



COMPREHENSIVE

INDUSTRIAL ELECTRONICS

REPAIRS **COURSE**

FOR BEGINNER, INTERMEDIATE, AND ADVANCED LEVELS

PRESENTED TO YOU BY:
**FICTRON INDUSTRIAL SUPPLIES SDN BHD
& IRS TRAINING**

DIFFICULTY

LEVELS

BEGINNER

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.

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.

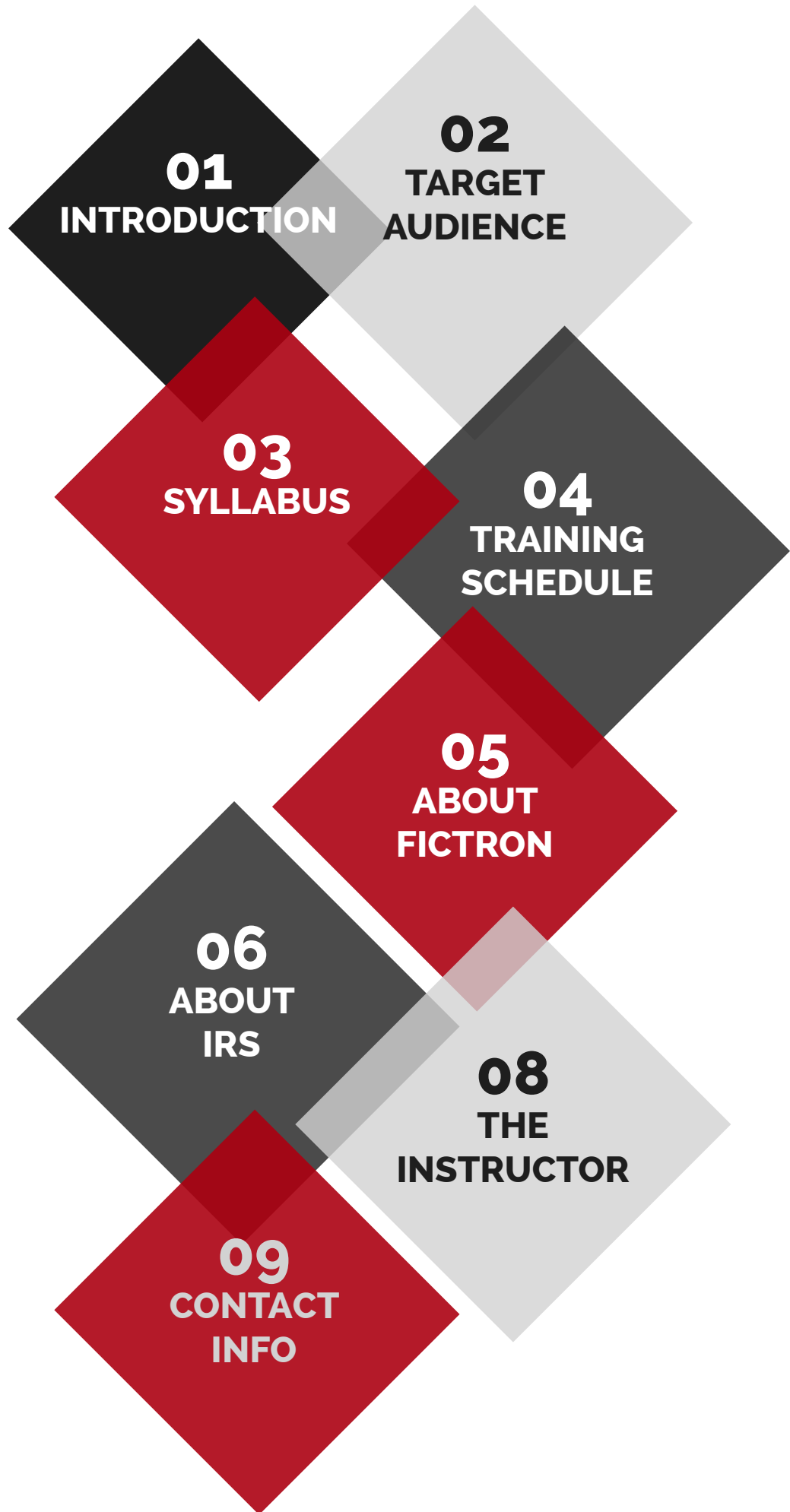
ADVANCED

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.

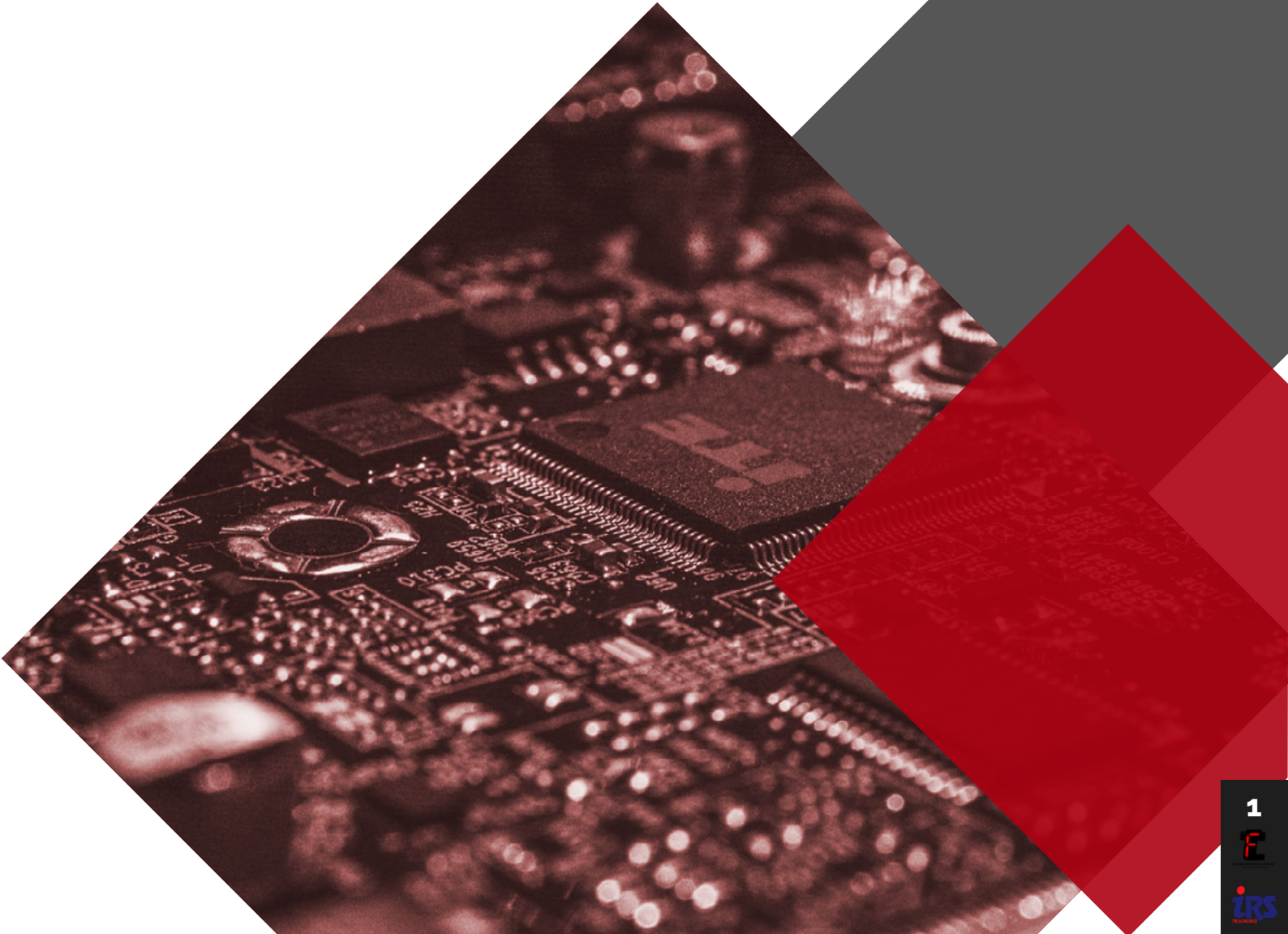
CONTENT



INTRODUCTION

This course is about significantly enhancing and maturing the skill set of **beginner or experienced** repair technicians up to a professional level. This course would provide the confidence necessary to tackle difficult and professional repair jobs. It will help to increase the **repair success rate** of your technicians while reducing the time spent on troubleshooting. You can reduce the downtime of your production lines significantly if your production engineers are trained in this course.

This comprehensive course will enable the participant to repair **different types of industrial automation systems** and **electronic PCB boards** without a schematic. The participant would learn component and chip behavior in-circuit and with no load, enabling them to draw the schematic in their head. They will be able to come to precise conclusions by applying different troubleshooting techniques with ease and high effectiveness.



TARGET

AUDIENCE

This course is suitable for anyone who's willing to repair **industrial electronic automation systems** as well as **consumer electronic systems**.

One whom wishes increase efficiency, effectiveness & success rate by sharpening their repair skills.

That includes the **repair technicians, production line managers, maintenance managers and technicians**. They will learn the fundamentals of electronic circuitry repair. Common issues of electronic automation systems and ways to fix them in a cause and effect analytical approach. They will also learn about **SMD soldering** in such a way that the end user would not be able to tell which component on the board has been changed (very neat soldering).

SYLLABUS

- **Introduction to Electronics:** Voltage, Current, Ground, Resistance, Open/Short Circuit.
- **Electronic testing equipment:** Multimeter, Oscilloscope: Voltmeter, Ammeter & Ohmmeter mode.
- **Electronic components:** L C R, Introduction, Identifying Faulty Components: Resistors, Capacitors, Coils, Fuses, Relays and Connectors.
- Different Type of Diodes and Test Methods.
- **Capacitors:** Testing, Coding, Safety & Discharging Methods.
- Coils, Transformers, Transistors, Integrated Circuit.
- **Introduction** to BJT Transistors, Field-Effect Transistors (FET), Thyristors, Varistors, Current Transformers.
- Operation, Testing, Troubleshooting & Repair.
- **Mastering** use of oscilloscope.

BASIC

- **Introduction to Schematics**, Case Study & Component Functionality.
- **Rectifier:** Half-wave, Full Wave, Regulators.
- Various Amplifiers, Op-Amps.
- **Analog & Digital ICs** Circuitry (Bias).
- **Radio Frequency Modulation Method;** Transmitter & Receiver.
- Structure, Industrial application & Standards.
- Experiments with Analogue ICs, Voltage Comparators, PWM Controllers and etc.
- **Experiments** with Digital ICs, Logic Gates, Counters, Sequencers and Flip-flops.
- PLC I/O, Weight Meter, Counter PCB Repair.
- **Techniques** and Safety of Through-hole soldering and desoldering.
- **Techniques** and Safety of SMD Soldering and Desoldering.
- **Printed Circuit Board (PCB)** Repair Techniques.

ADVANCED

TRAINING

SCHEDULE

ITEMS

LESSON	: 4 Lessons a day
DURATION	: 5 Days
QUIZ TIME	: 2 Times a day (Total of 10 quizzes for 5 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 (4:45 PM to 5:00 PM) is for reviewing what has been taught.
4. There is a 15 minutes break in between each class & the lunch time is from 12:30 PM to 1:30 PM.
5. The training course book, quizzes, components & tools are provided by Fictron.
6. Every circuit that is taught is practiced and built to ensure a full understanding of subject matter.

ITINERARY / EVENT

Day 1 - 5

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 •



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.

OUR CLIENTS



AMD



LUMILEDS



PSDC

FICTRON Repairs 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
- **12th** Top Global Brand Leadership Excellence Award
- **World** Confederation of Businesses - Worldcob-Biz 2019 Award

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 re-invent. 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;

- i) Approved HRDF TTT, EET, Master Trainer & TNA Consultant for PSMB
- ii) Approved Training Partner for Certification Courses
- iii) 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



THE INSTRUCTOR

MR AMIN IZADY SADR

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.

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

WEBSITE

<https://www.fictron.com>
<https://www.fictron.net>
<https://www.fictron.biz>

SOCIAL MEDIA

[FICTRON FACEBOOK](#)
[FICTRON TWITTER](#)
[FICTRON WECHAT](#)

Please [CLICK HERE](#) to download the registration form & learn about the pricing. Kindly fill it up and fax / e-mail it to us. Liking our [FACEBOOK PAGE](#) will entitle you to 2% discount as well!

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

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

*Closed on Public Holiday