

**TRAINING TITLE**

**FEASIBILITY OF REPAIR OF COMPONENTS FROM PLANT EQUIPMENT**

**Training Duration**

**5 day**

**Training Venue and Dates**

<b>Ref. No.</b>	<b>Feasibility of Repair of Components from Plant Equipment</b>	<b>5</b>	<b>11-15 Aug. 2025</b>	<b>\$5,500</b>	<b>Abu Dhabi, UAE</b>
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In any of the 4 or 5-star hotels. The exact venue will be informed later.

**Training Fees**

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch

**Training Certificate**

**Define** Management Consultants Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

This course is designed to provide participants with the necessary knowledge and skills to assess the feasibility of repairing components from plant equipment. It focuses on evaluating whether it is more cost-effective, time-efficient, and technically viable to repair or replace plant equipment components. Through a combination of theory and practical case studies, participants will learn to analyze critical factors such as component condition, repair techniques, downtime impact, and long-term operational efficiency to make informed decisions.

**TRAINING OBJECTIVES**

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**By the end of the course, participants will be able to understand**

1. Evaluate the Condition of Plant Equipment Components:
2. Analyze the Economic Viability of Repairs:
3. Assess Repair Techniques and Their Suitability:
4. Consider Downtime Impact and Operational Continuity:
5. Understand Risk Management in Component Repairs:
6. Apply Decision-Making Tools to Repair Feasibility:
7. Evaluate Long-Term Sustainability of Repairs:

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8. Develop Comprehensive Feasibility Reports:

**WHO SHOULD ATTEND?**

This course is ideal for:

- Plant maintenance engineers, technicians, and supervisors.
- Maintenance planners and asset managers.
- Operations managers and decision-makers involved in plant equipment repair and replacement decisions.
- Anyone responsible for the maintenance, repair, and optimization of plant equipment and systems.

**TRAINING METHODOLOGY**

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. 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.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

**COURSE PROGRAM:**

**Day 1: Introduction to Plant Equipment Components and Repair Decisions**

- Session 1: Overview of Plant Equipment and Components
  - Understanding the different types of plant equipment (e.g., pumps, motors, valves, compressors, conveyors) and their functions.
  - Identifying critical components in plant operations that are key to equipment performance.
- Session 2: Cost-Benefit Analysis for Equipment Repairs
  - Introduction to cost-benefit analysis (CBA) as a decision-making tool.
  - Analyzing repair vs. replacement scenarios: factors to consider (cost, downtime, safety, reliability, etc.).
- Session 3: Factors Affecting Repair Feasibility

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- Evaluating the technical condition of components: wear, fatigue, corrosion, and material degradation.
- Understanding failure modes and their impact on the overall plant system.

### Day 2: Repair Techniques and Their Impact on Component Longevity

- Session 1: Repair Methods for Common Plant Equipment Components
  - Overview of common repair techniques for mechanical, electrical, hydraulic, and pneumatic components.
  - Best practices for welding, machining, part replacement, and electrical rewiring.
- Session 2: Component Life Cycle and Failure Analysis
  - Understanding the life cycle of equipment components and how it impacts repair decisions.
  - Techniques for conducting failure analysis to predict future performance and reliability.
- Session 3: Material Selection for Repair
  - Evaluating the role of material properties (e.g., strength, corrosion resistance) in repair feasibility.
  - Selecting the appropriate repair materials for different types of components.

### Day 3: Evaluating Downtime and Operational Impact

- Session 1: Impact of Downtime on Plant Operations
  - Understanding how equipment downtime affects plant production and costs.
  - Calculating downtime costs and evaluating repair timelines versus production requirements.
- Session 2: Estimating Repair Time and Resources
  - How to estimate repair times, labor, and resources needed for specific component repairs.
  - Developing realistic repair schedules that minimize operational disruption.
- Session 3: Alternative Solutions and Temporary Repairs
  - Exploring temporary repair options to reduce downtime while awaiting permanent fixes.
  - Evaluating feasibility of using backup systems or equipment during repairs.

### Day 4: Economic Considerations and Risk Management

- Session 1: Economic Considerations in Repair Decisions

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- Analyzing repair costs (labor, materials, and equipment) versus replacement costs.
- Identifying hidden costs associated with repairs (e.g., indirect costs, unplanned downtime, quality issues).
- Session 2: Risk Assessment for Repairs
  - Understanding the risks involved in repairing critical components (e.g., equipment failure after repair, safety risks, compliance issues).
  - How to assess risk and mitigate potential failure after repair.
- Session 3: Decision-Making Tools and Techniques
  - Introduction to decision matrices, SWOT analysis, and other decision-making tools to assess repair feasibility.
  - Comparing repair options using data-driven approaches.

Day 5: Sustainability and Long-Term Feasibility

- Session 1: Long-Term Performance and Reliability of Repairs
  - Assessing the long-term benefits of repairing components versus replacing them.
  - Ensuring that repairs align with overall plant maintenance and reliability goals.
- Session 2: Sustainability in Repairing Plant Equipment
  - Considering environmental impact, material recycling, and sustainability when choosing repair options.
  - Evaluating the feasibility of repairs that align with sustainability practices.
- Session 3: Developing a Feasibility Study and Reporting
  - How to document repair feasibility studies and present findings to management.
  - Creating detailed reports with technical, economic, and risk analysis for informed decision-making.

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**NOTE:**

**Pre-& Post Tests will be conducted.**

**Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.**

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