



Introduction to Fiber Optics for Well Surveillance - IFOS

COURSE

About the Course

This course will give attendees an introduction to fiber optics sensing in reservoirs and wells. Attendees will gain an awareness of the types of fiber available, how it can be deployed, the range of measurements that can be made and how these can be applied to resolving common well and reservoir issues. The emphasis in the course will be on distributed measurements rather than point measuring sensors. The course will discuss the differences between the main types of fiber available, the underlying physics of the measurements, and the principles of operation for the different measurements and sensor types.

Attendees will learn about the variety of conveyance and deployment methods for fiber deployment in wells. Hypothetical examples will be used to illustrate the different deployment cases. The course will give the participant an understanding of the type of measurement available and how the operator can use fiber measurements in combination with other data to help design an integrated surveillance program to diagnose common well and reservoir performance issues. Case examples will be used within discussion groups to explore the measurement choices.

The participant will gain an understanding of the variety and range of fiber optic interrogation units available, along with the flexibility in setup that can be applied to help enhance the system's ability to identify specific well and reservoir issues. Examples will be shown of how this data can be integrated with other data forms to help optimise the interpretation process and generate robust well and reservoir diagnosis. By the end of the course the attendee should have a grasp of the types and variety of measurement available, how fiber could be deployed in wells, and the types of well and reservoir problems the data can be used to resolve.

Target Audience

Petroleum engineers, production engineers, petrophysicists and reservoir engineers and managers who may be making technology and tool selection decisions.

You Will Learn

Participants will learn how to:

- Select the appropriate fiber deployment options for your well
- Select the appropriate measurements for well and reservoir diagnostics
- Determine the optimal fiber interrogation units for your application
- Design a basic program for a fiber surveillance

- Understand the physics behind distributed fiber measurements
- Perform basic distributed temperature and acoustic interpretations
- Integrate fiber with other data forms to generate robust well diagnostics

Course Content

- Basics of fiber construction and manufacture
- How fiber is selected for downhole service
- The types of measurement that are commonly made with fiber
- The differences between point measurements and distributed measurements and the opportunities this presents
- Different fiber deployment methodologies for oilfield service
- Selection and performance characteristics of optical interrogation units
- Principles behind distributed temperature interpretation (DTS)
- Principles of distributed acoustic interpretation (DAS)
- Integration of fiber data with other data forms
- Case examples with different fiber applications for well and reservoir management

Product Details

Categories: Upstream

Disciplines: Petrophysics Unconventional Resources

Levels: Foundation

Product Type: Course

Formats Available: In-Classroom

Instructors: