

Session Code: **IJM07**

Manufacturing  
Improvement  
Training Program

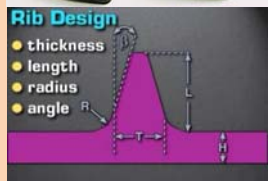
2-day Technical Training Course

**Program: MANUFACTURING INSIGHTS SKILLS (MIS)**

**Session Topic:** Product Design and Secondary Operations

**By: William Lee**

**SBL TRAINING PROGRAM**



### Course Objective

The objective of this patented MIS program is to raise technical competency of technical employees from local manufacturing industry for product quality & productivity improvement through understanding of vital manufacturing variables. At the end of the MIS training, participants will realize the importance of technical details study & the introduction of science & engineering procedures to their existing practices for a profitable manufacturing operation.

### Session Overview

The use of plastics continues to increase because of key benefits the materials have brought to the society. Product and mould designers, mould makers, moulders and buyers are always looking for practical design to enhance part performance, ease of mouldability, avoid unnecessary moulding & assembly defects, decreased part assemblies, reduced processing time, weight savings, and corrosion resistance. Practically a large number of technical personnel from the plastic moulding industry often unaware of the impact of the first step product design on mouldability, post mould processing and product performance. Created to provide assistance for those involved in plastic injection moulding & its final finishing products, this course will examine the concepts of product design for manufacturability & serviceability as well as the various post moulding operations for plastic parts. Case histories will highlight plastic parts and systems design. In-class explanation will discuss the practical ways of proper product design.

### Benefits

1. Learn good practices in product design for injection moulded parts.
2. Gain design guidelines for part geometry to achieve mouldability & functionality.
3. Study the many assembly and disassembly features in plastic product design.
4. Find out various plastic finishing processes used in industry and ways to achieve such finishes.

### Course Contents

#### 1. Design for Mouldability:

- Design guidelines for part geometry: Wall thickness; Flow leader; Flow Restrictor; Draft angle design; Lettering & logo design; External undercut; Internal undercut; Methods for undercut clearance.

#### 2. Design for Part Performance:

- Design guidelines for structural strengthening: Ribs design, Gussets; Bosses; Blind holes & through holes; Corner design.

#### 3. Design for Assembly:

- Design guidance for assembly & disassembly feature: Mechanical fastening; Snap fit joints; Heat staking; Ultrasonic welding & Adhesive bonding.

#### 4. Design for Finishing:

- Degating; Deflashing; Cleaning; Static Charge & Electrical Dipoles and Paint Adhesion, Decorating (painting, plating, vacuum metallization, hot stamping, pad printing, silk screening, fill & wipe); SPI Surface Finishing Guidelines; Surface pretreating (etching, flame treatment, corona discharge, plasma conditioning). Surface energy, Surface wettability.

## Course Instructor



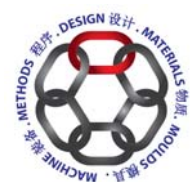
William Lee - Malaysian, Materials Engineer with an honorable Bachelor Degree awarded by The Engineering Council of London (EC, UK). He has over 25 years working & teaching experience in manufacturing industry. William possesses strong fundamentals knowledge in technical science & has special talent to communicate and explain to others the principles involved in various engineering fields. His ability to present and link the various engineering disciplines with real industrial use has made many of his course participants to appreciate the significant of technical details study for manufacturing improvement. Over the years, he has developed a series of patented Manufacturing Insights Training Skills (MIS) training programs for various manufacturing industries. He is now a full time contract speaker for a few training organizers as well as professional associations in ASEAN & Australia. William will bring a wealth of teaching experience to this program along with his strong industrial background as a former engineering practitioner in tooling, materials, heat treatment, moulding & metal forming divisions. In addition, William is a versatile trilingual instructor who can instruct technical courses in English, Bahasa Malaysia or Mandarin (or a combination of the languages) to ensure full understanding of his presentation by his trainees from all levels.

## Target Participants

This course is designed for industrial designers, product designers, project engineers, manufacturing engineers, assembly engineers, tooling, processing, and production engineers, mould makers & technical purchasers or anyone involved with plastic injection parts will benefit from this user friendly course.

## Administrative Details

1. Should public training not be scheduled for this program we will consider opening an ad hoc public training class if you've minimum guaranteed participants to attend this program.
2. We can bring this program to your premises as in-house training event for your in-house employees only. Interested participating company may contact us for an in-house training proposal.
3. In-house training can be conducted on weekdays or weekends (including public holidays) to meet the scheduling needs of your targeted staff.
4. For in-house training, a list of participants complete with their full name & designation must be presented to training provider one week prior commencement of each program. The total no. of training manual is supplied to the actual no. of turned out attendees only.
5. Substitute is allowed to replace the earlier registered person if he / she is unable to attend the training program (both public and in-house training). Participating company must inform us the details of replacement person.
6. All programs are of SBL (Skim Bantuan Latihan) type. Eligible company (Human Resources Development Fund contributor) must apply through themselves for the rebate of any eligible expenses (including training fees) from Human Resources Development Council. Training provider bears no responsibility for the approval of training grants or any form of rebates between participating company and HRDC.



Organized by:

### **METALLOY CONSULTANT SERVICES PLT**

(Registered Training Provider under Ministry of Finance: 357-02128315)

(Registered Training Provider under PSMB: LLP0003449-LGN)

Tel: 03-80751529 Fax: Go Green; Avoid Fax

Email: [training@metalloy.com.my](mailto:training@metalloy.com.my) Website: [www.metalloy.com.my](http://www.metalloy.com.my)

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