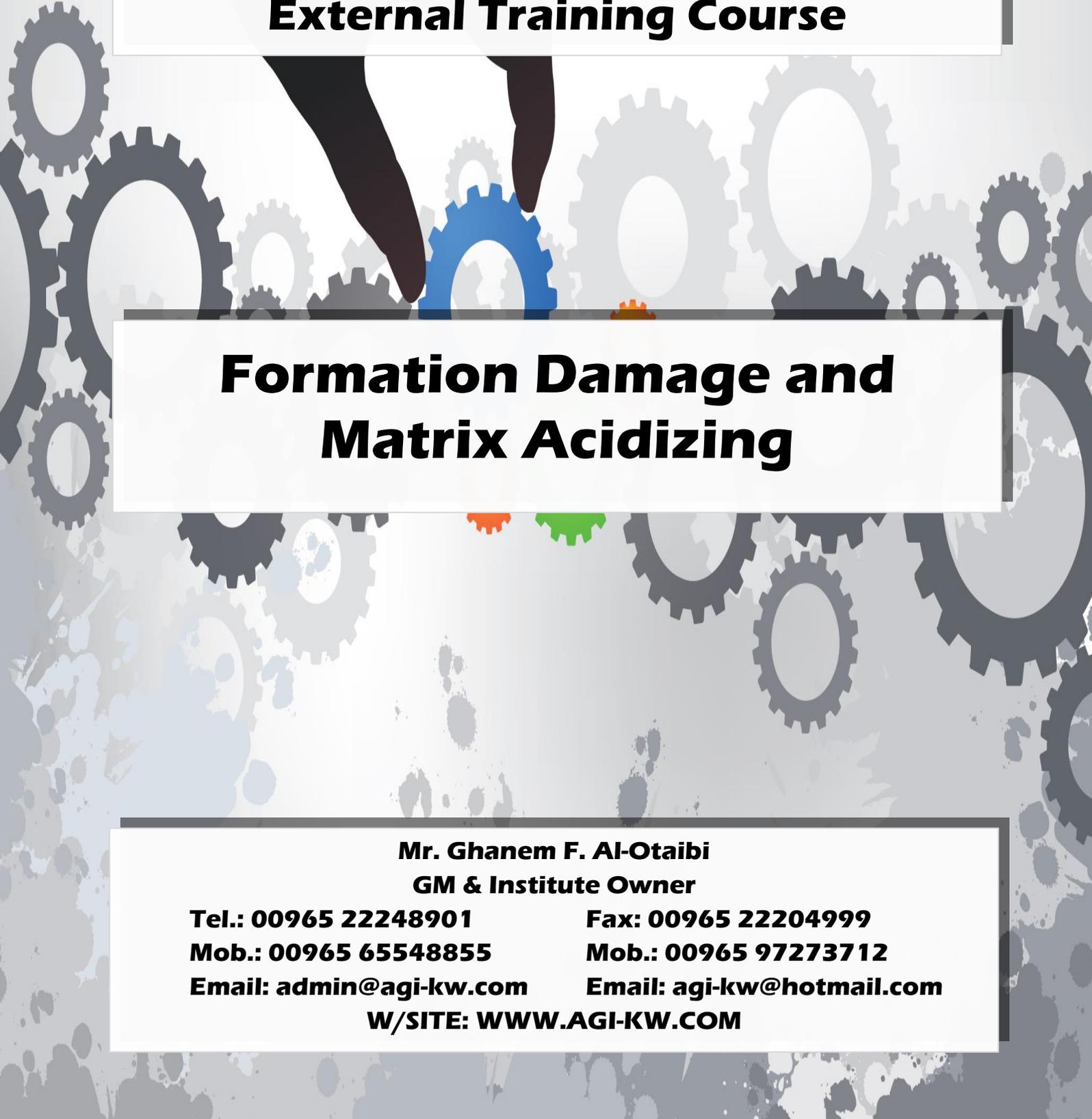




AMERICAN GLOBAL INSTITUTE
FOR PRIVATE TRAINING



External Training Course



**Formation Damage and
Matrix Acidizing**

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External Training Course:

Formation Damage and Matrix Acidizing

Course Overview:

This intensive 5-day training program is designed to equip petroleum engineers, production engineers, and field personnel with in-depth knowledge of formation damage mechanisms and matrix acidizing techniques. The course covers the causes, evaluation, prevention, and remediation strategies for formation damage, with a strong emphasis on matrix acidizing applications to enhance well productivity.

Objectives:

By the end of this training course, you will be able to:

- Illustrate the impact of formation damage upon production.
- Explain the wide variety of reasons, sources, depositional environments, and routine operations' activities that result in production limitations.
- Assess formation damage "skin" values.
- Calculate production rates with various levels of formation damage as well as no formation damage.
- Describe how TFD is recognized and how PD is recognized and present the characteristics and elements of each.
- Illustrate clay stabilization through the use of positively charged cation exchange to stabilize negatively charged clays to limit clay migration, hydration, and other damaging mechanisms.

Training Methodology:

Classroom Lectures – Delivered by experienced industry professionals.

Case Studies – Real-world scenarios and lessons learned.

Interactive Discussions – Open floor for participant engagement.

Hands-on Exercises – Practical applications and calculations.

Assessments – Knowledge checks and final evaluation.

Course Outline:

Day 1: Introduction to Formation Damage

- Definition and impact of formation damage on well performance.
- Common causes of formation damage:
 - Drilling-induced damage.
 - Completion-induced damage.
 - Production-related damage.
 - Workover and stimulation damage.
- Formation damage assessment techniques.
- Laboratory and field diagnosis of formation damage.

Day 2: Formation Damage Prevention and Remediation

- Strategies for minimizing formation damage during drilling, completion, and production.
- Damage control measures in sandstone and carbonate formations.
- Laboratory techniques for formation damage evaluation.
- Wellbore cleaning and perforation techniques.
- Case studies on formation damage prevention.

Day 3: Introduction to Matrix Acidizing

- Fundamentals of acidizing treatments.
- Differences between sandstone and carbonate acidizing.
- Selection criteria for acidizing treatments.
- Acid types and additives used in matrix acidizing.
- Compatibility and reaction mechanisms of acids with formation minerals.

Day 4: Acidizing Design, Execution, and Monitoring

- Step-by-step design of matrix acidizing treatments.
- Acid placement techniques (bullheading, coiled tubing, diversion methods).
- Fluid loss control and diverter applications.
- Real-time monitoring and performance evaluation.
- Troubleshooting common acidizing issues.

Day 5: Case Studies and Practical Applications

- Review of successful acidizing jobs and field applications.
- Economic evaluation of matrix acidizing treatments.
- Best practices for optimizing acidizing treatments.
- Group exercises and interactive discussions.
- Final assessment and Q&A session.

Program Agenda::

(1st Day) Agenda

8.30	9.00	Opening Remarks (30 Min.).
9.00	11.30	<u>DISCUSS COURSE OBJECTIVES:</u> <ul style="list-style-type: none"> • Introduction to Formation Damage. • Formation Damage Prevention and Remediation. • Introduction to Matrix Acidizing. • Acidizing Design, Execution, and Monitoring. • Case Studies and Practical Applications.
11.30	12.00	Coffee Break
12.00	14.00	<u>Introduction to Formation Damage:</u> <ul style="list-style-type: none"> • Definition and impact of formation damage on well performance. • Common causes of formation damage: <ul style="list-style-type: none"> ○ Drilling-induced damage. ○ Completion-induced damage. ○ Production-related damage. ○ Workover and stimulation damage. • Formation damage assessment techniques. • Laboratory and field diagnosis of formation damage.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(2nd Day) Agenda

9.00	11.30	<u>Formation Damage Prevention and Remediation:</u> <ul style="list-style-type: none"> • Strategies for minimizing formation damage during drilling, completion, and production. • Damage control measures in sandstone and carbonate formations. • Laboratory techniques for formation damage evaluation.
11.30	12.00	Coffee Break
12.00	14.00	<u>Formation Damage Prevention and Remediation:</u> <ul style="list-style-type: none"> • Wellbore cleaning and perforation techniques. • Case studies on formation damage prevention.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(3rd Day) Agenda

9.00	11.30	<u>Introduction to Matrix Acidizing:</u> <ul style="list-style-type: none"> • Fundamentals of acidizing treatments. • Differences between sandstone and carbonate acidizing. • Selection criteria for acidizing treatments.
11.30	12.00	Coffee Break
12.00	14.00	<u>Introduction to Matrix Acidizing:</u> <ul style="list-style-type: none"> • Acid types and additives used in matrix acidizing. • Compatibility and reaction mechanisms of acids with formation minerals.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(4th Day) Agenda

9.00	11.30	<u>Acidizing Design, Execution, and Monitoring:</u> <ul style="list-style-type: none"> • Step-by-step design of matrix acidizing treatments. • Acid placement techniques (bullheading, coiled tubing, diversion methods).
11.30	12.00	Coffee Break
12.00	14.00	<u>Acidizing Design, Execution, and Monitoring:</u> <ul style="list-style-type: none"> • Fluid loss control and diverter applications. • Real-time monitoring and performance evaluation. • Troubleshooting common acidizing issues.
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

(5th Day) Agenda

9.00	11.30	<u>Case Studies and Practical Applications:</u> <ul style="list-style-type: none"> • Review of successful acidizing jobs and field applications. • Economic evaluation of matrix acidizing treatments. • Best practices for optimizing acidizing treatments.
11.30	12.00	Coffee Break
12.00	14.00	<u>Case Studies and Practical Applications:</u> <ul style="list-style-type: none"> • Group exercises and interactive discussions. • Final assessment and Q&A session.
14.00	14.30	Questions, Discussion & Conclusion Training Course.
14.30		Buffet Lunch