



INSTITUTE OF MATERIAL, MALAYSIA

IMM Materials Training Course

Metallurgical Failure Investigation Course

Code: MFI

HRDF claimable

This three-day course aims to equip participants with a broad background knowledge of failure investigation techniques and procedures. The course has an emphasis on metallic materials but in varied industries, *e.g.* oil & gas, aerospace and railways, so participants can leverage on parallels. The class is based on theory lecture, interactive discussion, case studies and practical demonstration.

Reference standards (reference used shall refer to the latest published document):

- TBA

Who should apply

- Engineers from all industries particularly oil & gas, aerospace and railways
- Material scientists and engineers
- Project engineers
- Asset integrity engineers.

Objectives

- To have an overall view of the techniques and procedures involved in failure investigation
- To understand site preparation, on-site metallography and sample extraction
- To illustrate methodologies for analysis of data
- To identify different failure modes

Course topics

- The standard procedures of an investigation
- The modes of failure including the four fracture modes *e.g.* Dimple Rupture, cleavage, fatigue and cohesiveness rupture and their various mechanisms, corrosion, environmentally assisted cracking, *e.g.* chloride stress corrosion cracking, nonsensitive, hydrogen embrittlement
- Methodologies of data analysis
- Case studies
- On-site metallography and replication

Course duration

3 days

Pre-requisite(s)

No previous working experience is required.

Certificate awarded

Certificate of attendance