

IEM Log Book Training Scheme for the Development of New Engineers Towards Professional Standing



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AN engineer is a professional practitioner of engineering who uses ingenuity, mathematics and established physical laws to systematically develop solutions for technical problems. Engineers design, construct, operate and maintain materials, structures and systems throughout its life cycle while balancing the limitations imposed by practicality, regulation, safety and cost in the most optimal way.

It is not enough for an engineer to just have knowledge acquired in university without the proper practical experience. An engineer has to continuously update himself on the knowledge and development in his area of expertise. He must have the experience and capability to coordinate, administer and control programs, activities and protocol. It is an engineer's duty to manage resources, monitor activities and assess environmental risk, safety and quality control associated with the program.

An engineer must have good leadership skills and abilities needed to coordinate, facilitate, and participate in a collaborative approach to the completion of tasks or assignments. It is important that he is able to communicate, in written and oral form on the detailed technical engineering information, guidelines and standards, statutes, codes and regulations to various audiences in order to ensure that they understand the information and the message, and to seek compliance. An engineer must be able to deliver presentations suited to the characteristics and needs of the audience such as negotiating solutions among different parties, or providing expert testimony.

Last but not least, to be effective, an engineer must understand the business and economics of the solutions presented so that his ideas remains practical and relevant to solve the technical problem and be viable commercially. He is expected to be ethical, firm but tactful when performing his duty.

A university engineering degree fulfils the academic requirements. Unfortunately in an actual working environment, not all organisations can provide proper structured training and the all-rounded experience to develop engineers professionally. Sometimes, senior engineers may not have the time to develop new engineers or they have moved on to other roles, away from technical requirements. Getting a professional status is a recognition that requires the engineer to have the required knowledge, skills and aptitude to deliver good engineering solutions. Getting a good practical experience is the issue that many young engineers face.

To this end, IEM has developed the Log Book Training Scheme (LTBS) to assist young engineers prepare themselves towards qualifying as candidate for the Professional Interview (PI) and towards becoming professional engineers. The LTBS matches an experienced mentor volunteer who will guide and supervise new engineers to ensure the latter has the training and exposure required to be a professional engineer. The mentor is expected to impart wisdom and share knowledge with his mentee.

IEM has clear guidelines on how the LBTS is to be conducted. The guidelines are meant to ensure consistency and standard practices for both mentor and mentee. It is hoped that the scheme will be adopted as a systematic training scheme for young engineers' development in the country by all industries.

Before a new graduate decides to join the mentorship program, it is important that both mentor and mentee have the necessary “chemistry” to work in symbiotic manner to ensure good outcome of the training. Since mentorship is voluntary, it is important that during the initial acquaintance, both mentor and mentee establish baseline information by understanding the background and experience, expectation of the outcome as well as the frequency of meetings. The mentor must identify the mentee’s objectives and aspirations as well as his willingness to work to fulfill the PI requirements. It will be a waste if the mentee is not willing to listen to the mentor’s advice and guidance. If such is the case, the mentorship should not proceed.

A mentee should select a mentor who has the relevant experience and knowledge of the industry that he is working in. The mentor will then be his invaluable resource to get a proper perspective when solving problems and performing his daily work. The mentee also has to first get approval from his employer to sanction the type of in-house information that can be shared with the mentor. It would be futile if the mentor cannot understand the issues or give appropriate advice because the mentee is not able to discuss his work in an open forum. Similarly the mentor must ensure that he does not have a conflict of interest when mentoring to ensure the integrity and maintenance of confidential information.

It is encouraged to consider the log book as an official training format with the employer for the mentee’s career development so that the scheme can benefit both parties. It is important that a mentor is allowed to visit the mentee’s work place so that the mentor can discuss with the employer how the employer can support the program. The visit will also allow the mentor to understand the mentee’s working environment and gauge the kind of support he gets from the employer and colleagues.

Once both parties have agreed to be in the mentorship program, the mentor has to map out the detailed trainings and competencies required to be achieved during the three-year period. He has to list down the fundamental body of knowledge for the discipline, the standard and regulatory requirements to be followed and the duration needed on the design, field experience and supervisory/management function. He must explain the mandatory courses as required by the Board Of Engineers Malaysia (BEM) to be attended by the mentee. Other information and knowledge such as ethics, environment and safety, business, communication and economics must be explained throughout the mentoring period. The mentor must have a strategy to cover all the information needed so that he can monitor the mentee’s performance.

It is the mentee’s duty to plan and arrange the meetings on a regular basis, minimally once every quarter. The mode of meeting, location and timing has to be mutually agreed but preferably at a place where proper discussion can take place. During the meeting, the mentee has to produce his logged reports and documentation for verification by the mentor.

The report has to have sufficient details describing the activities, issues faced and the solutions provided by the mentee. Relevant information such as sketches, drawings, sample calculations and design concept can be attached. The mentee is not expected to provide original documents belonging to his organization such as correspondence to the authority or licences. This is to avoid misplacement or missing documents, especially when the log book is submitted to IEM during the yearly review.

The mentor has to check and verify the experience and ensure that the mentee has the confidence and ability to express his ideas fluidly and in systematic manner. He should write his observations and comments in the log book for reference. Annually, the IEM log book committee shall review the comments and independently assess whether the mentor’s guides and comments are constructive to the development of the mentee.

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During the period of mentorship, the mentee must make as much effort as possible to fulfil the training and experience as required by PI Guidelines. The mentor should advise the means and ways to get the appropriate training and support the objectives and requirements of the mentee whenever possible. In the event that the mentee loses interest or is no longer able to continue with the requirements of mentorship program, he should advise the mentor as well as IEM in writing so that the mentor does not waste valuable time and effort. Similarly if a mentor cannot continue to provide the support, he must advise the IEM to get a replacement.

At the end of the third year, a mentor should advise the mentee whether he is ready to sit for the Professional Interview. If the mentee is ready, he can support the application as well as offer advice on the experience and project reports required for the interview. If the mentor feels that the mentee has yet to achieve the required experience and confidence level required to be a professional engineer, he should recommend the mentee to extend the training. IEM should also be advised accordingly. Eventually it is up to the mentee whether he wants to pursue the interview process and qualify as a professional engineer.

It is recommended that the process above be followed by both the mentee and mentor to ensure that the log book program produce quality engineers. For senior engineers, imparting wisdom and knowledge is a noble act and should be continued voluntarily to ensure the country has well respected and ethical engineering professionals.

New engineers must be exposed to the log book training scheme programme during their undergraduate study so that they know what to do when they start work as an engineer. IEM encourages all organizations to adopt the IEM log book program to ensure their engineers are well trained and able to contribute professionally to the organization. ■

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