MAWA EVENTS

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

Phone: +601116373203 | **Email:** info@mawaevents.net

METALLURGY FOR NON-METALLURGY DELEGATES

"Demystifying Metals: Practical Metallurgy for Technical and Non-Technical Professionals"

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

This course is designed for professionals who interact with metallurgical processes, components, or decisions but do not have a formal background in metallurgy. Through clear explanations, practical examples, and real-world applications, participants will develop a working knowledge of metals, their behavior, properties, failure mechanisms, and selection criteria. This understanding is essential for ensuring product integrity, safety, performance, and cost-effectiveness across engineering, procurement, and operations.

Objectives

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

- Understand basic metallurgy concepts and metal classifications
- Interpret material specifications and mechanical property charts
- Recognize the impact of heat treatment and alloying on performance
- Identify common metal failures and their causes
- Communicate more effectively with metallurgists and materials engineers

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Why Attend

- Bridge the knowledge gap between engineering design and material performance
- Make informed decisions in procurement, maintenance, and quality control
- Reduce component failure and material-related downtime
- Collaborate more effectively with technical teams and vendors

Target Audience

- Procurement and quality assurance professionals
- Engineers from non-metallurgy backgrounds
- Project and maintenance managers
- Technical sales and support staff
- Asset and reliability managers
- Anyone involved in materials selection or metal-related decisions

Individual Benefits

- Gain confidence in understanding metallurgical terminology and behavior
- Enhance your decision-making in selecting materials and suppliers
- Reduce the risk of costly errors in specifying or using metals
- Improve your ability to detect and prevent material-related failures

Organizational Benefits

- Stronger technical alignment across departments
- Fewer failures from incorrect material use or oversight
- Improved vendor management and specification compliance
- Increased cost-efficiency in materials selection and maintenance

Instructional Methodology

- Instructor-led sessions with visual aids
- Interactive material property demonstrations
- Group case discussions and practical examples
- Simplified schematics, videos, and failure analysis visuals
- End-of-day reviews and Q&A

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Course Outline

DETAILED 5-DAY COURSE OUTLINE (Customizable) Training Hours: 07:30 AM – 03:30 PM Daily Format: 3–4 Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1 – Introduction to Metallurgy & Material Properties

- Module 1 (07:30 – 09:30): What is Metallurgy? Overview & Importance
- Module 2 (09:45 – 11:15): Mechanical Properties: Strength, Toughness, Hardness
- Module 3 (11:30 – 01:00): Physical & Chemical Properties: Density, Corrosion, Conductivity

Day 2 – Classes of Metals and Alloys

- Module 4 (07:30 – 09:30): Ferrous Metals: Carbon Steel, Stainless Steel, Cast Iron
- Module 5 (09:45 – 11:15): Non-Ferrous Metals: Aluminium, Copper, Titanium, Nickel
- Module 6 (11:30 – 01:00): Alloying Elements and Their Impact on Performance

Day 3 – Processing and Heat Treatment

- Module 7 (07:30 – 09:30): Metal Manufacturing: Casting, Forging, Rolling
- Module 8 (09:45 – 11:15): Heat Treatments: Annealing, Quenching, Tempering
- Module 9 (11:30 – 01:00): Welding Effects and Metallurgical Changes

Day 4 – Failure Modes and Corrosion

- Module 10 (07:30 – 09:30): Common Failure Modes: Fatigue, Wear, Fracture
- Module 11 (09:45 – 11:15): Corrosion Types and Prevention Techniques
- Module 12 (11:30 – 01:00): Case Studies in Metallurgical Failures

Day 5 – Material Selection & Standards

- Module 13 (07:30 – 09:30): Criteria for Material Selection
- Module 14 (09:45 – 11:15): Reading and Interpreting Material Standards (ASTM, ASME, ISO)
- Module 15 (11:30 – 01:00): Final Workshop: Choosing the Right Material for Application

Certification

Upon completion, participants will receive a Certificate of Achievement in Practical Metallurgy for Non-Specialists, recognizing their ability to understand, evaluate, and communicate metallurgical issues within technical environments.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

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