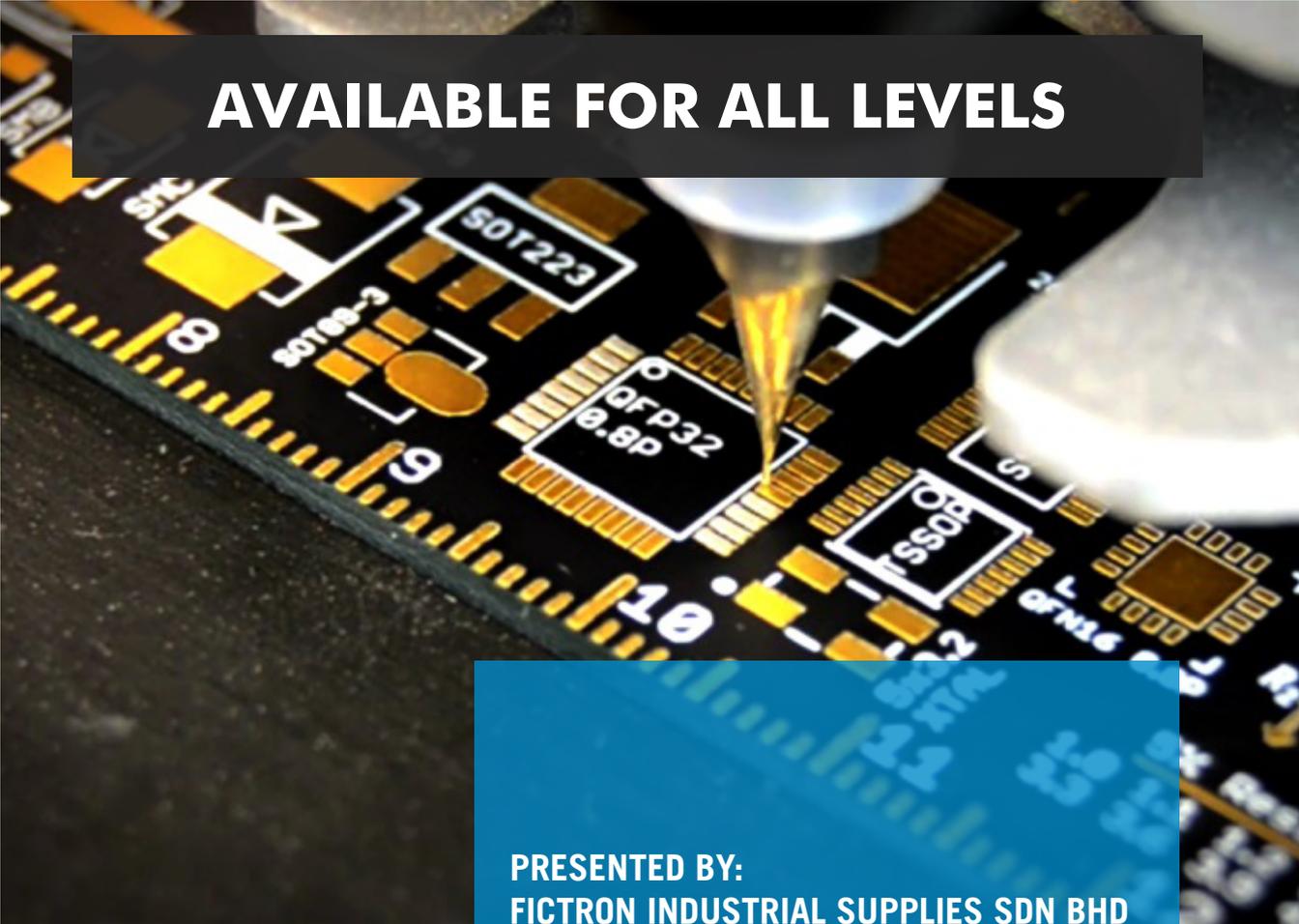




ADVANCED SMT REWORK & SOLDERING TECHNIQUES

MAIN TOPICS:

- ADVANCED SMD REWORK TECHNIQUES USING EPOXY
- SOLDERING / DE-SOLDERING OF ALL SMD PACKAGES
- INNER LAYER PCB TRACK REPAIRS

A close-up photograph of a micro-soldering process on a printed circuit board (PCB). A fine-tipped soldering iron is being used to work on a small component. The PCB is populated with various surface-mount components, including a 50T223 capacitor and a 06P32 0.6P component. The background is blurred, showing more of the board and a magnifying glass.

AVAILABLE FOR ALL LEVELS

**PRESENTED BY:
FICRON INDUSTRIAL SUPPLIES SDN BHD
& IRS TRAINING SDN BHD**

DIFFICULTY LEVELS

A BEGINNER in the electronics field, is considered one whom may have a small knowledge of electricity or may know nothing at all. Such individual would need to learn about electricity, circuitry, how components function in an electrical circuit, and so on to advance in this field.

Although the beginner information is easy to obtain, a fundamental and proper understanding of them will go a long way in understanding more complicated topics later on in more advanced courses.



BEGINNER



INTERMEDIATE

The INTERMEDIATE level in electronics engineering is considered to be the level of an individual whom has at least a diploma in electrical engineering, or has been repairing or building electronic circuits as a hobby.

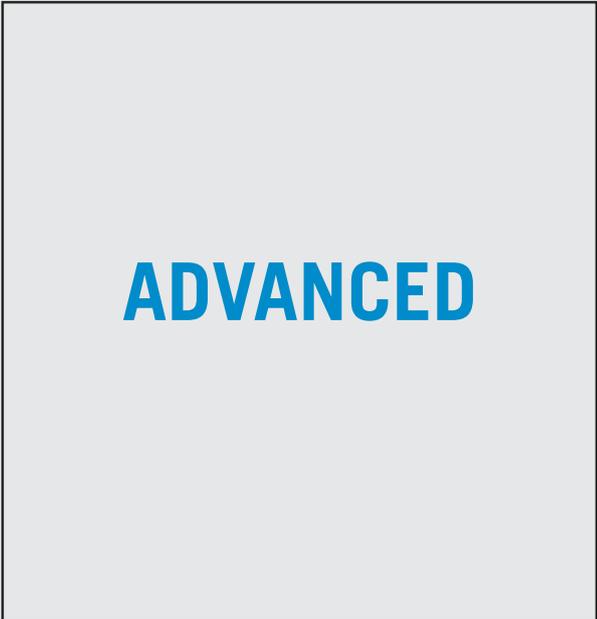
At this level, one would know about the function of components and how to build different smaller scale circuits with them. In the intermediate level, electronic topics become wider and slightly more difficult to understand.

Therefore, building the relevant circuit of every topic is crucial to a deep understanding of higher level discussions and problems later on.

The ADVANCED level in electronic engineering field belongs to individuals whom have finished their bachelors or masters in electronic engineering and have finished quite a few projects in this field.

Such engineers are capable of designing and repairing high-level electronic systems and have no problem tackling different types of electronic circuits. They can learn the methods of repair very quickly and benefit the most from our courses.

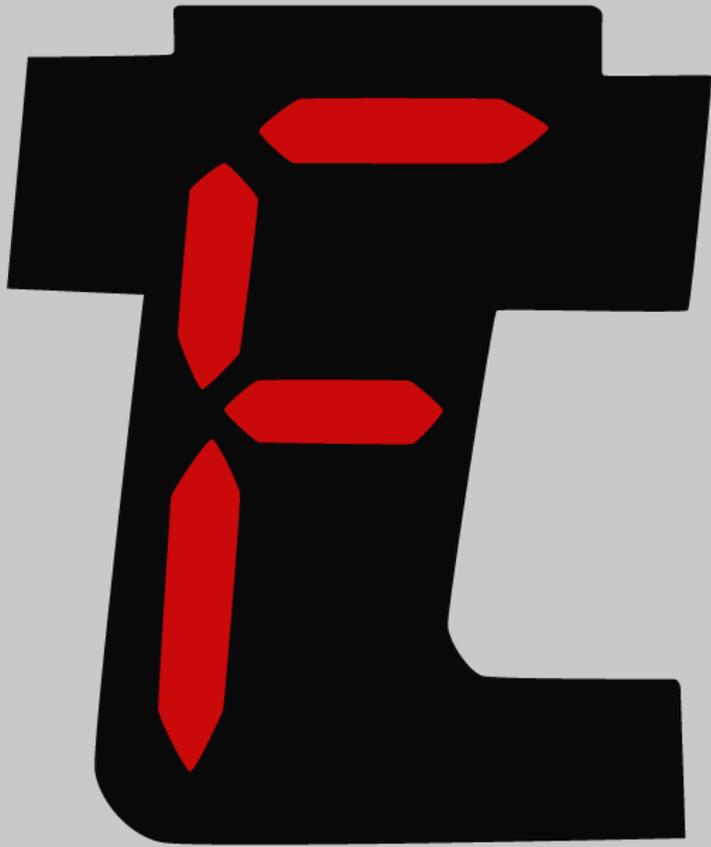
As a result of their advanced level of knowledge, it helps to save time when explaining different methods of repair and advanced circuitry.



ADVANCED

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FICTRON INDUSTRIAL SUPPLIES SDN BHD

SERVING INDUSTRIAL NEEDS

INTRODUCTION

Printed Circuit Boards (PCB) have come a long way since they were invented back in 1936 in Vienna. At the time the concern was to organize the messy wires that connected each node individually and took a considerable amount of time to do so. PCBs managed to address those concerns just as mass prints addressed the concerns of publishing newspapers and books. Organized the wires (words) and made it easier to copy the circuitry.

Today, PCBs are still doing more of the same. However their complexity has increased tremendously in terms of the number of connections they support, and the number of layers they have. A computer or cellphone's motherboard can have as many as 20 layers within. Each layer addressing a different set of connections with regards to a specific RF standard.

"A computer or cellphone's motherboard can have as many as 20 layers within."



"Today, it is quite essential to have fluency in SMD soldering techniques for successful repairs."

As PCBs have advanced, the soldering techniques has evolved accordingly. Today, it is quite essential to have fluency in SMD soldering techniques for successful repairs. It requires skills and art, vigilance and elegance to desolder and solder a 304-pin QFP chip. Or repair the inner tracks of a multi-layer PCB.

Upon successful completion of this course, you'll be able to solder and desolder all types of SMD packages (SOIC, QFN, PLCC, QFP and so on) as well as rework on broken PCB parts with ease. During the rework phase, you will learn how to restore broken parts of a PCB using Epoxy and how to repair surface and inner layers of a PCB.

This is a course that every electronic enthusiast or repair technician should take. It would also help you to notice and fix bad soldering which in many cases helps to repair the PCB without having to change any components.

NOTES:

***This course has been designed for those whom are at the beginner level. It does not entertain electrical engineering methodology and therefore anyone can enter. Soldering is an art that everyone could learn.**

TARGET AUDIENCE

This course would suite those individuals **whom are dealing with PCBs on a daily basis**. Be it a repair technician / engineer or a hobbyist or a project developer who needs to install / remove SMD components from PCBs.

It is also well suited to the repair engineers as the SMD rework section of the module can be very handy in repairing damaged boards. Damaged PCBs would usually experience a bad faith as repair centers would fear repairing them.

This is your chance to learn rework so you can earn bigger rewards in this career. In many cases of repair, the only problem is a bad soldering job.



“In many cases of repair, the only problem is a bad soldering job.”

THE SYLLABUS

Guide To Your Course



1. WHY SMT SOLDERING (SURFACE MOUNTING TECHNOLOGY)?

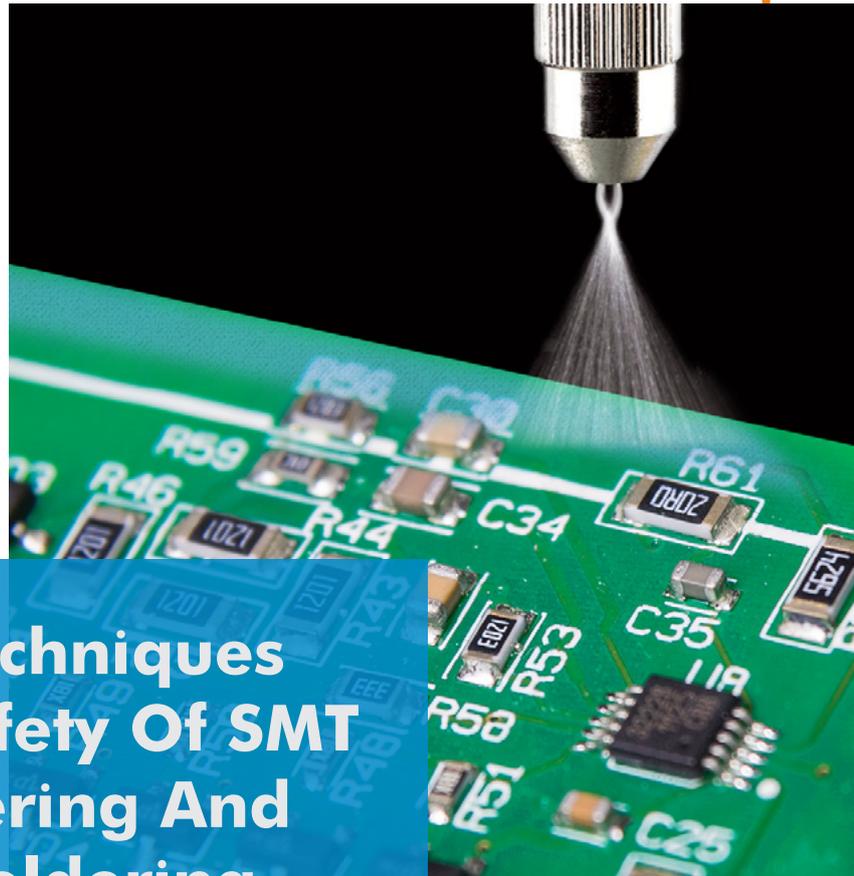
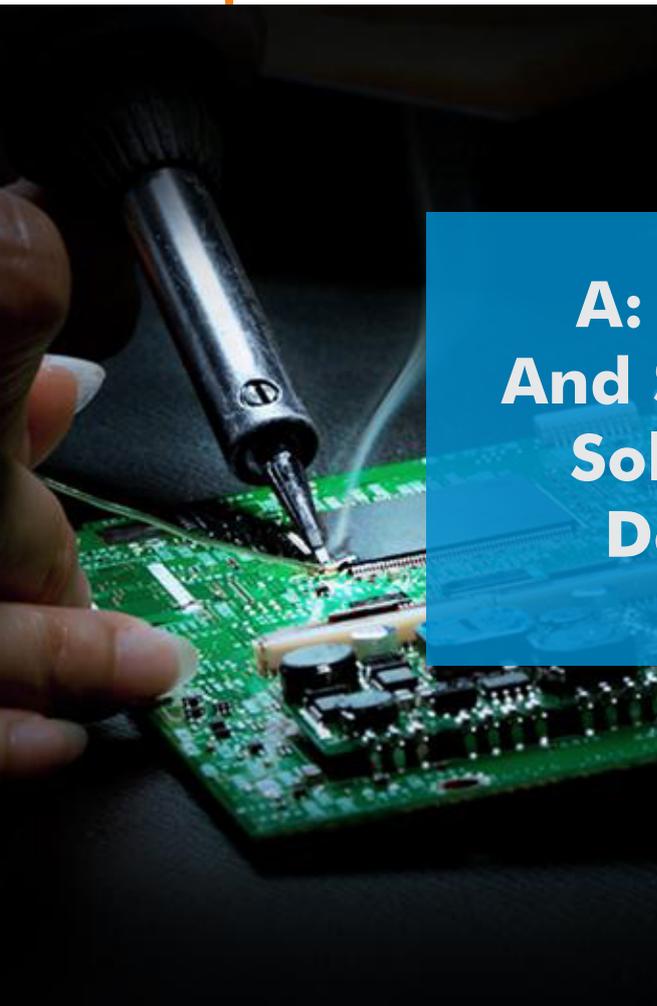
- Packaging Abbreviations
- The Nature of Soldering and of the Soldered Joint
- The Roles of Solder, Flux And Heat
- Hand Soldering Methods
- Wave Soldering
- Reflow Soldering
- Soldering Success

A: Techniques And Safety Of SMT Soldering And Desoldering

2. METHODS OF HANDSOLDERING SMD COMPONENTS

- Necessary Equipment
- Reflow Soldering Using a Soldering Iron with a Regular Tip
- Reflow Soldering Using a Hakko Soldering Tip Bevel T15-CF3
- Reflow Soldering Using a Hot Air Gun





A: Techniques And Safety Of SMT Soldering And Desoldering

3. METHODS OF HAND DESOLDERING SMD COMPONENTS

- Desoldering Components with 2 or 3
- Desoldering VSO, SOJ, PLCC, SO, SOIC
- Desoldering SMD Components Using A Hot Air gun

4. CLEANING AND MAINTAINING YOUR PCB

- Cleaning PCBs
- Cleaning PCB Components



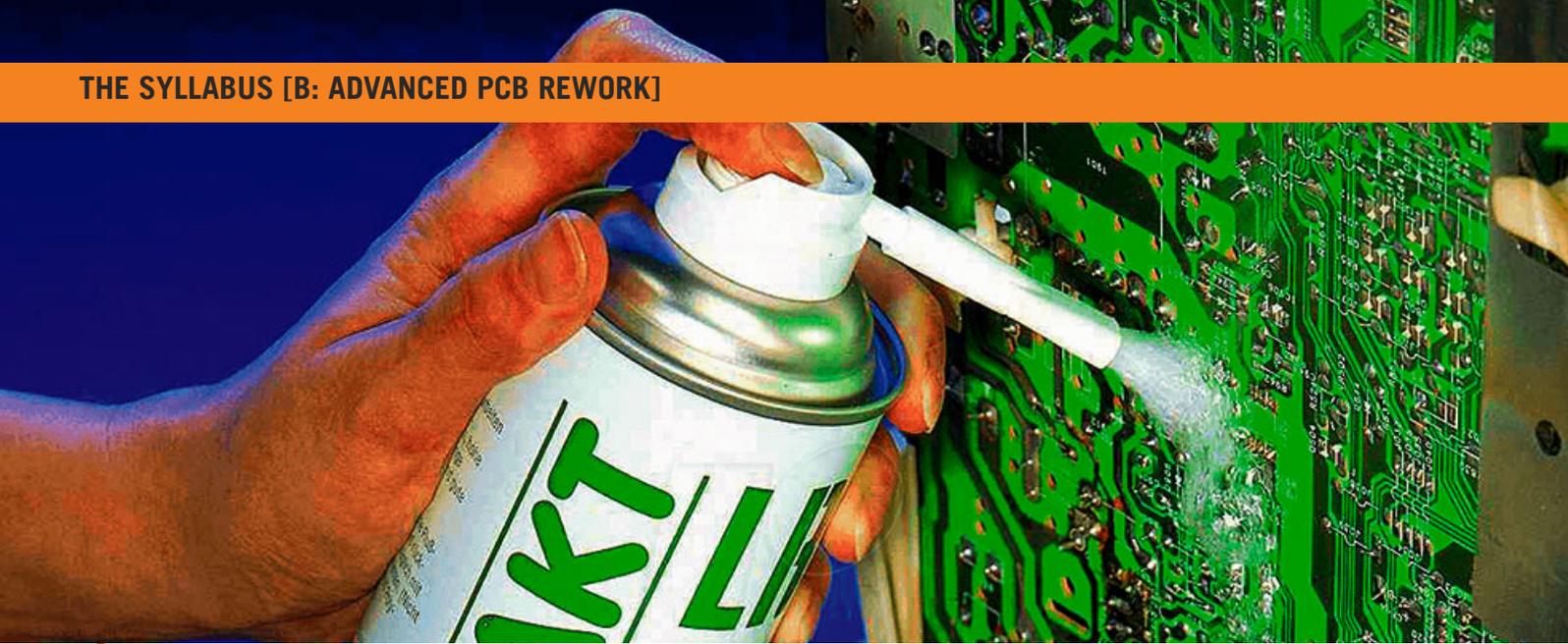
B: Advanced PCB Rework

1. BASIC PROCEDURES

- Coating Removal
- Coating Replacement, Solder Mask
- Epoxy Mixing & Handling

2. BASIC MATERIAL PROCEDURES

- Delamination/Blister Repair, Injection Method
- Key and Slot Repair, Epoxy Method
- Base Material Repair, Epoxy Method
- Base Material Repair, Edge Transplant Method



3. CONDUCTOR AND LAND PROCEDURES

- Conductor Repair, Inner Layer Method
- Circuit Cut, Inner Layer Circuits
- Deleting Inner Layer Connection At a Plated Hole, Drill Through Method
- Deleting Inner Layer Connection At a Plated Hole, Spoke Cut Method

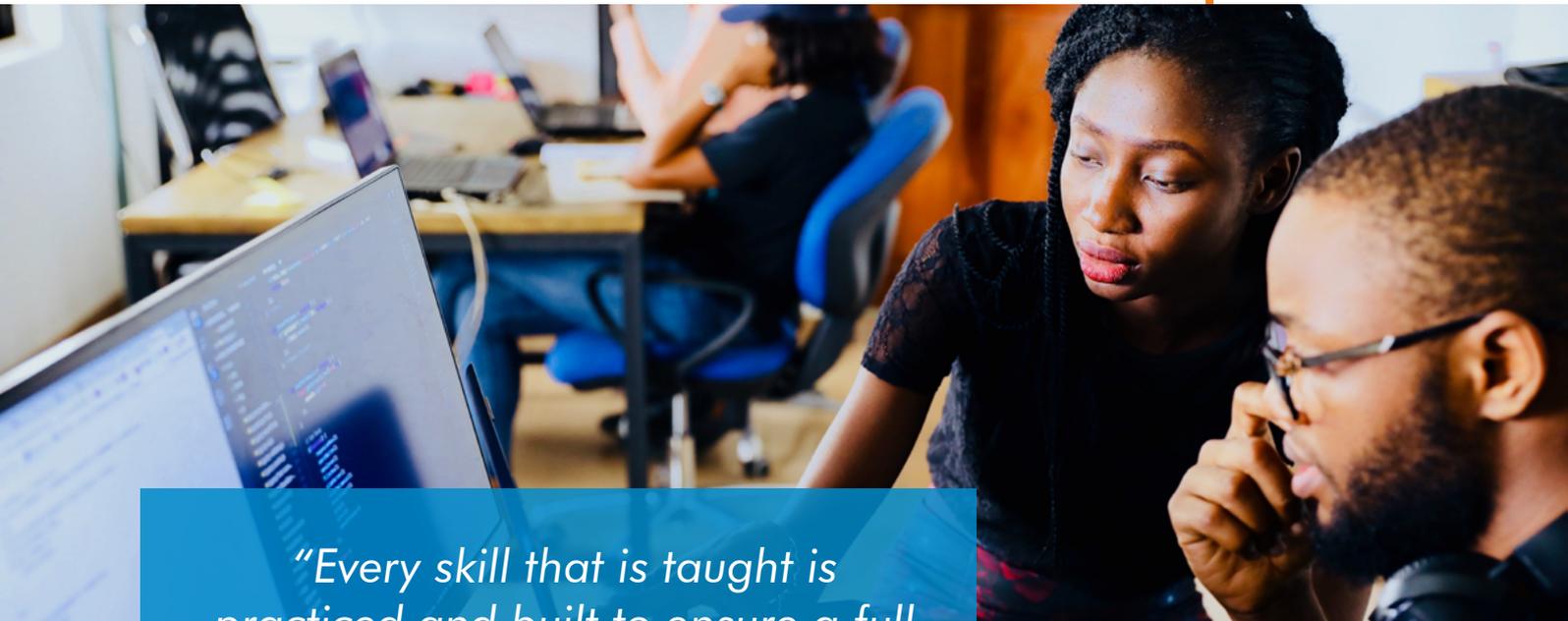
4. PLATED HOLE PROCEDURES

- Plated Hole Repair, Inner Layer Connection

B: Advanced PCB Rework



TRAINING SCHEDULE



“Every skill that is taught is practiced and built to ensure a full understanding of subject matter.”

ITEMS

LESSON : 4 LESSONS A DAY
DURATION : 2 DAYS
QUIZ TIME : 2 TIMES A DAY (TOTAL OF 4 QUIZZES FOR 2 DAYS)
LUNCH TIME: 1230 - 1330 (1 HOUR)

NOTES

1. There are 2 quizzes taken from the participant each day. One is before lunch and the other before the ending of the training day.
2. A day of absence will require the participant to join the next course for that particular day. Same applies to half day of absence.
3. The last 15 minutes of the training session (1645 - 1700) is for reviewing what been taught.
4. There is a 15 minutes break in between each class and the lunch time if from 1230 - 1330.
5. The training course book, quizzes, components and tools are provided by FICTRON.
6. Every skill that is taught is practiced and built to ensure a full understanding of subject matter.



ITINERARY / EVENT

DAY 1 - 2

0915 - 1045 (1 HOUR 30 MINS)

- **LESSON**

1045 - 1100 (15 MINS)

- **BREAKTIME**

1100 - 1230 (1 HOUR 30 MINS)

- **LESSON**
- **QUIZ**

1230 - 1330 (1 HOUR)

- **LUNCH**

1330 - 1500 (1 HOUR 30 MINS)

- **LESSON**

1500 - 1515 (15 MINS)

- **BREAKTIME**

1515 - 1645 (1 HOUR 30 MINS)

- **LESSON**
- **QUIZ**

1645 - 1700 (15 MINS)

- **LESSON REVIEW**



“we believe in an open market whereby the repair information is shared for the greater good of industrial electronics and ease of operation for local factories.”

ABOUT FICTRON

Fictron Industrial Supplies has had extensive experience in repairing industrial electronic Motor Drives, PLC systems, Servo Systems as well as Human Machine Interfaces.

Our engineers are trained in Germany and we are the authorized repair center for **KEB Automation KG**. As an industrial solution provider, we believe in an open market whereby the repair information is shared for the greater good of industrial electronics and ease of operation for local factories.

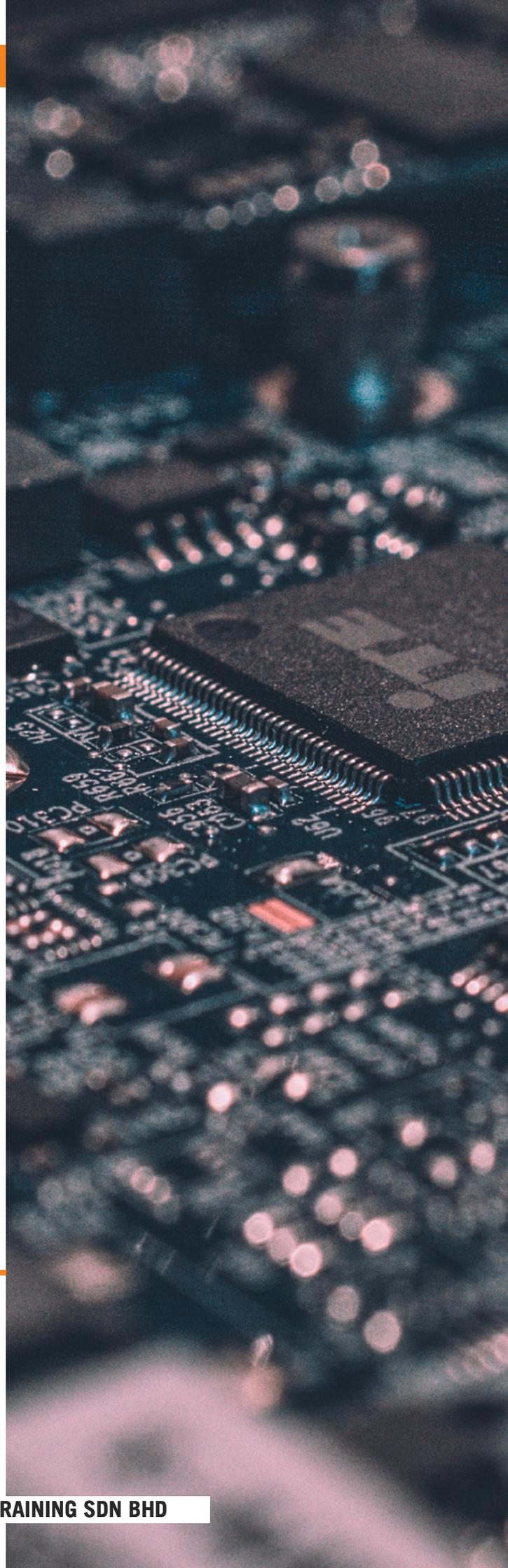
FICTRON REPAIR EXPERTISE

- On-site
- In-house
- Rush repair
- 10+ years experience
- KEB GMBH certified
- Parameter setting
- PLC projects and back up
- & many more



AWARDS

- **16th** Asia Pacific International Honesty Enterprise - Keris Award
- **15th** Asia Pacific International Entrepreneur Excellence Award
- **2th** Top Global Brand Leadership Excellence Award
- **World** Confederation of Businesses - Worldcob-Biz 2019 Award





"IRS believes that in today's era of VUCA, there's no other way but to reinvent."

ABOUT IRS

IRS Training Sdn Bhd, est. in 1997 has been a pioneer in delivering Creativity and Competency based trainings throughout Malaysia and Asia Region. Consistently known for delivering excellent creativity training programs such as **Edward De Bono's Six Thinking Hats & Lateral Thinking**, is also known for LEGO Serious Play and Game Storming. Additionally, IRS is also currently moving into innovative and creativity application on team namely Four Sight Toolset and Mindset certification. Locally, IRS Training is famous for their HRDF Train the Trainer, Evaluation on Effectiveness of Training, Master Trainer and Training Needs Analysis programmes.

IRS believes that in today's era of **VUCA**, there's no other way but to reinvent. We need to engage, embrace, and adopt new ways of learning and working with the latest and emerging technologies. Digital transformation allows us to achieve sustainable advantage we can have over others. As a testament for its effort in consistently providing and delivering quality training programmes, IRS won **SME Awards 2009 for Best Brand in Services Management and Minister of Human Resource Award 2012**.

TRAINING PROGRAMME

- **FOURSIGHT** Certification
- **De Bono** Creativity Programs
- **Lego Serious Play** Training Methodology
- **Game Storming** Training Methodology
- **IRS Public Course** Series – IR4.0
- **HRDF** Train The Trainer
- **HRDF Evaluation** On Effectiveness Of Training (EET)



QUALIFICATION

Registered Training Provider with Pembangunan Sumber Manusia Berhad (PSMB) since 1997 - No.0281 ClassA;

- Approved HRDF TTT, EET, Master Trainer & TNA Consultant for PSMB
- Approved Training Partner for Certification Courses
- Approved Training Partner for SMETAP & PKS programmes

Registered as an Accredited Centre (Pusat Bertauliah) under JPK / DSD (L02279)

Registered with Ministry of Finance “Pendaftaran Kontraktor” – No.357 - 0002287070

Registered with Perbadanan Produktiviti Malaysia (MPC) – 42L-PLPS

Authorised Representative for FOURSIGHT Certification Tools of Thinking and Innovation

Facilitator for LEGO Serious Play Training Methodology

Authorised Representative of Edward de Bono’s Thinking Systems™

Authorised Provider for Australia Certification Courses (i.e. Certificate IV, Diploma and Advanced Diploma Programmes) accredited by ASQA (Australia Skills Quality Authority).

A Centre for RPL (Recognition of Prior Learning)

AWARDS

- Winner of **Human Resource Minister Award 2012**
- Awarded The **Brand Laureate SMEs Chapter Awards 2009**
- Awarded the Certificate Of Appreciation for Human Resources Development 2009/2007
- One of the active and recognised provider in Edward de Bono's Thinking Systems™ and the first in Malaysia
- The **Brand Laureate Best Personality Award in 2006 for Dr. Edward De Bono**

HUMAN RESOURCE MINISTER AWARD 2012



THE INSTRUCTOR



MR. AMIN IZADYSADR

Who is an electronics prodigy from Iran with extensive hands-on design and research experience in the **Electronics field**. He started building his first electronics circuit when he was 7 years old.

“skills acquired through strong desire to learn, love for knowledge, courage and strict discipline in experimenting and R&D.”

He is extremely well-versed with years of experience in PCB Design with Altium, electrical wiring, programming with PIC Basic Pro & Bascom, service and repair of home appliances, car audios, power supplies, portable amplifiers and many more skills acquired through strong desire to learn, love for knowledge, courage and strict discipline in experimenting and R&D. He is certified in **PLC Automation S7 3000, AVR Microcontroller and Digital Circuit Design**.

To learn more about him check out his recently-launched blog at www.elisha.network

CONTACT US

INFORMATION

Please [CLICK HERE](#) to download the registration form & learn about the pricing. Kindly fill it up and fax / e-mail it to us.

You can register 2 weeks earlier prior to the Training Date to benefit from an earlybirds discount!

Liking our [FACEBOOK PAGE](#) will entitle you to 2% discount as well!

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Monday - Friday
9:00 AM - 6:00 PM
Saturday - Sunday Closed

***Closed on Public Holiday**