MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

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AGEING ASSETS – LIFE EXTENSION STUDIES

"Strategies to Assess, Maintain, and Extend the Operational Life of Critical Infrastructure"

Schedule

Date	Venue	Fees (Face-to-Face)
09 – 13 Nov 2026	London – UK	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training, In-House Training

Introduction

As infrastructure, industrial plants, and equipment age beyond their original design life, operators face complex decisions about continued service, risk, and replacement. Life extension studies provide a structured, engineering-based approach to determine how ageing assets can be safely and reliably operated beyond their intended lifespan.

This intensive course equips professionals with the knowledge and tools to assess degradation, perform remaining life evaluations, and implement cost-effective maintenance and monitoring strategies. Participants will explore best practices in integrity management, risk assessment, and regulatory compliance to support safe life extension of critical assets.

Objectives

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

- Understand the key drivers and methodologies behind asset life extension studies
- Evaluate the condition of ageing assets using inspection, monitoring, and testing techniques
- Perform risk-based assessments and develop justifications for continued operation
- Design asset integrity and maintenance programs tailored for life extension
- Comply with industry standards and regulatory frameworks for ageing infrastructure

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Why Attend

- Extend the life of high-value assets without compromising safety or performance
- Learn proven methodologies for condition assessment, risk ranking, and fitness-for-service
- Optimize asset investments through cost-benefit analysis and prioritization
- Stay ahead of regulatory expectations and inspection regimes for ageing assets
- Minimize downtime and unexpected failures by implementing targeted interventions

Target Audience

This program is designed for:

- Asset integrity and maintenance engineers
- Plant managers and operations supervisors
- Inspection and reliability professionals
- Structural, mechanical, and process engineers
- Regulatory compliance officers and HSE managers

Individual Benefits

Key competencies that will be developed include:

- Assessment of degradation mechanisms and ageing indicators
- Life extension strategy development based on technical and economic criteria
- Use of condition monitoring and non-destructive testing (NDT)
- Decision-making based on risk-informed maintenance planning
- Understanding of international asset life extension codes and practices

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved lifecycle value from ageing infrastructure and equipment
- Better planning for inspection, upgrades, and replacements
- Reduction in operational risk and unexpected failures
- Compliance with asset integrity regulations and industry benchmarks
- Enhanced stakeholder confidence in continued asset performance and safety

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Life extension frameworks, standards, and regulatory insights
- Case Studies – Success stories and failure lessons from real-world ageing asset programs
- Workshops – Condition assessment planning, criticality analysis, and data interpretation
- Peer Exchange – Experience sharing across industries and asset types
- Tools – Inspection templates, degradation tracking logs, and risk ranking matrices

Course Outline

Detailed 5-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Foundations of Asset Ageing and Life Extension

- Module 1: Ageing Asset Management Overview (07:30 – 09:30) • Definitions, challenges, and strategic considerations for ageing assets
- Module 2: Regulatory and Industry Requirements (09:45 – 11:15) • Codes, standards (API, ISO, ASME), and operator obligations
- Module 3: Workshop – Ageing Risk Identification (11:30 – 01:00) • Identify high-risk ageing assets within a sample facility
- Module 4: Peer Exchange – Cross-Sector Ageing Issues (02:00 – 03:30) • Discuss ageing challenges in oil & gas, power, utilities, etc.

Day 2: Condition Assessment and Inspection Strategies

- Module 5: Degradation Mechanisms and Damage Modes (07:30 – 09:30) • Corrosion, fatigue, creep, erosion, and material embrittlement
- Module 6: Inspection and Monitoring Techniques (09:45 – 11:15) • NDT, thickness gauging, vibration analysis, thermography
- Module 7: Workshop – Developing a Condition Assessment Plan (11:30 – 01:00) • Create an inspection matrix and monitoring schedule
- Module 8: Case Study – Pipeline Ageing and Monitoring (02:00 – 03:30) • Assessment of wall thinning and corrosion defects

Day 3: Life Extension Engineering and Fitness-for-Service

- Module 9: Fitness-for-Service (FFS) Methodologies (07:30 – 09:30) • API 579/ASME FFS procedures and flaw evaluation techniques
- Module 10: Remaining Life Estimation Models (09:45 – 11:15) • Predictive calculations based on degradation rates
- Module 11: Workshop – Life Prediction for Static Equipment (11:30 – 01:00) • Estimate remaining life for a pressure vessel or exchanger
- Module 12: Peer Exchange – When to Repair vs. Replace (02:00 – 03:30) • Cost-risk tradeoffs and decision logic

Day 4: Risk-Based Strategies and Maintenance Planning

- Module 13: Risk-Based Inspection (RBI) Principles (07:30 – 09:30) • Criticality assessment, probability of failure, and consequence modeling
- Module 14: Maintenance and Integrity Program Design (09:45 – 11:15) • Aligning maintenance tasks with life extension goals
- Module 15: Workshop – Building a Life Extension Maintenance Plan (11:30 – 01:00) • Apply RBI and inspection findings into a 5-year plan
- Module 16: Case Study – Offshore Facility Life Extension (02:00 – 03:30) • Managing ageing topside and subsea assets

Day 5: Strategy, Documentation, and Implementation

- Module 17: Life Extension Justification Reports (07:30 – 09:30) • Documentation for internal approvals and external regulators
- Module 18: Asset Data Management and Governance (09:45 – 11:15) • Recordkeeping, digital twins, and CMMS integration
- Module 19: Final Project – Asset Life Extension Strategy (11:30 – 01:00) • Develop and present a strategy for an ageing facility asset
- Module 20: Wrap-Up, Feedback, and Certification (02:00 – 03:30) • Summary and certificate awarding

Certification

Participants will receive a Certificate of Completion in Ageing Assets – Life Extension Studies, confirming their capability to assess, justify, and manage the continued operation of ageing infrastructure and equipment in line with industry best practices.

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Why Choose MAWA Events

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In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**