# FORENSIC ENGINEERING SHORT COURSE

## A Two Day Programme
## By
## The Asset Partnership

LEADERS IN **ASSET UTILISATION, PERFORMANCE** & **MAINTENANCE** SUPPORT

The Asset Partnership offers a range of public and in-house training courses in physical asset management to assist you and your organisation acquire the necessary skills and expertise for the complex task of managing physical assets.

Together, they form an integrated suite designed to introduce the latest approaches to managing physical assets . Attending one of our courses is just the start. Talk to us about our ability to help and support your organisation through the challenges of implementation.


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### Course Overview

The Asset Partnership Forensic Engineering course is designed to teach the fundamentals of resolving problems through cross-functional teamwork. Best results are always obtained when operations and maintenance staff work through asset problems together.

Most individuals and teams when faced with plant problems tend to apply a “ready, fire, aim” approach to problem solving as they look for fast solutions to minimise disruption. This tends to cause unstructured and ill-directed searches for solutions. In some cases the problem is not resolved, and is moved to another area or is covered up to reappear with a vengeance at a later date.

The Asset Partnership’s Forensic Engineering is a process specifically designed for industrial plant where the normal variations in plant performance are understood and managed but a process is required to quickly and systematically define the ‘special’ cause and develop a viable and permanent solution for the deviation.

### Course Objectives

The key objectives of this course are to:

- Teach the elements of Forensic Engineering Analysis and problem solving, based on a common language and understanding about *Special Cause* variations;
- Develop an understanding of the nature of problems;
- Use the techniques to resolve real plant problems and to seek a real financial payback;
- Integrate these new methods into everyday activities; and
- Introducing participants to facilitation skills required to ensure successful application of the techniques to realise the best outcome.

### Who Should Attend?

Typical participants include asset operators and maintainers, engineers and improvement facilitators.

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## Why Forensic Engineering?

Variations in the time and effort it takes to achieve an outcome is only natural. However, there are occasions when a significant or *Special Cause* variation occurs which has a dramatic impact. Regardless if the impact is a result of equipment, process or systems failure, what must be achieved is proper analysis to reduce the probability of the failure occurring again.

This two day short course provides essential grounding for operations and maintenance practitioners to develop basic Forensic Engineering skills using a robust and proven seven step problem solving process.

## Why do we call it Forensic Engineering?

Your organisation already has in place strategies to prevent or manage failures of equipment, processes and systems. In the event of a failure which has consequences beyond the expected, then a *Special Cause* variation has occurred. The cause(s) of the variation must then be determined through a Forensic Engineering Approach before an appropriate prevention strategy can be developed.

This two day practical course covers the following elements:

***Problem solving:*** We will introduce delegates to a seven step problem solving process, involving:

**Problem Statement** - Agree on the type and extent of the problem

**Assemble Evidence** - Gathering data about the problem

**Establish Theories** - Development of possible causes

**Prove Theories** - Establishing the root cause

**Develop Solutions** - Development of possible solutions to address the problem

**Decision Making** - Techniques to assist the solution selection process

**Action Planning & Review** - Planning and implementation of the solution

***Facilitation:*** As Forensic Engineering participants are often assigned with implementing change, they will also learn how to identify the key phases of change, and are provided with techniques to assist them in guiding the team to the best possible outcome.

## Course Notes

Attendees will be provided with course notes, sample Worksheets which can be copied for later use, and a 'Quick Reference' Guide which outlines the seven step process.

## Course Delivery

The two-day course is conducted either as a public course or delivered on-site in a classroom environment away from day-to-day disruptions. Class sizes of up to 15 persons can be accommodated. Attendees should comprise operations and maintenance personnel together with specialists if appropriate.


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