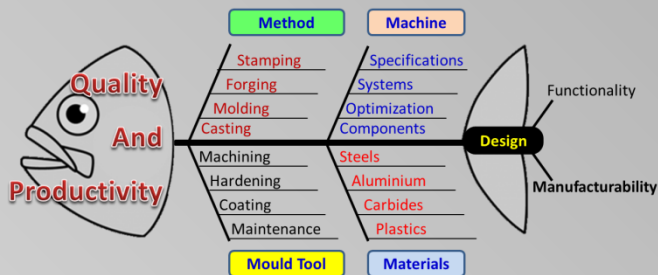


## What is Manufacturing Insights Skills Training<sup>®</sup>?

### The missing link study for manufacturing improvement



Manufacturers are generally concerned about quality and productivity. Many manufacturing issues can be linked to design problems, inappropriate materials selection, poor machine understanding, inferior mould tool performance, incorrect processing control and incompatible supporting equipment. Each of these factors can affect employers, customers and suppliers' business profitability.

Manufacturing Insights Skills<sup>®</sup> Training is developed based on the crucial 5M manufacturing variables (i.e. **M**anufacturable Design; **M**aterials; **M**achine; **M**ould; and **M**ethods of processing) that could affect the manufacturing output results.

Manufacturing Insights Skills<sup>®</sup> Training provides the insight knowledge (**5M** knowledge) of various manufacturing activities to train engineering practitioners (existing and future technical workforce) to become multi-skilled technical specialists who can solve complicated manufacturing problems in a scientific and controllable manner.

Currently there are more than 150 technical topics have been developed by Mr. William under his patented MIS<sup>®</sup> program to serve plastic injection moulding, automobile, semiconductor, precision engineering, heat treatment, steel and metal industries.



Technical "Hard Skills" Enable Production

技术'硬实力'呈型

Technical "Soft Skills" Enhance Performance

技术'软实力'成材

Developing Knowledgeable Workers; Promoting Scientific Manufacturing



### The Learning Program...

Manufacturers are generally concerned about quality & productivity improvement. Profitable manufacturing process relies on competent workforce with a sound knowledge in **Materials**; **Machine**; **Mould**; **Methods** and **Manufacturable Design** (*the 5M factors*) in order to troubleshoot quality & productivity issues. While most training courses are more towards teaching non-technical topics, **Metalloy** is committed to provide technical training programs which will equip technical employees to become technically inclined who can create, design, improve, rectify and manufacture parts, process & technology in a **scientific** way rather than depend on the "**black art**" portion of the process (*if there is one*).



### The Learning Process...

Statistics reveal most of our learning takes place on the job or from our seniors. The former process is hardly focusing owing to busy working schedule for the employees to devote time to true learning while the latter is not effective due to the complex human factors (*such as is the senior willing to train, know how to train & capable to train?*). Both are time consuming learning process. In addition, we also need detailed knowledge of our products & services in order to add value to our manufacturing operation.



Our patented Manufacturing Insights Skills training series + our effective instructor-led class room training and will train you to become knowledgeable and grow into higher role.



### The Learning Objectives...

1. Develop & strengthen technical competency for effective troubleshooting of quality & productivity issues.
2. Get an in-sight of the 5M manufacturing variables & learn how they can impact manufacturability, product functionality, and for effective technical auditing.
3. Introduce science & engineering procedures to existing manufacturing process.
4. Train to be a multi-skills & multidiscipline manufacturing technologist.



### In-House Training...

In-house training saves time, money, and meeting your targeted participants scheduling needs.



### Who Should Learn...

Anyone who wants to know more about insights of manufacturing process, from new hires in the industry, to product design engineers, to manufacturing engineers, supervisors, and others working at a manufacturing or assembly plants. Those with plant floor experience who are lacking a solid understanding of the how's and why's will also benefit.

## IVETA recognizes a unique TVET learning curriculum from a Malaysian technical trainer

The U.S. based International Vocational Education and Training Association ([www.iveta.org](http://www.iveta.org)) in their latest Hotline Issue 1 2017 introduced a unique TVET learning curriculum developed by a Malaysian fulltime technical trainer –William Lee to their global members and TVET training providers.

(<http://iveta.org/resources/Documents/Journal/Hotline/Issue12017.pdf>)

IVETA immediate past president, Carmel Thompson (pic) announced MIST Program in their Hotline Issue 1, 2017. “One of our IVETA members, Mr William Lee of Metalloy Consultant Services PLT in Malaysia has developed a very innovative program called MIST (Manufacturing Insights Skills Training). It is a blended TVET Higher Education and Training model for both working adults and engineering students that aims to produce technically competent workers for the manufacturing industry,” “This program will train and equip our existing and future technical workforce with a sound industrial knowledge and skills to improve manufacturing quality and productivity for the world of today. This program would be especially beneficial for developing countries who are heading for industrialised status in the near future,” said Carmel Thompson.

If you would like to learn more about MIST Program please visit the following link:

<http://www.iveta.org/resources/Documents/MIST%20Paper.pdf>

or email to Mr Lee directly at [training@metalloy.com.my](mailto:training@metalloy.com.my) for more details.

IVETA is a network of vocational educators. The network includes vocational skills training organizations, business and industrial firms, and other individuals and groups interested or involved in vocational education and training worldwide. IVETA is dedicated to the advancement and improvement of high-quality vocational education and training throughout the world. January 2017



“MIST is an excellent, innovative program. I applaud William’s intention for such innovation to create awareness and interest in TVET learning.” Carmel Thompson, IVETA Immediate Past President



The founder of MIST – Mr. William Lee demonstrating to his learners on the use of different steel materials to achieve various mechanical properties and characteristics through different heat treating processes.



### Angela Krepcik

1st

Regional Director Southern and Eastern Office

Melbourne, Australia | Government Relations

Current Victorian Government, Department of Economic Development, Jobs, Transport and Resources

Previous Department of Economic Development, Jobs, Transport and Resources, Advanced Manufacturing Australia

Education Mt Eliza Business School

Send a message

500+  
connections

“William has been a technical trainer for many years and is supported by various Materials Institutions in Australia and Overseas. His area of expertise is materials engineering and is well recognised for his work in training and helping engineers and technologists for many materials related industry sectors.”

February 27, 2013. Angela was William Lee’s client in Melbourne, Australia.

## WILLIAM LEE - MIST® Course Inventor & Fulltime Professional Technical Trainer



### Working Experience

- Former Supervisor in Semiconductor Moulding & Stamping.
- Former Service Engineer for Tooling Defects and Troubleshooting.
- Former Technical Manager for Tooling Materials & Heat Treatment Divisions.

### Training Experience

- B.Sc. (Hons) Engineering Council London, U.K.
- Diploma in Technology (Materials Engineering), TARC, Malaysia
- Course designer & instructor for Patented Manufacturing Insights Skills® (MIST)
- Founder and chief instructor for Metalloy Consultant Services PLT
- Contract speaker for Prima Link Training & Consultancy Sdn. Bhd.
- Certified trainer for Expert Scientific Injection Moulding by A.Routsis Plastic Training Center, USA
- Certified trainer by Human Resources Development Council, Malaysia
- Appointed trainer for unemployed graduates by HR Ministry, Malaysia (MoHR)
- Former trainer for Laures International Sdn. Bhd.
- Former trainer for Malaysian Plastics Manufacturers Association (MPMA)
- Former trainer for Federation of Malaysian Manufacturers (FMM)
- Former trainer for Singapore Productivity & Standard Board (SPSB)
- Former trainer for Society of Manufacturing Engineers, USA (SME)
- Former training Advisor & Designer for Tooling Industry Forum of Australia (TIFA)

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**William Lee** – Malaysian, a qualified Materials & Manufacturing Engineer with an Honourable Bachelor Degree awarded by The Engineering Council of London (EC, UK). He has over 28 years working & teaching experience in materials and manufacturing industry. William possesses strong fundamentals knowledge in technical science & has special talent to communicate and explain to others the principle 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 Skills Training (MIST) 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 stamping 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 for his trainees from all levels.

# Manufacturing Insights Skills Training®

HIGHER TVET CONTINUOUS LEARNING PROGRAM

高级技职再培训终身学习课程



Academically inclined



University Graduates

Existing Employees with working skills & experience



Engineering Practitioner



Non-Academically inclined



TVET Students

Degree Holder

**Benefit**

To enhance employability & career advancement

To become effective troubleshooter for manufacturing improvement



Manufacturing Technologist / Specialist

**Objective**

To develop knowledgeable workers

To promote scientific manufacturing

Diploma Holder

Program invented by:



[www.metalloy.com.my](http://www.metalloy.com.my)

Program endorsed by:



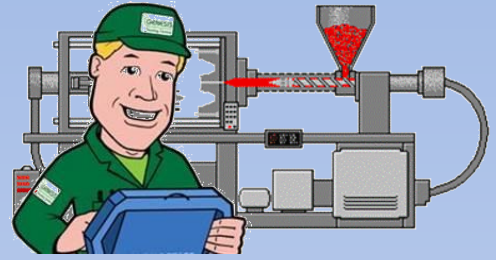
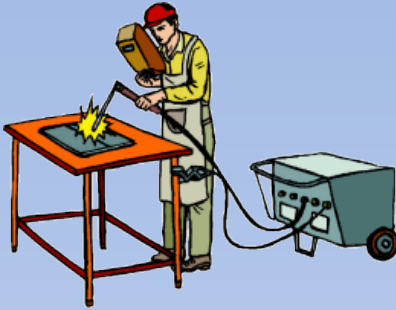
[www.iveta.org](http://www.iveta.org)

Program supported by:



[www.adtectaiping.gov.my](http://www.adtectaiping.gov.my)

# The difference between ordinary technician & technologist



## Welder

### Job skill:

- *Welding*

### 5M-Knowledge:

- *Manufacturable Design*
- *Materials*
- *Machine*
- *Mould/Tool/Jig & Fixture*
- *Method*

### Job performance:

- *Visible & non-visible defects (warpage, HAZ, cracks, residual stress)*
- *Productivity*

## Machinist

### Job skill:

- *Machining*

### 5M-Knowledge:

- *Manufacturable Design*
- *Materials*
- *Machine*
- *Mould/Tool/Jig & Fixture*
- *Method*

### Job performance:

- *Visible & non-visible defects (warpage, HAZ, cracks, residual stress)*
- *Productivity*

## Processor

### Job skill:

- *Production*

### 5M-Knowledge:

- *Manufacturable Design*
- *Materials*
- *Machine*
- *Mould/Tool/Jig & Fixture*
- *Method*

### Job performance:

- *Visible & non-visible defects (warpage, appearance, voids, burrs, residual stress)*
- *Productivity*

**How the 5M-Factor can affect their job performance?**

# Transforming to knowledge-based economy...

QUALITY CONTROL

Passed   
Failed



The number of STEM students is decreasing...and we're very much lacking in R&D!

## 5M Concept Training

MIST will provide vital manufacturing insights knowledge to complement the existing experience, skills & practices for effective technical solution!



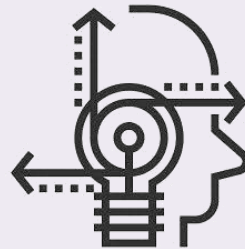
Intelligence



Imagination



Innovation



Initiative



Implementation

5M

+

5i

Scientific Worker  
= Solution Provider  
= Technologist



# MIST® offers upskilling/reskilling/multi-skilling opportunity to enhance employability and future career advancement.

According to Hays recruiting experts, 69% of Malaysian employers are “concerned they don’t have the right talent to achieve current business objectives”.



It is imperative for our workers to upskill, reskill or even multi-skill, in order to remain employable and relevant!



**Employer**



**Employee**

Just one more solid link, and the whole structure will be stabilized



# MIST® In Progress...

