

REFLECTIVE ELECTRICAL ENGINEERING LEARNING (REEL2026)

Building Skills and Professionalism through
Industrial Training

SKILLS



REEL2026
Reflective
Electrical Engineering Learning

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BUILDING SKILLS AND PROFESSIONALISM THROUGH INDUSTRIAL TRAINING



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*"Building Skills and Professionalism
through Industrial Training"*

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*Reflection transforms
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From Theory to Practice: Mastering Troubleshooting and Maintenance During Industrial Training in Coraza

Muhammad Hadif Putra bin Halim, *Abdul Rahim bin Ahmad
Faculty of Electrical Engineering, Universiti Teknologi MARA Cawangan Pulau Pinang,
Permatang Pauh, Malaysia

*Corresponding author's email: arahima@uitm.edu.my

In preparation for the internship that will begin in March, some preliminary research was conducted concerning the host organization, Coraza Systems Malaysia Sdn. Bhd. (Coraza). It is an engineering solutions company providing services ranging from assistance in designing products to the delivery of the finished products themselves. Its core competencies are sheet metal fabrication, machining, and electromechanical assembly. Furthermore, Coraza is clearly focused on improving itself through its Quality Management System, which ensures that it meets customer specifications and international standards such as ISO 9001 and AS 9100.

Upon joining Coraza on the first day, I noticed that I had little knowledge of the maintenance unit where I would spend my internship period. The maintenance team mostly handles the operations of industrial machinery and ensures effective engineering operations. Initially, my comprehension was limited to general mechanical and electrical duties, with no expectations for hands-on activities like repairs or troubleshooting. Furthermore, I was apprehensive regarding the environment since I did not have any friends there.

Initially, I was not confident about the duties that were entrusted to me since I did not have practical experience of working in the industry. Nonetheless, through the training from the technical staff and supervisors, who gave an introduction about the machines, tools, and safety measures used in the industry, I got information that my duties involved maintenance and repair of different types of machines such as punching machines, welding machines, bending machines, and conveyor systems.



Figure 1: Check the continuity of the clinching machine fuse

With further development in the internship, I had an opportunity to engage in practical engineering activities. This involved troubleshooting electrical and mechanical problems, fixing broken parts, and conducting preventive maintenance. Through the practical training, I was able to master skills in carrying out continuity tests, changing faulty relays, repairing faulty cables, and assembling motor components, chains, and speed controllers, which are shown in Figure 1, Figure 2, and Figure 3. The knowledge gained gave me an insight into how theoretical knowledge is applied in industries.



Figure 2: Replace Faulty Relays of the Clinching Machine



Figure 3: Install the Speed Controller of the Punching Machine

One of the most difficult aspects of the internship experience was troubleshooting. This entailed identifying problems and knowing how the machine works. However, through a great deal of practice and learning from my colleagues, I became proficient in troubleshooting and handling machines and tools with confidence. In addition to this, I realized the importance of adhering to safety measures, team spirit, and communication skills.

Failures come in various forms, such as air losses in pneumatic systems, overheating motors, and faulty sensors, as seen in Figure 4. Although we were studying electrical engineering, maintenance could also include machinery and electromechanical equipment in various industrial settings. We cannot confine ourselves to setting limits before solving the issues. Through practical training on these machines, I have been able to understand their workings and interactions.



Figure 4: Diagnosing Air Leakage in Pneumatic Systems

In summary, the training in industry has greatly assisted me in gaining practical engineering skills. I have developed skills to repair and troubleshoot problems that arise in an industrial setting. These skills have been enhanced from being partially practical to repairing minor faults in machines. In the end, the training will assist me in becoming a competent engineer in the future.

Authors' Biography



Muhammad Hadif Putra bin Halim is a dedicated student pursuing a Diploma in Electrical Engineering Power at Universiti Teknologi MARA Cawangan Pulau Pinang. As part of his academic journey, he is currently undergoing an internship at Coraza Systems Malaysia Sdn. Bhd. During his internship, he actively participated in troubleshooting, maintenance, and repair activities on industrial machines such as punching, welding, bending, and clinching systems at Coraza. This experience enables him to apply theory in practice and strengthen skills in electrical engineering consultancy.



Abdul Rahim bin Ahmad has been a lecturer with the Department of Computer, Faculty of Electrical Engineering at Universiti Teknologi MARA Cawangan Pulau Pinang since 2001. He received his degree of electrical engineering from Universiti Teknologi Malaysia in 1996. His teaching courses are Programming, Computer Networking and Microprocessor System. He is interested in research areas including Embedded System and Image Processing using Artificial Intelligence or Internet of Things.

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