Flow assurance process issues have a major impact on asset integrity and often lead to lost production, or even plant shut-downs costing $millions. Operations personnel will gain an understanding of the types of fluid properties they are processing in order to manage the system effectively and be able to predict, monitor and mitigate effects caused by the build up of waxes, asphaltenes, inorganic scale and soaps, and hydrates.

John Crane’s Oil Plus Team has developed a five-day, hands-on learning experience that provides participants with an overview of the sciences and technologies involved in oil and gas production, with particular reference to production chemistry.

**Course Objectives**
- Overview of typical production equipment and process
- Identify key options to negate flow assurance issues
- Understand where challenges might exist
- How to implement mitigation strategies

**Content Delivery**
- English

**Required Tools**
- Laptop computer
- Calculator

Oil Plus Ltd is an independent consulting and oilfield services business group of John Crane, a division of Smiths Group plc. We work closely with oil and gas companies all over the world to provide solutions to a wide range of production chemistry and process engineering issues, starting with extraction from the reservoir, through phase separation and on to water injection and resulting reservoir issues.

For more information please visit www.johncrane.com/oilplus
Course modules

- **Introduction** – Review of oil and gas production processes
- **Basic geology and fluid properties** – Provides overview of geology and its influence on waterflood design, the importance of source water characterisation, water injection system design, equipment and processes
- **Waxes** – Explains the common characteristics of waxes, associated problems, remediation and prevention programs
- **Asphaltenes** – Provides overview of asphaltene properties, formation and deposition, associated problems, monitoring techniques and inhibition
- **Soaps** – Explains different types of soaps, their formation and deposition, associated problems, analysis techniques and control programs
- **Emulsions** – Looks at the problems, formation and separation of emulsions, testing methods and demulsification
- **Inorganic scale and scale control** – Explains why scales form and the effect they have in an oilfield environment, mitigation and management strategies
- **Hydrates** – Describes problems, properties and formation of hydrates, and prevention, inhibition and remediation methods
- **Corrosion and corrosion control** – Provides general overview of corrosion problems, prevention and monitoring
- **Macro and microbiological control** – Provides overview of processes, problems and solutions associated with bacteria and archaea in oil and water systems. It also explains the importance of good sampling and monitoring techniques for microbiological applications
- **Chemicals and their selection** – Provides in-depth overview of the types, applications and selection of oilfield chemicals
- **System monitoring** – Gives operations personnel a practical understanding of oil and water quality, injection water quality characteristics, how to troubleshoot, de-bottleneck and implement maintenance programs

© 2014 Oil Plus Ltd  Print 10/14    www.johncrane.com/oilplus
BS EN ISO9001:2008 11984 Certified. Details available on request.

Headquarters
Newbury, UK
Tel: +44 (0)1635 30226

North America
Houston, USA
Tel: +281 269 6860

Asia
Kuala Lumpur, Malaysia
Tel: +603 2020 1090

Australasia
Perth, Australia
Tel: +61 (0)8 9456 8600