

## *Certificate Course in Maintenance Planning*

### Course Outline:

#### Day 1: Introduction to Maintenance & Fundamentals

- Overview of Maintenance:
  - ✓ Definition, objectives, and importance in industries.
  - ✓ Types: Reactive, preventive, predictive, and corrective maintenance.
  - ✓ Impact on operational efficiency, safety, and costs.
- Maintenance Lifecycle
  - ✓ Asset lifecycle stages (design, operation, retirement).
  - ✓ Role of maintenance in asset longevity.
- Key Terminology
  - ✓ MTBF (Mean Time Between Failures), MTTR (Mean Time to Repair), OEE (Overall Equipment Effectiveness).

#### Day 2: Maintenance Planning & Scheduling

- Planning Process
  - ✓ Steps: Identification, prioritization, resource allocation, scheduling.
  - ✓ Work order management and documentation.
- Roles & Responsibilities
  - ✓ Planner, technician, and manager roles.
  - ✓ Collaboration with operations/production teams.
- KPIs for Effective Planning
  - ✓ Downtime reduction, backlog management, cost control.

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## Day 3: Preventive (PPM) & Corrective Maintenance

- Preventive Maintenance (PPM)
  - ✓ Strategies: Time-based vs. usage-based maintenance.
  - ✓ Developing PPM schedules and checklists.
- Corrective Maintenance
  - ✓ Root cause analysis (RCA) and failure modes.
  - ✓ Balancing reactive vs. proactive approaches.
- Case Study
  - ✓ Optimizing PPM intervals using historical data.

## Day 4: Predictive Maintenance & Technology Tools

- Predictive Maintenance (Pd.M.)
  - ✓ Techniques: Vibration analysis, thermography, oil analysis.
  - ✓ IoT sensors and real-time monitoring.
- CAFM/CMMS Systems
  - ✓ Overview of Computer-Aided Facility Management (CAFM) and CMMS.
  - ✓ Software demo: SAP, IBM Maximo, Upkeep.
- Energy Management Integration
  - ✓ Aligning maintenance with energy efficiency goals (e.g., HVAC optimization).

## Day 5: AI in Maintenance & Future Trends

- AI/ML Applications
  - ✓ Predictive analytics for failure forecasting.
  - ✓ Digital twins and prescriptive maintenance.
- Software Deep Dive
  - ✓ AI-powered tools: Spark Cognition, Fiix, Augury.

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- **Workshop**
  - ✓ **Simulating AI-driven maintenance scenarios.**
- **Emerging Trends**
  - ✓ **Augmented Reality (AR) for remote assistance.**
  - ✓ **Blockchain for maintenance record transparency.**

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|-------------------|---------------------------------|
| <b>Location</b>   | <b>Dubai – Shangri-La Hotel</b> |
| <b>Start Date</b> | <b>03 Aug 2025</b>              |
| <b>End Date</b>   | <b>07 Aug 2025</b>              |