

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 Mastery and the Perpetual Student

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There is a feeling of being stunning when you are finally up to stand right in front of a live power system. Moving to the loud, high stakes environment of a real electrical facility from my safe space in a classroom at UiTM Permatang Pauh was an enormous wake up call for me. I come to the point that I have been thinking my experience as an intern student now is not just another checkbox for my diploma. All the same, it is the actual moment which it significantly locked my internal compass onto the reality of the industry. This entire experience has made me felt like a masterclass which explains why an engineer can never stop being a student.

Going back to the beginning, I always studied engineering through 2D symbols and clean lines that made sense of how it should behave based on how it should. However, this field actually requires extraordinary intelligence for example knowing the two main functions of motors and transformers not just by looking or listening to the functions of the equipment, but it requires a scientific and technically based operation that can determine accurate predictions as a benchmark for the damage that will occur to the functions of the motors and transformers. For example, if the equipment's function produces a change in humming or a little extra heat, that is usually the first warning sign that system damage is about to occur.



Figure 1: Getting a Close Up Look at Smart Metering Technology (Itron SL7000 Smart Meter) and Learning How to Use Mobile Integration to Verify System Performance

Figure 1 tells a new experience in my handling information related to Itron SL7000 Smart Meter. Originally my mind began to imagine during the laboratory operation session in the lecture session. The importance of meter operation knowledge can be practiced here perfectly. In addition, my little voice began to whisper asking about the circuit function during actual practice while I underwent industrial training here. The knowledge of

diagnostic thinking can help me to remain completely calm while solving complex circuit board problems with the help of support from technical supervisors who never stop guiding me to learn and master the knowledge of circuit diagnostics.

In today's world, we can notice on how fast the electrical sector is operating. Everything from smart grid rollouts to new sustainable energy projects that it takes the glimpse of our eyes will absolutely make us feels like the standard engineering rules are being rewritten every single day. From my perspective, I considered that my internship has proven that technical knowledge is a moving target. You are labelled as already falling behind if you are stand still without doing anything to enhance your knowledge. Thus, I found myself continuously hunting down manuals for new automation as well as control systems that represent where our field is heading. From this experience, I learnt that a real professional does not wait for a syllabus to change.



Figure 2: Getting a Real Feel for How to Coordinate and Tackle Technical Challenges as a Team During Our Daily Sessions



Figure 3: Being a helper to En Azli by supervise the students from civil department (Diploma) during the trip session to main station of UiTM Permatang Pauh

The most outstanding lesson I have learned from my current internship is humility. It has been proven that true mastery is about recognizing how to ask the next level of questions without any expectation of having all the answers. I need to keep trying to find answers using a variety of methods so that I can gain more knowledge from each method. This way, I can practice them and tackle different work problems in the future while also managing my life problems. Figure 2 and Figure 3 shows my experience of being a key member of a technical

team and it has never been easy for me to balance my life outside of work. However, it shows me that being resilient during my work hours is the same engineering principle that I can apply in my life as well.

As I wrap up this chapter of my industrial training, I am hoping that I am leaving it with a much sharper perspective. As how we are getting fascinated by nurturing the hardware, be that as it may it is the human software, which is our curiosity, ethics together with our drive to grow that really keep the grid performing. All in all, I can proudly walk out from this facility as a professional who knows that pursuit of excellence is a circuit that never truly closes. I am ready to step into the future of power engineering, grounded in my skills and full of enthusiasm towards the craft.

Authors' Biography



Adibah Nurhannani binti Abdul Rahman is a dedicated student pursuing her Diploma in Electrical Engineering (Power) at Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang. As a vital milestone in her professional development, she is currently completing an industrial internship at UiTM Cawangan Pulau Pinang facility, spanning from 2nd March to 21st June 2026. This hands on tenure has allowed her to translate advanced theoretical frameworks into the practical maintenance and design of power electrical facilities. Driven by a deep interest in sustainable infrastructure and technical logic, Adibah aims to become a highly resilient professional, contributing meaningfully to the evolution of the global power industry.



Mohaiyedin bin Idris is a Senior Lecturer at Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang, specializing in the intricate field of Electronic System Design. With a career anchored in both academic rigor and professional practice, he holds a Diploma in Engineering from Politeknik Ungku Omar, a Bachelor of Engineering (Hons) from Universiti Teknologi Malaysia (UTM), and a Master of Science from Universiti Sains Malaysia (USM). His work is dedicated to the evolution of electronic systems and the cultivation of engineering excellence, focusing on the development of innovative, high-efficiency solutions for modern industry.

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