ADVANCED RESERVOIR STIMULATION

DRPT107A

TRAINIT ACADEMY

COURSE TITLE

ADVANCED RESERVOIR STIMULATION

COURSE DATE/ VENUE

26th - 30th January 2026

London, UK

COURSE REFERENCE

DRPT107A

COURSE DURATION

05 Days

DISCIPLINE

Drilling, Reservoir & Petroleum Training

COURSE INTRODUCTION

This Advanced Reservoir Stimulation training program is designed for experienced professionals seeking to deepen their technical expertise in diagnosing formation damage, selecting optimal candidates for stimulation, designing and executing advanced stimulation treatments (Hydraulic fracturing and Matrix acidizing).

Participants will gain a strong understanding of inflow performance and reservoir deliverability, with the ability to understand various types of formation damage and know how to detect it. The course explores methods to quantify skin factors and highlights practical approaches for identifying wells that are ideal candidates for stimulation.
A core focus will be placed on hydraulic fracturing, including the key concepts of fracture geometry, propagation, and the influence of rock mechanics on fracture development. Attendees will learn how to generate a practical hydraulic fracturing treatment schedule, calculate treatment volumes, and differentiate between pumping techniques based on their advantages, limitations, and field applications.

The training also provides an in-depth review of pre-frac diagnostic tests (Data frac types) teaching participants how to select and interpret the right test for each reservoir condition. Further, the course covers fracturing fluid systems, including the various types of additives, their purposes, and proppant selection strategies. Participants will also become familiar with surface and downhole equipment used during fracture stimulation.
On the matrix stimulation side, attendees will learn to distinguish between acidizing techniques, understand chemical reactions in sandstone and carbonate formations, and design effective matrix acidizing treatments using appropriate acid systems and diversion methods. In addition to exposure to acid frac application and the different techniques used in acidizing challenging applications like fractured reservoirs and horizontal wells. This highly practical training integrates theoretical knowledge with real-world field practices and cutting-edge technologies currently applied in reservoir stimulation worldwide.

COURSE OBJECTIVE

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

- ✓ Understand the inflow performance relationship and reservoir deliverability and know how to detect formation damage.
- ✓ Explain the different types of formation damage and know how they generally formed in the reservoir.
- ✓ Use different methods to detect skin or formation damage.
- ✓ Identify the optimum candidate for reservoir stimulation.
- ✓ Understand the concept of hydraulic fracturing as a reservoir stimulation method and the main fracturing geometries.
- ✓ Explain fracture propagation directions and what are factors controlling frac propagation.
- ✓ Generically understand rock mechanics concept and know its effect of frac creation and propagation.
- ✓ Learn how to generate a practical hydraulic fracturing treatment pumping schedule and calculate the volumes of main treatment different stages.
- ✓ Learn different hydraulic fracturing pumping techniques, the advantages and disadvantages of each technique, and the optimum candidates for each technique.
- ✓ Discuss the different types of pre-frac injection tests, what information is obtained from each test, and when to select the optimum test.
- ✓ Identify different types of fracturing fluids systems in addition to knowing the different types of fluid additives and the function of each one.
- ✓ Identify different types, sizes, and strength of proppant and when each type of proppant can be used.
- ✓ Generically list main fracturing equipment and surface connections that are used during pumping the main frac treatment. In addition to the different down hole fracturing equipment.
- ✓ Understand the different state of art fracturing technologies that are used at many applications
- ✓ Identify and contrast the application areas of the various types of matrix stimulation techniques.
- ✓ Generically list the primary chemical reactions in sandstone and carbonate acidizing.
- ✓ Select acid formulation based on source of formation damage and rock composition and understand the role of different acid additives.
- ✓ Design a matrix acidizing treatment (acid volume and injection rate) and discuss different placement and diversion techniques.

COURSE AUDIENCE

This presentation is designed for Production engineers, Reservoir engineers, and Drilling engineers, and others who have a basic understanding of types of reservoir damage, matrix stimulation, and hydraulic fracturing and need to enhance their knowledge about fracturing concepts and applications.

COURSE CONTENT

DAY 1: Introduction – Formation Damage & Reservoir Stimulation

- Introduction to Audience. Understand course objectives and expectations.
- Understanding inflow performance relationship (IPR)
- Definition of formation damage (skin)
- Types of formation damage.
- How to detect formation damage (skin)
- Introduction on main types of reservoir stimulation
- Candidate selection for stimulation

DAY 2: Introduction – Basics of Hydraulic Fracturing Design

- What is hydraulic fracturing (Identification).
- Understanding frac propagation and propagation directions
- Introduction to rock mechanics and its effect on frac design
- Hydraulic fracturing design steps.
- Introduction to data frac analysis

DAY 3: Fracturing Products, Equipment, and Operation.

- Fracturing fluid main types and functions.
- Proppant main types and functions.
- Quality control for fracturing fluid and proppant.
- Surface fracturing equipment.
- Introduction to different fracturing technologies

DAY 4: Matrix Acidizing (Sandstone).

- Treatment design methodology in sandstone.
- Selection of optimum chemical treatment and how to calculate treatment volume.
- Acid fluid systems and additives and how to select proper treatment.
- Operational acid pumping schedule with examples
- Acid diversion technologies

DAY 5: Matrix Acidizing (Carbonate).

- Treatment design methodology in carbonate.
- Selection of optimum chemical treatment and how to calculate treatment volume.
- Acid fluid systems and additives and how to select proper treatment.
- Operational acid pumping schedule with examples
- Acid frac technology (Candidates and required lab tests)
- Acidizing special well types (Horizontal wells, Natural fractured formation, Gravel pack)

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

£5,750 per Delegate. This rate includes participant's manual, Hand-Outs, lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions