



MECHANICAL MODULE (MM-1)

MAINTENANCE MODULE TRAINING PROGRAM

COURSE OVERVIEW

This course is designed to provide mechanical knowledge and skills to those who need to perform first-line mechanical maintenance tasks including the safe isolation, replacement, and testing of a range of common mechanical devices in a safe and effective manner. Importantly, the format of the course is specifically designed and combined with suitable on-site consolidation during the training delivery. This program covers in 2 weeks as per 2 days per week. For 8 major topics will blend in this interactive forum where the instructor will lead the discussion between participant to maximize the learning experience.

LEARNING OBJECTIVES

Upon completion of this course, the participants will learn:

- Piping & Fitting Design and Troubleshooting
- Mechanical Drive & Transmission Maintenance Practice
- Pump Maintenance, Overhaul and Alignment
- Maintenance Aspect for Valve and Actuators
- Bearing & Machinery Lubrication Technology
- Heat Exchanger & Vessel Inspection
- Material Welding & Corrosion and Non-Destructive Test


Throughout this course, participants will learn mechanical systems operation, troubleshooting and maintenance best practices. Participants will also be able to demonstrate the different types of inspections and operating factors which will influence the maintenance schedules. Facilitated and guided by our experienced and qualified instructors, MTS remains committed to deliver the best and informative training experience for the participant.



COURSE METHODOLOGY

- Theoretical through interactive **ONLINE** training
- Video Presentations, Case Study Exercises
- Discussions, Experience Sharing Sessions
- Training Materials will be in English
- Lectures will be conducted in English/Bahasa Malaysia
- Questions and Answers (Q&A) sessions

WHO SHOULD ATTEND?

- Technicians & Engineers
 - Managers and Head of Department
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LEARNING SCHEDULE

Day 1:

9.00am –12.00pm

Piping and Fitting

- Introduction to Piping & Fittings including piping codes, standards and designs.
- Discussions and knowledge sharing on the maintenance aspects of piping, covering the maintenance strategies, preventive maintenance, inspections and failures.
- Two (2) case studies will be discussed.

12.00pm –01.00pm

Mechanical Drive and Transmission

- Overview of the various types of mechanical drive and transmission

01.00pm – 02.00pm

LUNCH BREAK

02.00pm –05.00pm

Mechanical Drive and Transmission (continued)

- Discussions and knowledge sharing on the maintenance aspects of mechanical and drive transmission including maintenance strategies, preventive maintenance, and common failures.
- A case study on diaphragm coupling failure.

Day 2

9.00am –12.00pm

Pump Maintenance, Overhaul and Alignment

- Introduction to different types of pumps, their components and working principles
- Discussions and knowledge sharing on maintenance best practices, inspection, failures, troubleshooting, overhaul and impeller repair methods.
- Pump alignment methods.
- A case study on pump excessive vibration.

12.00am –01.00pm

Valves and Actuator

- Overview of the different types of valves and actuators, their applications, components, working principles and rating.

01.00am – 02.00pm

LUNCH BREAK

02.00pm – 05.00pm

Valves and Actuator (continued)

- Discussions and knowledge sharing on the maintenance of valves and actuators covering the maintenance strategies; corrective, preventive and predictive maintenance; best practices, inspections, assessments, failures, troubleshooting and repair.



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Day 3

9.00am – 12.00pm

Bearing & Machinery Lubricant Technology

- Bearing overview, classifications, applications, designs and working principles, lubricant selection, lubrication methods and lubrication tips.
- Discussions and knowledge sharing on bearing maintenance strategies, best practices, common rolling bearing failures and causes, journal bearing inspection and common defects.
- A case study on gear box failure.

12.00am – 01.00pm

Fundamental of Materials, Welding & Corrosion

- Welding codes and standards covering commonly used codes and standards, WPS, PQR, WPQT, joint design and profiles, welding positions, material weldability, and Welding Inspector Qualification
- Introduction to the different types of welding, their working principles, advantages and limitations.

01.00am – 02.00pm

LUNCH BREAK

02.00pm – 05.00pm

Fundamental of Materials, Welding & Corrosion (continued)

- Weld defects and methods of assessment, applicable codes for assessments, post weld heat treatment, brazing, and soldering.
- Discussions and knowledge sharing on corrosion, covering types of corrosion, corrosion detection and protection.
- A case study on sagging of steam pipe.

Day 4

9.00am – 12.00pm

Heat Exchanger & Vessel Inspection

- Introduction to heat exchangers and unfired pressure vessels covering classifications, design codes and standards, constructions, working principles, applications, and DOSH requirements regarding unfired pressure vessels
- Discussions and knowledge sharing on preventive maintenance of heat exchangers, inspection of unfired pressure vessels, best practices, and heat exchanger failures.
- A case study on heat exchanger explosion.

12.00pm – 01.00pm

Non –Destructive Test

- Overview of welding and non-welding defects
- Introduction to NDT and NDT codes and standards.

01.00pm – 02.00pm

LUNCH BREAK

02.00pm – 05.00pm

Non –Destructive Test(continued)

- Discussions and knowledge sharing on NDT methods, applications, capabilities and limitations, certification and statutory requirements
- Destructive Testing
- A case study on boiler tube premature failure



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OUR TRAINER



Mazlan MOHD SOM

possesses a BSc in Mechanical Engineering. Contribution in power industry more than 30 years he is experienced in O&M of **Coal-fired** and oil-fired power plant (Kapar Energy Venture), **Gas turbines**, combined cycle power plant (Tuanku Jaafar Power Plant) and **Hydro-electric power plant** (Sg Perak Power Stations).

On Engineering Profession, Mazlan MOHD SOM experienced as:

- General Manager - Sg Perak Power Stations (2012-2018):
 - Managing 7 hydro plants of the Sg Perak Hydro Scheme, inclusive of Pergau Hydro Scheme
 - Interaction with various authorities (JPS, LAP, JAKOA, Jab Pertanian, Jab Perhutanan, ADUNs)
- Head Production, Tuanku Jaafar Power Plant:
 - Safe operations of PD1 & PD2 Combined Cycle Gas Turbines
 - Operational highlights; managing the 2010/11 Petronas gas shortage crisis
 - Improve the station safety procedures for overhauls with contractors (Remaco)
- Head Engineering & Reliability, Kapar Energy Ventures:
 - Improving the reliability and availability of the plants through RBI, RCM, CBM, Turnaround, improvement projects initiatives.
- Senior Resident Engineer (QA & QC) Phase 3, SSJSSAA:
 - Quality assurance of the construction of 2x500 MW unit boilers (coal/gas) and steam turbines and its auxiliaries.
 - Managing project construction, interaction with international contractors, IHI & GE



Muhammad Zahir MOKHTAR

has 32 years of power plant working experiences with Tenaga Nasional Berhad. He acquired the experience in power plant O&M through his involvement in maintenance, operation, asset and project development, project management, and project engineering.

He started of in 1988, as an:

- Assistant Steam Turbine Maintenance Engineer at Stesen Janaelektrik Sultan Salahuddin Abdul Aziz
- Appointed as Assistant Operation Engineer and went on to work at the Coal Handling Plant of the same power plant He gained the experience in boiler maintenance when he held the post of the Senior Boiler Maintenance Engineer for Stesen Janaelektrik Sultan Ismail.

His first project management experience is when he joined the project management team of Kapar Phase 3 Coal-fired Power Plant Pro-ject.

Other power plant project experiences were later acquired while holding the following posts:

- Senior Engineer (Generation Asset Manage-ment) for all thermal generation projects
- Senior Manager for the development of 300 MW power plant project in Lahad Datu
- Site Manager for Manjung 5 supercritical coal-fired power plant project

He ended his career with TNB as the Chief Engi-neer (Engineering Services).



Ir. Ts. Mohd Razlan ROZALI

is a Certified Steam Engineer Grade 1 and his experience in power industry has put him as one of the top of the notch trainer for Power Plant Mechanical Equipment & Appliances. His TTT by HRDF and CTP by ARTDO allow him to deliver specific training within his expertise. Currently Ir Ts Razlan is capable of delivering Mechanical and Operation Modules.



COURSE FEE

Registration Fee	Session Date	Price/Head (Please select)
Mechanical Module (MM-1): Maintenance Module Training Program	Day 1 & 2: 18 – 19 Jul 2022	RM 400.00 <input type="checkbox"/>
	Day 3 & 4: 25 – 26 Jul 2022	RM 400.00 <input type="checkbox"/>
You can register by emailing or contacting us as per below details: Email: akmar.anwar@malakoff.com.my huzairi.abusamah@malakoff.com.my		

Please register the following personnel to attend above the training. Please photocopy/use list of participants for multiple bookings

ATTENDEE DETAILS

Company Name: _____
 Company Address: _____

Contact Person (PIC): _____
 Telephone (PIC): _____
 Email (PIC): _____
 Participant Name: _____

Authorized Signature	Company Stamp

Cancellation & Payment Policy

You may substitute the participants at any time. No cancellation is allowed upon issuance of confirmation and tax invoice. Payment has to be made before or 30 days from the invoice date. Invoice will be sent after the completion of training.

Program Policy

*Our consultant and topics is confirmed at the time of this proposal submission. However, circumstances beyond the control of the organizers may occur. MTS reserves the right to alter or modify the advertised speakers/dates/topics if necessary. However, the courses and documents are **NOT** supposed to cover all subjects, nor do they completely match the equipment, supplied, or operated by the customers.*

Other Terms & Conditions

Other terms and conditions not specified in this Proposal shall be referred to MTS General Terms & Conditions as attached herein.

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