

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This course is intended for Process/facilities engineers and senior operating personnel, section heads and managers involved with the design and operation of oil and produced water processing facilities.

## Course Outline:

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### Day 1:

- Reservoir traps, rocks, and drive mechanisms
- Phase envelopes and reservoir fluid classification

- Well inflow performance
- Artificial lift

#### Day 2:

- Gas, oil, and water - composition and properties
- Oil gathering systems
- Gas-liquid separation
- Emulsions

#### Day 3:

- Oil-water separation
- Oil treating
- Desalting
- Oil stabilization and sweetening
- Oil storage and vapor recovery

#### Day 4:

- Sand, wax, asphaltenes, and scale
- Pipeline transportation of crude oil
- Pumps

#### Day 5:

- Produced water treatment
- Water injection systems
- Solution gas handling

## **Course Certificate:**

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

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## **Course Methodology:**

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**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:

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

## Course Timings:

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### Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session