

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
experience into meaningful learning*

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The Architecture of Expertise: Reflections on Technical Learning and Growth

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Power systems might look like a normal system from a distance however, once you get close enough, you'll find out how complicated they really are, and I know this because my experience from university study to being in a work environment as an Electrical Engineering Intern has shown me this fact clearly. Internships aren't just a requirement for getting your diploma, they also serve as a place for you to begin applying the theory you learned in school to practical applications in the real world. I came away with many new lessons learned through my internship and also learned that Engineers are constantly learning and increasing their knowledge base.

Initially, I believed engineering was straightforward and laid out on paper, so everything would appear obvious and predictable. But my hands-on experience has shown me that actual systems are not always that simple. There are early indications from machines of when there is a problem. For example, a motor may sound different from your normal use and feel hotter than it usually does. If you are attentive to the small variations in machines, it would help with early detection of issues.



Figure 1: Monitoring Electrical Switchgear Control Panels Using Digital Metering Devices to Evaluate Power Distribution System Performance

All of us can benefit from altering our perspective on problems that need troubleshooting to get a better understanding of the problem. I've changed my way of thinking to ask why something is working or not and to ask what will happen if I try to fix it before I ever get to troubleshoot it properly. You need many traits to troubleshoot effectively, including good judgment, patience and focus, along with actual experience. Troubleshooting cannot be

completely learned from books; you must also do practical work to develop the knowledge and skills to deal with real working conditions safely and correctly.

With recent advancements in the electric field, particularly involving new technology such as smart grids and renewable energy systems, knowledge becomes obsolete or out of date if we do not continue to learn new information. While I was interning, I had to refer to instruction manuals to learn about tools and new technologies that I had not learned in college. This experience made me realize that engineers need to take charge of updating their own knowledge.



Figure 2: Gaining Practical Experience in Team Coordination and Technical Problem-Solving During Daily Work Sessions

An important takeaway for me was learning how valuable it is to practice humility. Good engineers aren't always knowledgeable, they are open to learning from others and actively ask for assistance. It was difficult balancing academic responsibilities and my personal challenges, but it helped me build strength and learn how to adapt. Resilience as an engineer is critical because problems aren't always solved easily.

I can clearly see how much I have progressed during the time I spent completing my internship. While the equipment and systems are a big factor in the success of the project, I feel the biggest contributors to the success of the equipment and systems are the people who manage those systems. The way the people that manage the systems operate has a huge effect on how well the systems run. Their attitude, work ethic, and willingness to continue to learn and improve have had a significant impact on how well the systems continue to operate. Overall, I feel that I have gained confidence in my work capabilities and that I am better equipped for my future career as a Power Engineer. I have learned that education is a lifelong journey, motivating me to continuously improve my knowledge and professional skills in power engineering.

Authors' Biography



Muhammad Syakir Asywad bin Mat Salleh is a student in the Diploma of Electrical Engineering (Power) at Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang. He is currently completing his industrial internship at the UiTM facility from 9th March to 29th June 2026. This experience has helped him apply what he learned in class to real work situations. He is interested in power systems and hopes to become a skilled engineer in the future.



Mohaiyedin bin Idris is a Senior Lecturer at Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang. His area of expertise is Electronic System Design. He holds a Diploma in Engineering from Politeknik Ungku Omar, a Bachelor's degree from Universiti Teknologi Malaysia (UTM), and a Master's degree from Universiti Sains Malaysia (USM). He is involved in teaching and developing new ideas in engineering to support industry needs.

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