

REFLECTIVE ELECTRICAL ENGINEERING LEARNING (REEL2026)

Building Skills and Professionalism through
Industrial Training

SKILLS



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Reflective
Electrical Engineering Learning

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BUILDING SKILLS AND PROFESSIONALISM THROUGH INDUSTRIAL TRAINING



REEL 2026

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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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Development Of Practical and Technical Skills During Industrial Training in Electrical Engineering

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Industrial training is very important to close the gap that exists between theory and practice among engineering students. The following reflective article describes my experiences in industrial training within the electrical engineering domain. In this article, I have reflected on the development of technical and practical skills during my industrial training period. During my industrial training, I have been involved in various activities relating to electrical installation, such as preparing distribution meter boards, observing the process of cable routing and cable termination, and installing equipment at the site. All these practices have increased my knowledge about the installation process of electrical systems within the industries. Industrial training has enabled me to develop my technical skills, communication skills, and problem-solving skills.

During my industrial training, I was attached to an electrical engineering company where I got an opportunity to participate in several electrical projects. These gave me a clear insight into the practical aspects of electricity in the industrial environment. During this period, I was able to learn new skills, gain technical knowledge, and increase awareness about professional ethics within the field of engineering. In this reflection, I will highlight the practical experiences that I gained through my industrial training and how these experiences have helped me acquire technical and professional skills in electrical engineering.

One of the technical tasks was to assist technicians in setting up a distribution meter board. The distribution meter board is a vital element in an electrical system, since it is responsible for distributing electrical energy into the various circuits found in a building or a particular facility. While setting up the distribution meter board, I observed how the miniature circuit breakers (MCB) were installed in the meter according to the electrical configuration. Each circuit breaker acts as a protective device that prevents any electrical overload or short circuits. Through this assignment, I was able to gain insight on how electrical components are set up in the meter for the effective distribution of electrical energy. The installation process of the distribution meter board was carried out using proper wiring and connections, as shown in Figure 1.

Another important technical activity that I performed during my industrial training was helping in the routing of cables and cable termination works. The cable routing process was carried out carefully to ensure proper alignment and secure installation, as shown in Figure 2. Cable routing refers to the arrangement of electrical cables in an appropriate manner in the panels or the cable trays to enhance safety and effectiveness of the electrical installations. In this process, I helped the technicians arrange the cables according to the wiring pattern to ensure that the cables are well-arranged and installed properly. Effective cable routing helps to enhance the level of organization of electrical installations in addition to facilitating future

maintenance operations. I also helped with cable termination works whereby electrical cables were connected to the electrical terminals or other electrical equipment. Careful consideration had to be made to make sure that the electrical connections could carry the electricity without causing any harm.



Figure 1: Distribution Meter Board Installation



Figure 2: Cable Routing Process

One of the final technical tasks during my industrial training involved the issue of cable sagging while installing electrical cables. Figure 3 shows the cable sagging condition observed during installation, which required proper tension adjustment to ensure safe clearance. Cable sagging can be defined as a state in which electrical cables droop or bow slightly between two points of support because of their weight and the distance between the points of support. Sagging control in electrical cables is critical since it ensures safety in electrical cable installation. In this case, I helped the technicians install the electrical cables and ensured that the cables were under sufficient tension to avoid sagging. In case sagging occurs in excess, there might be some difficulties in the performance of the electrical installation, as well as safety risks. The cable sagging activity was important since it helped me understand proper ways of installing cables.

During the early stage of my industrial training, one of the significant issues that I encountered was adaptation to the work environment. During my studies, I have been mostly dealing with theoretical lessons in the class, but the workplace required practical knowledge along with following procedures. I also found that understanding the process flow of electricity-related works was also another difficult area. During the initial period, I was not very clear about the various processes and terms that were being used by the engineers, technicians, and supervisors for performing electrical work. But with time and help from the experienced staff members, my knowledge improved.



Figure 3: Cable Sagging During Installation

Through this industrial training experience, I gained valuable insights into the development of practical and technical skills in electrical engineering. Observing real electrical work activities helped me understand how theoretical concepts learned in class are applied in real industrial environments. I also realized that electrical work requires careful planning, accuracy, and strong safety awareness. Technicians and engineers must always follow proper safety procedures when handling electrical equipment to prevent accidents and ensure safe working conditions.

In addition, this experience helped me develop better communication skills and teamwork abilities when interacting with technicians and supervisors. Working in an engineering environment requires cooperation between different team members to ensure that tasks are completed efficiently. Overall, the industrial training experience played an important role in improving my practical knowledge, technical awareness, and professional attitude as a future electrical engineer.

In conclusion, industrial training provides valuable opportunities for engineering students to develop practical and technical skills in real working environments. Through my experience during the training period, I was able to observe several electrical engineering activities and gain exposure to real industrial practices. The experience helped me understand the importance of technical competence, safety awareness, teamwork, and professional responsibility in electrical engineering work. The knowledge and skills gained from this industrial training will serve as an important foundation for my future career in the engineering field.

Authors' Biography



Nur Syasya Zulaikha binti Sahaipun Nizan is currently pursuing a Diploma in Electrical Engineering (Power) at Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang. As part of her academic programme, she is currently undergoing industrial training in the electrical engineering field. Through this training experience, she has gained exposure to several electrical-related activities including panel preparation, cable routing observation, and project documentation. Her academic interest focuses on electrical power systems and practical electrical engineering applications.



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