



The Academy for Professional Education and Training

## **Programme of Industry Courses**

**Professional Best Practice  
Decision-Making in Industry on  
Asset Management and Maintenance,  
Risk Management and Safety, and  
Quality and Performance Management**

## A SUITE OF IN-COMPANY COURSES ON BEST PRACTICE IN INDUSTRY

**These in-company courses are designed for engineering practitioners who need to enhance their decision-making capabilities in implementing sustainable best practice in asset management, maintenance, risk, safety, quality and performance**

Best practice decision-making in industry requires the essential capabilities of relating corporate *strategic planning* to a practical application of *outcome-driven, risk-based* and *risk-informed decision-making*; establishment and implementation of organisational *tactical and operational planning* through the application of *knowledge-based decision-making*; implementation of *sustainable best practice* in *operational quality and performance*; as well as meaningful *knowledge transfer* through the appropriate training of an organisation's human resource assets.

### COURSE DESCRIPTIONS

#### **3 days (24 hrs): ASSET MANAGEMENT AND MAINTENANCE BEST PRACTICE**

– industry best practice Asset Management, and more specifically Integrated Engineering Asset Management, is a systematic, structured process covering the whole life of physical assets whereby the underlying assumption is that assets exist to support the organisation's delivery strategies, and requires a certain level of management practice and expertise from diverse organisational disciplines. The principal objective of Integrated Engineering Asset Management is to achieve the best possible match of assets with service delivery strategies where corporate objectives are translated into outputs and outcomes. These delivery strategies combine engineering practices, information systems, personnel, and financial resources, in an Integrated Engineering Asset Management strategy. Assets maintenance best practice includes specific topics such as developing maintenance policies and maintenance strategies, planned maintenance, condition-based maintenance, reliability-centred maintenance, equipment failure analysis, contract maintenance, maintenance spares management, maintenance costing, zero-base budgeting, maintenance audits and performance assessment. What makes this course unique in presenting maintenance best practice is the combination of reliability and failure analysis with systems engineering; availability and loss control with maintainability and maintenance strategies; condition-based maintenance and reliability-centred maintenance with contract maintenance; safety and plant and equipment analysis with plant commissioning; maintenance costing and budgeting with maintenance spares management; as well as application of Reliability, Availability, Maintainability and Safety (RAMS) maintenance audits and performance assessment with maintenance management systems evaluation, in a practical and hands-on approach to asset maintenance.

## COURSE DESCRIPTIONS (CONTINUED)

### **3 days (24 hrs): RISK MANAGEMENT AND SAFETY BEST PRACTICE**

– industry best practice Risk Management Planning according to ISO 31000 Risk Management Standard requirements for establishing risk criteria and assessment through risk identification and classification; risk analysis, risk quantification and risk rating through hazards analysis, impact severity and likelihood estimations; risk evaluation and ranking through risk factor quantification and risk portfolio development; risk treatment, risk control and monitoring through contingency planning, and relating corporate *strategic planning to outcome-driven, risk-based and risk-informed decision-making*. Also, developing a Safety Management Plan according to the Australian Workplace Safety Standards and Regulations, and National Occupational Health and Safety Commission Standards for controlling, eliminating, or minimising safety hazard risks through identifying the potential for major loss events and exposure to safety hazards, and making decisions on implementing appropriate controls and monitoring systems for control measures.

### **2 days (16 hrs): QUALITY AND PERFORMANCE MANAGEMENT BEST PRACTICE**

– industry best practice Quality Management and Outcome Performance Planning according to the ISO 9000, 9001, and 9004 Quality Management System Standards for *quality assurance of operational processes, systems and products*, as well as establishing best practice in *Quality Management for Performance Improvement* through the implementation of *continual improvement measures* that enable an organisation to track performance more effectively, to achieve a better utilisation of resources, reduce risks of failing to complete set schedules and targets, and improve organisational *tactical and operational planning* through the application of *knowledge-based decision-making* that effectively links *continual improvement* performance measures and action plans at all functional levels using up-to-date *balanced scorecard benchmarking methods for sustainable best practice* in operational quality and performance.

## COURSE TUTOR

The Academy sometimes sources the appropriately experienced and educated course tutors for specialised training. For this suite of courses on best practice in physical asset management and maintenance, risk management and safety, as well as quality and performance management and sustainability, the Academy's course tutor is Dr Fred Stapelberg [BScEng, MBA(Exec), PhD(Eng), DBA, PrEng]. Dr Stapelberg has more than three decades of consulting engineering experience, gives tertiary lectures at post-graduate level in engineering management, and has developed and delivered industry training courses for more than two decades to a very wide range of organisations, including international corporations, such as Alcoa, Anglo American, BP, BHP Billiton, Caltex, Escom, Rio Tinto (CRA), Sasol, Shell, WMC, and many more.

## ASSET MANAGEMENT AND MAINTENANCE BEST PRACTICE

### THREE-DAY COURSE – DAY 1

Implementing industry best practice Asset Management as well as developing an Asset Management Plan, assets benchmarking methodology, and developing and applying an Assets Strategy Plan and an Assets Risk Management Plan.

### COURSE CONTENTS

#### DAY 1:

**Coffee 08h00 - 08h30**

#### INTRODUCTION

Defining Asset Management  
Asset Management Principles  
Asset Management Frameworks  
Defining Asset Management Functions  
Assessment Criteria for Asset Management  
Developing and Applying an Assets Management Plan

**Morning Tea 10h00 - 10h30**

Developing Benchmarking Methodology  
Benchmarking Asset Management Practice  
Benchmarking Integrated Asset Management  
Integrated Asset Management Benchmark Surveys  
Presenting Comparison Benchmark Survey Results  
Presenting Competence Benchmark Survey Results

**Lunch 12h00 - 13h00**

Establishing Assets Needs Strategies  
Establishing Assets Support Systems  
Developing Assets Management Plans  
Establishing Assets Strategic Planning  
Assessment of Assets Strategic Planning  
Developing and Applying an Assets Strategy Plan

**Afternoon Tea 14h30 - 15h00**

Assets Risk Management Requirements  
Assets Risk and Asset Management Implication  
Risk Identification and Calculating Risk Factors  
The Risk Management Process and Risk Analysis  
Assets Risk Action Scheduling and Risk Mitigation  
Developing and Applying an Assets Risk Management Plan

**Closure Day 1 16h30 - 17h00**

Preparation discussion for Day 2



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## ASSET MANAGEMENT AND MAINTENANCE BEST PRACTICE

### THREE-DAY COURSE – DAY 2

Implementing industry best practice in the development and application of an Assets Budget and Cost Management Plan, Assets Usage Life Cycle Plan, Assets Condition Assessment Plan and Assets Performance Management Plan.

### COURSE CONTENTS

#### DAY 2:

**Coffee 08h00 - 08h30**

#### INTRODUCTION

Assets Whole-of-Life Costing Methods  
Estimating Assets Budget and Cost Elements  
Operations and Maintenance Budgets and Costs  
Life Cycle Costing Process and Asset Management  
Assessment of Assets Budget and Cost Management  
Developing the Assets Budget and Cost Management Plan

**Morning Tea 10h00 - 10h30**

Assets Usage Life Cycle and Strategic Planning  
Assets Usage Life Cycle Processes and Evaluation  
Assets Usage Life Cycle Planning and Optimisation  
Assets Life Cycle Integrity and End-Of-Use/Disposal  
Assessment of Assets Usage Life Cycle Management  
Developing and Applying the Assets Usage Life Cycle Plan

**Lunch 12h00 - 13h00**

Assets Condition Assessment and Analysis  
Assets Condition Scoping, Profiling and Modelling  
Assets Health Monitoring and Life Cycle Management  
Assets Condition Monitoring and Performance Analysis  
Applying Assets Failure Modes and Effects Criticality Analysis  
Developing and Applying an Assets Condition Assessment Plan

**Afternoon Tea 14h30 - 15h00**

Assets Level of Service and Performance Specifications  
Assets Function, Condition, Utilisation, and Performance  
Assets Performance Measure, Goals, and Balance Scorecard  
Risk-Based versus Outcome Performance Measurement Criteria  
Assessment of Assets Performance / Performance Management  
Developing and Applying Assets Performance Management Plans

**Closure Day 2 16h30 - 17h00**

Preparation discussion for Day 3



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## ASSET MANAGEMENT AND MAINTENANCE BEST PRACTICE

### THREE-DAY COURSE – DAY 3

Implementing industry best practice in defining assets systems, functions, and functional relationships, as well as defining component failure modes, effects, causes, and consequences for developing optimum maintenance strategies.

### COURSE CONTENTS

#### DAY 3:

**Coffee 08h00 - 08h30**

#### INTRODUCTION

Describing Asset Systems and SBS  
Defining Primary and Secondary Functions  
Determining Equipment Functional Relationships  
Defining and Determining Equipment Failure Modes  
Defining and Determining Equipment Failure Effects  
Defining and Determining Equipment Failure Causes

**Morning Tea 10h00 - 10h30**

Defining Failure Consequences  
Calculating Equipment Risk Rating  
Determining the Probability of Failure  
Determining Criticality by Failure Mode  
Compiling Critical Equipment Rankings  
Decision Logic Map for Critical Equipment

**Lunch 12h00 - 13h00**

Different Types of Maintenance  
Defining Maintenance Objectives  
Benefits of Each Type of Maintenance  
Applicability and Effectiveness of Maintenance  
Strategic Framework for Maintenance Planning  
Defining a Condition-Based Maintenance Strategy

**Afternoon Tea 14h30 - 15h00**

Condition Monitoring and Condition Measurement  
Condition Monitoring / Measurement Data Analysis  
Basic Principles of Reliability-Centred Maintenance  
Basics of RAM Decision Logic and Scheduling Tasks  
Developing Predictive versus Preventive Maintenance  
Reviewing Systems / Equipment Maintenance Schedules

**Closure Day 3 16h30 - 17h00**

Review and General Questions



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## **RISK MANAGEMENT AND SAFETY BEST PRACTICE**

### **THREE-DAY COURSE – DAY 1**

Developing an industry best practice Risk Management Process according to the AS/NZS 4360 and ISO 31000 Risk Management Standard requirements for defining risk criteria, assessment, analysis, evaluation, treatment, and control.

### **COURSE CONTENTS**

#### **DAY 1:**

**Coffee 08h00 - 08h30**

#### **INTRODUCTION**

Attitude and Risk Attitude  
Management Attitude and Risk  
Risk Attitude and Risk Perception  
Risk Attitude and Risk Management  
Risk Attitude and Change Management  
Risk Attitude in Project Risk Management

**Morning Tea 10h00 - 10h30**

Objective and Subjective Risks  
Objective Risk and Risk Assessment  
Subjective Risk and Risk Assessment  
Subjective Risk Assessment and Sensitivity  
Objective Risk and Project Risk Assessment  
Subjective Risk and Project Risk Assessment

**Lunch 12h00 - 13h00**

Risk Management Reviewed  
Operational Risk Management  
International Risk Management Standards  
AS / NZS 4360 Risk Management Standard  
The ISO 31000 Risk Management Standard  
ISO 31000:2009 Risk Management Process

**Afternoon Tea 14h30 - 15h00**

Risk Identification Concepts  
Risk Quantification Concepts  
Risk Analysis Concepts  
Risk Evaluation Concepts  
Risk Treatment Concepts  
Risk Control Concepts

**Closure Day 1 16h30 - 17h00**

Preparation discussion for Day 2



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## **RISK MANAGEMENT AND SAFETY BEST PRACTICE**

### **THREE-DAY COURSE – DAY 2**

Developing an industry best practice Risk Management Plan according to the ISO 31000 Risk Management Standard requirement for establishing risk criteria, risk assessment, risk analysis, risk evaluation, risk treatment, and risk control.

### **COURSE CONTENTS**

#### **DAY 2:**

**Coffee 08h00 - 08h30**

#### **OVERVIEW**

The Context of Risk  
Internal and External Risks  
The Characteristics of Risk  
Strategic and Organisational Context  
Establishing Risk Management Context  
Risk Criteria, Risk Sources and Causes

**Morning Tea 10h00 - 10h30**

Methods used for Identifying Risks  
SWOT Analysis in Risk Assessment  
Risk Cause-Consequence Diagrams  
Methods used for Risk Quantification  
Risk Likelihood in Risk Quantification  
Risk Consequence in Risk Quantification

**Lunch 12h00 - 13h00**

Methods used for Analysing Risks  
Hazards Analysis in Risk Analysis  
Operability Analysis in Risk Analysis  
Methods used for Evaluation of Risks  
Risk Factor Analysis in Risk Evaluation  
Risk Profile Analysis in Risk Evaluation

**Afternoon Tea 14h30 - 15h00**

Methods used for Treating Risks  
Methods used for Controlling Risks  
Risk Based Decisions in Risk Treatment  
Risk Informed Decisions in Risk Treatment  
Risk Response Analysis in Controlling Risk  
Risk Contingency Planning for Risk Control

**Closure Day 2 16h30 - 17h00**

Preparation discussion for Day 3



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## **RISK MANAGEMENT AND SAFETY BEST PRACTICE**

### **THREE-DAY COURSE – DAY 3**

Developing a Safety Management Plan according to the Australian Workplace Safety Standards and Regulations and National Occupational Health and Safety Commission Standards for controlling, eliminating, or minimising safety risks.

#### **COURSE CONTENTS**

##### **DAY 3:**

**Coffee 08h00 - 08h30**

##### **OVERVIEW**

Safety Perceptions and Attitudes  
Safety Behaviour and Safety Climate  
Safety Behaviour and Consequences  
Safety Behaviour and Systems Modelling  
Safety Behaviour and Management Systems  
Safety Responsibilities and Accountabilities

**Morning Tea 10h00 - 10h30**

Measuring Safety Performance  
Traditional Safety Performance  
Advanced Safety Performance  
Using Hazard and Risk Rating  
Applying the Site Safety Meter  
Measuring the Site Safety Level

**Lunch 12h00 - 13h00**

Safety Management Essentials  
Safety Management Strategies  
Safety Management Methods  
Safety Management Systems  
Developing a SMS Framework  
Safety Management and Change

**Afternoon Tea 14h30 - 15h00**

Safety Legislation Standards  
International Safety Standards  
Occupational Health and Safety  
Legislation of OH&S Standards  
OH&S Regulations and Standards  
Applying OH&S Management Systems

**Closure Day 3 16h30 - 17h00**

Review and General Questions



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## QUALITY AND PERFORMANCE MANAGEMENT BEST PRACTICE

### TWO-DAY COURSE – DAY 1

Implementing industry best practice Total Quality Management (TQM) as well as developing a Quality Management Plan according to the AS/NZS ISO 9001–9004 Quality Management Standards for continual improvement and for performance.

### COURSE CONTENTS

#### DAY 1:

**Coffee 08h00 - 08h30**

#### INTRODUCTION

Meaning and Principals of Quality  
Perspective and Dimensions of Quality  
Quality Questions and Misconceptions  
Quality Assurance and Quality Control  
Management and Quality Management  
Quality Measures and Quality Statistics

**Morning Tea 10h00 - 10h30**

Customer Needs and Customer Service  
Customer Feedback and Value Analysis  
Quality Costs – Quality Cost Categories  
Prevention and Quality Appraisal Costs  
Measuring and Reporting Quality Costs  
Quality Costs and Supplier Competition

**Lunch 12h00 - 13h00**

Essentials of Quality Management  
Evolution of Quality Management  
Strategy of Quality Management  
Quality Management Methods  
Total Quality Management  
Quality Management Plan

**Afternoon Tea 14h30 - 15h00**

TQM and Quality Standards  
Quality Management Standard  
AS/NZS ISO Quality Standards  
International Quality Standards  
ISO 9001:2008 Quality Standard  
Quality Standards Implementation

**Closure Day 1 16h30 - 17h00**

Preparation discussion for Day 2



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## QUALITY AND PERFORMANCE MANAGEMENT BEST PRACTICE

### TWO-DAY COURSE – DAY 2

Implementing industry best practice in continual improvement for performance and sustainability, with assessment of environmental impacts, and performance management benchmarking using Balanced Scorecard and Capability Maturity.

### COURSE CONTENTS

#### DAY 2:

**Coffee 08h00 - 08h30**

#### INTRODUCTION

Continual Improvement  
Measuring Improvement  
Performance Definitions  
Performance Measurement  
Performance and Improvement  
Performance and Sustainability

**Morning Tea 10h00 - 10h30**

Environmental Impact Defined  
Performance / Environment Links  
Short-term Environmental Impacts  
Longer-term Environmental Impacts  
Quality, Performance, and Environment  
Performance and Environmental Impact

**Lunch 12h00 - 13h00**

Performance Management Defined  
Goal of Performance Management  
Performance Management Assessment  
Performance Management Benchmarking  
Balanced Scorecard Benchmarking Measures  
Contract Performance and Performance Costing

**Afternoon Tea 14h30 - 15h00**

Capability Maturity Modelling  
Capability Maturity Assessment  
Capability Maturity Improvement  
Techniques for Evaluating Maturity  
Maturity Assessment in Performance  
Performance Capability Maturity Models

**Closure Day 2 16h30 - 17h00**

Review and General Questions



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# The Academy for Professional Education and Training

## **COURSE DELIVERABLES:**

These in-company courses include delivery of the course material in bound books duplicating the presentation slides, and a course completion certificate.

## **ABOUT THE ACADEMY:**

The Academy provides professional management development through specialty courses and workshops that are customised to fit each organisation with relevant training content relating to the establishment of corporate strategic planning through innovation-driven, risk-informed decision-making; leadership in the establishment and implementation of organisational tactical and operational planning through relevant knowledge-based decision-making; implementation of sustainable practices for the future, and for competitive edge; as well as knowledge transfer through the appropriate organisational guidance and training. Primarily, the Academy offers professional skills training world-wide in engineering as well as management topics, either through the use of associate experts in their field, presenting special courses and workshops, or through the Academy's own tutors and training modules.

## **COURSE RESERVATIONS:**

TEL. +61 (7) 55 201 333  
Email: [admin@apetorg.com.au](mailto:admin@apetorg.com.au)  
Direct: [fred@proics.com](mailto:fred@proics.com)

## **ACADEMY POSTAL ADDRESS:**

The Academy for Professional  
Education and Training  
P.O. Box 166  
QLD 4220  
Australia

## **CONTACT DETAILS:**

The Academy for Professional  
Education and Training  
Queensland, Australia.  
TEL. +61 (7) 55 201 333  
[www.apetorg.com.au](http://www.apetorg.com.au)

## **ALTERNATE CONTACT:**