

# **The Institution of Engineers, Malaysia (IEM)**

## **Professional Interview Guidelines**

*for Applicants and Candidates*

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## 1. THE PROFESSIONAL INTERVIEW

### i. Definition

The Professional Interview is a peer review process comprising an assessment on the professional competency of the candidate by Corporate Members of IEM. The IEM Competency Standard used in the professional Interview is closely referenced to the UK Standard for Professional Engineering Competence (UK—SPEC), specifically on the Competence and Commitment Standard for Chartered Engineers.

This IEM Competency Standard (Refer to IEM PI 0100 on the Competence Model for Professional Interview) consists of eighteen (18) Competency Elements that are grouped under five (5) broad Competency Categories:

- A. Knowledge and understanding
- B. Design and development of processes, systems, services and products
- C. Responsibility, management or leadership
- D. Communication and inter-personal skills
- E. Professional commitment

The five generic areas of competence and commitment must be demonstrated in order to practice professionally. The Competency Elements are used as the basis for assessment in the Professional Interview by the IEM. Applicants will be required to provide evidence of competence against each of the eighteen (18) Competency Elements. The evidence is to be drawn from their work experience, specifically as they have encountered engineering problems or engaged in engineering activities.

A glossary of terms is included in the Guidelines.

### Interpretation

Unless the context requires otherwise:

- a) words in the singular include the plural and vice versa;
- b) words importing the masculine gender include the feminine gender.

## ii. General Regulation

- a) The Professional Interview shall be held throughout the year in Malaysia in IEM Secretariat or any of its twelve (12) Branches.
- b) Before a person is eligible to apply to sit for Professional Interview, he must have gained at least three (3) years of approved experience after graduation with an accredited engineering degree. The experience should be in planning, design, execution and management of such works as are comprised within the profession of an engineer, or relevant experience under the Engineering Competency Development (ECD).
- c) The Professional Interview Process consists of two stages:  
  
**Stage 1:** Submission of Professional Interview Application Documents for documentary review of competency evidence to assess Applicant's eligibility and readiness for the Professional Interview  
  
**Stage 2:** In-person assessment of Candidate that consists of a face-to-face oral examination as well as writing of two essays
- d) An Applicant for Professional Interview must submit one copy of Professional Interview Application Form together with the following:
  - Two (2) sets of Application Form;
  - Two (2) sets of Training and Experience - Portfolio of Evidence;
  - Two (2) sets of Training and Experience – Design & Site Experience;
  - Two (2) sets of Technical Report; and
  - Professional Interview fees
    - ✓ Processing Fee (stage 1); and
    - ✓ Interview Fee (stage 2).
- e) During Stage 1 of the process, if any of the competency evidences or Technical Report is assessed to be inadequate, the Applicant will be asked to resubmit supplementary documents. IEM Secretariat will inform him of the areas of shortcomings.
- f) The Applicant will have to resubmit the supplementary documents within two (2) months upon receiving the notification letter. If documentary review of the competency evidence or Technical Report is deemed inadequate after two (2) times of resubmission, the Applicant would not be eligible to proceed to Stage 2. The documentation submitted by the Applicant will be returned and Stage 2 fee be refunded.
- g) Upon satisfactory documentary review of the competency evidence and Technical Report, the Applicant will be informed in writing on his eligibility to attend the Professional Interview as PI Candidate. The name of the two (2) Professional Interviewers shall then be communicated to the Candidate.

The IEM Secretariat shall notify the Candidate of the date, time and place of the Professional Interview.

## ii. Condition of Submitted Documents

- a) Application Documents have to be submitted in the following conditions:
- The form should be word-processed and submitted electronically using a minimum front size of 9
  - Alternatively, the form should be type-written using black ink
  - **Do not bind** or glue sheets together as your application will be scanned.

## PREPARATION OF DOCUMENTS

### i. Professional Interview Application Form

This section shall guide the Applicant on how the form should be presented.

#### a) Part A: Personal Particulars

- Provide your personal details including your contact address
- Choose your preferred venue for Interview
- Choose the preferred language for the Professional Interview in either English or Bahasa Malaysia. Upon making the choice, the entire Professional Interview shall be conducted in your selected language, including the various forms, technical report, oral interview and the written essays.

#### b) Part B: Discipline Of Engineering Applied

- Complete details of your engineering applied for

#### c) Part C: Particulars Of Previous Application

- Tick the particulars of previous application (*if any*)

#### d) Part D: Membership

- Complete details of your IEM Graduate Membership number (*if any*)

#### e) Part E: Current Employment

- Complete details of your current employment

#### f) Part F: Your Expertise

- Tick the main sector and sub-sector most relevant to you and your area of expertise. For "Others", please specify them accurately.
- Specify the engineering discipline as registered with "Board of Engineers Malaysia" [BEM] and attach a certified copy of BEM Registration Certificate as evidence.

#### g) Part G: Tertiary Education

- List the details of all your academic qualifications awarded
- Give details of any formally assessed work-based learning acquired
- Attach a copy of your documents, certified by one of your Supporters as a true copy of the original.

**h) Part H: Professional Development or Training Schemes**

- Give details of any formal or structured training or professional development programs you have completed.
- Specify the competencies gained (refer to the eighteen (18) competency elements), and quote the scheme reference numbers and the names of accrediting institutes, if applicable.

**i) Part I: Professional Services, Papers Presented, etc.**

- List the reports, papers and patent published in your name
- If you work in a research or academic environment, summarise your published paper on no more than one (1) A4-size sheet
- List the services you have engaged with IEM or your community which raise the profile of engineering.

**j) Part J: Organisation Chart/Accountability Diagram**

- Provide an up-to-date organisation chart/accountability diagram with the following details:
  - ✓ Two (2) or three (3) levels of authorities above and below your post
  - ✓ Your post (indicated with an arrow)
  - ✓ Identify any Corporate Member of IEM or equivalent, quoting his membership grade number and Professional Engineer (PE) registration number
- If you have changed your job within the last three (3) years, include the same for your previous posting on a separate A4-size sheet, together with the relevant date(s)
- If your organisation operates a flat-based structure, please illustrate.
- Do not use any pictures, colour or shading as these make the diagram illegible when photocopied.

**k) Part K: Relevant Career History**

- Provide details of your work experience in chronological order starting from your first postings upon graduation from your institute of higher learning. For each of your posting, indicate the followings:
  - ✓ Duration of posting and job title
  - ✓ Name and address of employer and Name of Supervising Engineer
  - ✓ Your main responsibilities, tasks and achievements

For each posting, give evidence on what you have done rather than what the job requires you to do, focusing on answering to the eighteen (18) competency elements. You may give an extended description of your role, or the role that is most relevant to demonstrate your competence, giving details of your responsibilities and contributions.

**l) Part L: Payment**

- Pay the Professional Interview processing Fee and Interview Fee

**m) Part M: Declaration**

- Initial each and every page of your application form. Sign and date the application, confirming that the statements given are true to the best of your knowledge.
- Declare that you do not plagiarise your application. Understand that plagiarising will render the application null and void, and you may be barred from sitting for the professional interview.
- Make sure you only sign the declaration after all your supporters have signed.

**n) Part N: Supporters' Details**

- IEM requires your application to be supported. Supporters will be required to confirm your suitability for Corporate Membership.
- Your chosen Supporters should know you well and be convinced, through direct or personal experience, that you are suitable to be elected or transferred to the grade of MIEM. The Supporters typically have detailed and up-to-date knowledge of your work so that all the information in the application can be verified.
- Your chosen Supporters may be a selection of the followings:
  - ✓ Corporate Member of IEM or Fellow
  - ✓ Applicant's Mentor under IEM Engineering Competency Development (ECD)
- At least one (1) of the Supporters must be of the same engineering discipline; and from the same organisation as that of the Applicant.
- The Supporters should be working at a senior level to the Applicant, preferably for at least two (2) years, and with direct knowledge of the Applicant's work, role and responsibilities. In the event that the above is not available, the current line manager, or employer in higher organizational hierarchy, may act as Supporter, provided he is a Corporate Member of IEM or equivalent.
- The third (3) supporters are optional, and may be necessary, for example, if you work on contracts for an extended period, as he can verify your works during that period of your employment.
- It is important to choose a lead Supporter, who can assist you in the process of PI application, including the advice of filling up the Application Form, presenting Portfolio of Evidence in the Training & Experience Report, drafting the Technical Report, preparing for the actual face-to-face oral examination

**ii. Training and Experience - Portfolio of Evidence**

- a) This section shall guide Applicant on how to prepare the Training and Experience in the form of Portfolio of Evidence [refer to Form IEM PI A401], which the Applicant is required to submit two copies together with Professional Interview Application Form.

- b) The Applicant is required to provide evidence for each of the five (5) Competency Categories A, B, C, D and E (Refer to IEM PI 0100), covering the eighteen (18) competency elements, which are used as a basis for assessing the Applicant when he applies to sit for the Interview. The evidence written for each competency category should typically be around 500 words, excluding appendices and attachments.
- c) The Applicant has to cross-reference with “Part H: Relevant Career History of Professional Interview Form” when preparing the Training and Experience - Portfolio of Evidence. Typically, he has to transcribe the evidence from his career history to all the relevant competency categories. In doing so, he has to provide an extended description of his role, responsibilities and achievements relevant to the competency category to which a piece of evidence is transcribed. The Applicant has to indicate the tasks encountered in the course of his work experience, describing the related engineering activities, problems encountered and their resolutions. This will form the portfolio of evidence for the competence gained under each competency category.
- d) The evidence should be given in a clear and concise manner detailing only the essential facts as proof of competencies. The Applicant may attach relevant documentation to support the evidence of competency, initialling/signing on each page of the attached documentation. The supporting documentation should also be clearly referenced. The evidence of competencies shall be assessed by MAB for his eligibility or readiness to sit for the Professional Interview.
- e) Applicant should take note that the right-hand column denotes the revision reference and its date of re-submission of the evidence; hence the column should be left blank in the first submission. When any evidence for any of the categories is found to be inadequate, Applicant will be asked to re-submit the evidence. The revision reference and its date of submission will then be logged in the right-hand column.
- f) Applicant should get the Supporter to endorse the evidence and initial/sign on every page of the form, including the supporting documentation.

### **Annexes: Training & Experience – Design and Site Experience**

Applicant is expected to have sufficient design and site experience typically expected of a competent engineer. The design and site experiences are typically required for a person to register with the Board of Engineers as a Professional Engineer.

The length of design and site experience differs from one (1) engineering branch / discipline to another. This applies to the sub-branches of each major engineering branch. The following table gives the summary.



Engineering Branch and Related Sub Branches	Design Experience (Month)	Site Experience (Month)
Civil Engineering	12	12
Mechanical Engineering	6	12
Electrical Engineering	12	6
Electronic Engineering	6	12
Chemical Engineering	6	6
Other Branches of Engineering	6	6
Academicians (Lecturing Candidate)	Cumulative of 12 months in design and/or site	

Applicant is specifically required to give evidence of the design and site experience by filling up the Annexe A (Design Experience) and Annexe B (Site Experience). The cumulative total period must satisfy the minimum period specified in the above table.

### iii. Technical Report

- a) This section is intended for the Applicant to prepare for Technical Report in support of his application to sit for Professional Interview.
- b) The Applicant is required to submit two (2) copies of Technical Report together with the Professional Application Forms (IEM PI A100, IEM PI A401, IEM PI A401-ANNEXE, IEM PI C300).
- c) The Technical Report shall demonstrate that the Applicant has attained the engineering knowledge, understanding, and application in his engineering discipline, or sub-discipline at the level necessary to underpin the technical competences required to become a Corporate Member of IEM.
- d) Although there is no fixed format for Technical/Project Report, it is strongly recommended that the Applicant shall ensure that the Report contains some essential parts which are inclusive of, but not limited to the following:
  - A list of contents, including the appendices.
  - A brief executive summary as a preamble.
  - A column on the right of each and every page of the Report for the Supporter or Supervising Engineer to certify.
  - A checklist at the end of the Report for the Applicant to check, sign and confirm all documentations submitted in the report by him
- e) The content of the Report must be technical in nature. A pure management study is not acceptable. The scope of the Technical/Project Report shall depend upon the academic/professional qualifications and practical training, experience and achievement.

- f) Applicant can prepare the Technical/Project Report basing on the work(s) or project(s) from the Applicant's portfolio of evidence or career history that best demonstrates Competency Categories A and B. This should typically represent the engineering project or work area where the Applicant has gained substantive technical expertise.
- g) The Technical Report should typically have 4,000 to 6,000 words, excluding appendices and attachments. It should describe particular project(s) or work(s) (or part thereof) in which the Applicant played a major role, including taking the lead in some or all of the elements. Applicant must indicate clearly his role in the development and management of the project(s) or work(s) by giving the background to the important decisions for which he was responsible or to which he made a significant contribution. Above all, Applicant must show where he has exercised independent engineering and professional judgment.
- h) Numerical analyses, cost data drawings or other relevant additional documentation should be included as appropriate to support solutions/decisions described in the Report. Any appendices or attachments are not included in the word-count, but they should be bound into the Report
- i) While the Report may include or be largely based upon technical reports or design studies or research works written as part of the Applicant's normal employment, it must include a commentary identifying the contribution the reported work has made to the Applicant's technical formation and highlighting where and how engineering principles have been applied to solve problems.
- j) It is essential that the drawings and document submitted shall be the work of the Applicant in the ordinary course of his permanent/contractual (long term) employment. If only a portion of the Documents has been prepared by the Applicant, this must be clearly indicated and certified.
- k) The Technical Report should be comprehensive, clear and concise; enough to give sufficient evidence of the Applicant's personal technical contribution to the engineering work(s) or project(s). Applicant should initial/sign on every page of the Report.
- l) The Technical Report should be submitted with supporting sheets, calculations tables, charts, diagrams and/or drawings duly certified. It may include one or more of the following:
  - Design work
  - Feasibility study
  - Research and development work
  - Operations and maintenance work
  - Other engineering work

### **Design Work**

Report on design work shall include the following:

- a. At least two (2), but not more than four (4) working drawings (to appropriate readable scale that is accepted as the norm in the Applicant's engineering discipline or sub-discipline); and
- b. Detailed design/engineering analysis and calculations relating to one or more of the Applicant's own submitted drawings. Computer-aided analysis and design output shall be accompanied by "manual calculations" that forms part of the verification process. For novel design (including front end engineering design), this can be interpreted as field application leading to validation of work; and
- c. Specifications to which Applicant has contributed or executed in the course of design or field work; and

### **Feasibility Study**

Report on feasibility study shall include the following:

- a. At least one (1) relevant drawing that conveys essential features and details of an engineering system;
- b. At least three (3) sketches that contain sufficient details to enable a draughts person to work them up into concept, tender/bid drawings without further guidance;
- c. Preliminary stress, system or other pertinent analysis;
- d. Specifications to which Applicant has contributed for subsequent design and field execution.
- e. Applicant may include one or more of the following items as part of the study:
  - Functional and economic comparison of preliminary designs of the engineering system;
  - A comprehensive report of a major engineering project;
  - A system design of a major engineering work.

### **Research and Development Work**

- a. Description of the research and development work detailing the planning, execution (methodology) and deliverables of the work that clearly demonstrate sound application of engineering principles.
- b. Details of progressive pilot or prototyping work from computer and/or laboratory models shall also be submitted.
- c. The work actually carried out by the Candidate, appended with any engineering document including drawings produced by him.
- d. A critical appraisal of the design on any research experiments or systems which may not be the work of the Candidate may be included.
- e. The Report, if extracted from the candidate's PhD or Master's Thesis, has to contain significant practical industrial application.

## Operation and Maintenance Work

- a. A detailed description of the operations of the plant or system together with the maintenance schedule, which the Candidate has formulated or designed.
- b. In his submission, he should clearly indicate his contribution which would demonstrate a sound understanding of the engineering principles and their application.
- c. A critical appraisal of the design of the engineering system which may not be the work of the Candidate should be included.
- d. Details of modifications made to the existing system which are the work of the Candidate should also be submitted-

## 3. The Interview

### i. Introduction

- a) The Professional Interview will consist of two parts, namely:
  - The Oral Examination
  - The Written Examination
- b) The Candidate must complete the two (2) parts in order to satisfy the Professional Interview's requirements.
- c) Professional Interview will be conducted by two (2) experienced IEM Corporate Members, who are trained for this purpose.
- d) IEM Secretariat will normally help in arranging for the Interview by coordinating with both the Interviewers and the Candidate regarding the date, time and venue.
- e) Once the date of Interview has been agreed and fixed, the Candidate shall have to abide by it.
- f) Candidate may request for postponement of the Interview, if he can provide valid reasons that are acceptable to the Interviewers. However, postponement can only be considered if it is within less than two (2) months from the original date of Interview, otherwise it shall render the interview null and void; and the Candidate shall have to make a fresh application.

### ii. Conflict of Interest

- a) Candidate should not be interviewed by any of the following:
  - Supporter for the application
  - A person who has verified Candidate's application form
  - A person employed in the same or related organisation as the Candidate
  - A person who has close family relationship with the Candidate
  - A person who is a close friend of the Candidate
  - Any person who may have a conflict of interest, either for or against the Candidate
- b) It is the Candidate's ethical duty to request for a change of Interviewers before the Interview, if one or more of the above-mentioned conditions exit.

### iii. Oral Examination

- a) The Oral Examination will normally be allocated about one hour and thirty minutes for each Candidate.
- b) Candidate should arrive at the venue for Interview at least 15 minutes before the start of the Interview to allow time to settle down and get ready.
- c) While there is a need to be flexible in the Interview, the format is typically arranged as follows:
  - Introduction
  - 15-Minute Presentation by Candidate
  - About 60 Minutes of “Questions & Answers” Session
  - Opportunity for Final Evidence
  - Conclusion
- d) The Interview will be conducted in the selected language, either in English or Bahasa Malaysia.
- e) Candidate will be asked to show some forms of photo-identification at the Interview. This is to ensure the right Candidate is interviewed.

#### ➤ Presentation

- The presentation will be allocated 15 minutes. You are expected to not exceed the allocated time.
- The content of the presentation should be based on a piece of work or project from your Training & Experience Report (Portfolio of Evidence Form) that best demonstrates Competency Categories A and B. This should be concise, enough to give key points of your personal technical contribution to the work or project presented.
- The presentation format is your choice. This may involve one or more of the following:
  - ✓ A computer-based presentation such as PowerPoint presentation (Typically 5 slides)
  - ✓ A paper based presentation
  - ✓ A verbal presentation without any other aids.
- It is important that you discuss with the PI Secretariat to help arrange the use of visual aids. IEM may not be able to guarantee facilities to support all audio, visual or IT requirements.
- You are required to bring three (3) paper copies of their presentation materials (maximum A3 size) to the interview, one (1) of which will be retained by IEM and the other two (2) will be passed to the Interviewers. Please ensure that animation created by the computer-based presentation will not hinder eligibility when the hard copies are printed out.

#### ➤ Question & Answer

- Interviewers will generally use the career history of your application form as an agenda for the interview. They will encourage you to talk about your experience in chronological order to draw out evidence of competence during the discussion.
- You should be prepared to explain the technical content of your work as the Interviewers will probe specific competence areas.

- You should also be prepared to expand other aspects of your work including leadership & management, communication & interpersonal skills, professional commitment, etc.
- Matters related to commercial sensitivity or governed by the Official Secrets Act are unlikely to be an essential part of the interview. You will not be expected to divulge them.
- Interviewers will normally cover the full range of competencies by the end of the Oral Interview. They will ask questions in a clear and concise manner. You will have to make sure that you understand the questions first before attempting to give your answer.
- You should bring a copy of your Development Action Plan (DAP) to be presented on a separate form (Refer to IEM PI C300) towards the end of the Oral Interview. This plan is a demonstration of your commitment to maintaining professional competence, often referred to as Continuing Professional Development (CPD). This does not have to be linked to an organization. It can be self-managed. This is a plan for future with the short-term and long-term goals, and how you are going to achieve them.

➤ **Opportunity for Final Evidence**

- At the end of the Oral Examination, Candidate will be given the opportunity to:
  - ✓ Raise any points which he feels have not been covered during the discussion
  - ✓ Give any evidence which he feels may help the assessment of his case
  - ✓ Ask any questions you may have

➤ **End of Oral Interview**

- Candidate will NOT be allowed to change the engineering discipline on which it has been interviewed, to the one thought to be more appropriate.
- Similarly, the Interviewers are NOT allowed to do likewise.

**iv. Written Examination**

- a) At the end of the Oral Examination, Candidate will be asked to proceed to the second part of the Professional Interview, namely the Written Examination, which consists of two (2) sections:
  - Section A: Technical Essay
  - Section B: Ethical EssayEach essay will be allocated 90 minutes.
- b) In Section A, Interviewers will normally set two (2) questions, of which Candidate chooses one (1) to answer. The set questions are typically related to the technical aspects of the work in which Candidate has gained substantial experience.
- c) Section A will be assessed based on two (2) main Competency Categories, namely T-Technical knowledge and application (T1, T2, T3) and W-Writing proficiency (W1, W2, W3):

Section A	
<b>T</b>	<b>Technical Knowledge and Application</b>
T1	Understands the scientific and engineering fundamentals of related discipline and own specialization
T2	Applies the appropriate theoretical and practical methods to the analysis and solution of engineering problems
T3	Applies the engineering knowledge related to local practices, codes, standards, specifications, materials, products, environments, etc
<b>W</b>	<b>Written Communication / Proficiency</b>
W1	Understands the question clearly and answers with suitable technical contents and relevant examples
W2	Presents the answer with good structure, proper heading and paragraphing as well as conciseness, coherence and cohesion
W3	Presents the answer legibly with good grammar, lexicon, spelling, and punctuation

- d) In Section B, Interviewer will choose two (2) questions from the official list of printed questions related to IEM Regulations on Professional Conduct, of which Candidate chooses one (1) to answer. It is generally intended to test how the Candidate think about the role of the engineer in society vis-à-vis the Regulations of Professional Conduct.
- e) Section B will be assessed based on two (2) main Competency Categories, namely P-Ethical knowledge and application (P1, P2, P3) and W-Writing proficiency (W1, W2, W3):

Section B	
<b>P</b>	<b>Professional Ethics Knowledge and Application</b>
P1	Understands IEM / BEM Code of Professional Conduct and contemporary ethical issues in the engineering profession
P2	Takes professional & ethical responsibility in actual work situation to enhance the honour and reputation of the engineering profession
P3	Understands the impact of engineering solutions in the larger context like society, environment, health, safety, and public welfare
<b>W</b>	<b>Written Communication / Proficiency</b>
W1	Understands the question clearly and answers with suitable technical contents and relevant examples
W2	Presents the answer with good structure, proper heading and paragraphing as well as conciseness, coherence and cohesion
W3	Presents the answer legibly with good grammar, lexicon, spelling, and punctuation

- f) Candidate is required to answer the questions in both sections in hand-writing. Candidate is not permitted to bring any form of reference materials, or use electronic devices with content accessibility such as notebook, portable computer or mobile phones, etc. during essay writing.
- g) Candidate is not allowed to spend the total of three hours for written examination flexibly by using more than 90 minutes for one question at the expense of the other question.



## v. Preparing for Professional Interview

- a) The best way to prepare for the Interview is to review your Application Form, Training and Experience - Portfolio of Evidence and Technical Report.
- b) Identify and determine which of your experience best demonstrate the required range of competencies. Highlight your personal contribution.
- c) In rare cases where the Candidate has physical writing impairment, he should communicate with IEM Secretariat to check if special arrangement could be made. IEM may not be able to give any guarantee.

## vi. Post Interview

- a) The Interviewers will NOT indicate to the Candidate the result of the Interview on the day of Interview, as they have to go through the due process.
- b) At the end of the Interview, the Interviewers will make a report to IEM Secretariat. Candidate will be informed of the outcome when a decision is made by relevant Committees in IEM.

## vii. Appeal

- a) The Candidate has the right to appeal against the FAIL interview result. The appeal shall be submitted within thirty (30) days from date of notification of the result.
- b) Appeal Procedure:
  - the Candidate is required to submit the Professional Interview Result Appeal Form (IEM PI C400); and
  - pay the Appeal Fee, as advised by IEM.
- c) An appeal may be made on the following grounds only:
  - extenuating circumstances occurring during the application process or interview and/or
  - departure from the IEM's application or interview procedures.
- d) An appeal shall not be considered on the ground of the Interviewer's assessment of the candidate's performance.
- e) The decision of the relevant IEM Committee on the appeal shall be final.

## 4. Glossary

- **Applicant** means an engineer, who has made an application to attend the Professional Interview conducted by IEM after satisfying the necessary requirements.  
  
Applicant should typically have gained an accredited engineering degree and subsequently accumulated a minimum of three-years practical training and experience as an engineer.
- **BEM** means "Board of Engineers Malaysia", a body corporate under the Ministry of Works Malaysia to regulate the engineering profession in Malaysia.
- **BEM Graduate Engineer** means an engineer registered with BEM after graduating with an accredited degree.



- **Bill of Quantities** means the list of work items, raw materials, etc. and their respective quantities required to complete an engineering work.

*With regard to Chemical Engineering or related engineering discipline, the “Material and Energy Balance” in lieu could be considered as the Bill of Quantities.*

- **Candidate** means an Applicant who has been assessed and approved by IEM to sit for the Professional Interview.

Candidate should have been registered with BEM as Graduate Engineer under four (4) **Major Engineering Branches**, namely Chemical Engineering, Civil Engineering, Electrical Engineering, and Mechanical Engineering.

**Chemical Candidate** means a candidate from the Chemical Engineering discipline who has spent a minimum aggregate of six (6) months in design experience, and six (6) months in field, including in plant facility operations and supervising an engineering work.

**Civil Candidate** means a candidate from the Civil Engineering discipline, who has spent a minimum aggregate of twelve (12) months in design, and twelve (12) months in field supervising an engineering work.

**Electrical Candidate** means a candidate from the Electrical Engineering discipline, who has spent a minimum aggregate of twelve (12) months in design, and six (6) months in field supervising an engineering work.

Candidate is expected to have knowledge and experience in the design, installation, operation and/or maintenance of electrical installation or system with a voltage of at least 400V, three phase and operating current of at least 300A. Candidate is also expected to have sufficient exposure to medium voltage (1kV up to 33kV).

**Mechanical Candidate** means a candidate from the Mechanical Engineering discipline, who has spent a minimum aggregate of six (6) months in design of mechanical components, equipment or a system, and another twelve (12) months in the supervision, fabrication, installation, commissioning, operation or maintenance of mechanical engineering works.

Candidate is to have knowledge and experience in at least three of the following sub-systems; fire-protection, air-conditioning, lifts and escalators, water and sanitary plumbing, etc.

- **Competency** means the ability to carry out a task to an effective standard, of which the achievement requires the necessary level of knowledge, understanding and skill, as well as a professional attitude. It is part of the requirement that must be demonstrated in order for an Applicant to be admitted as a Corporate Member of IEM. The formation process of professional competence generally involves a combination of formal education and practical training and experience.
- **Competency Categories** means a group of Competency Elements that are classified under a broad area of professional competency required for the assessment in Professional Interview. The five (5) groups of Competency Elements form a matrix to enable Professional Interviewer to evaluate and assess the Candidates. [Refer to IEM PI 0100 and IEM PI A401]

- **Competency Elements** means a component of Competency Category that describes a specific area of professional competency against which the PI Candidate is assessed for his level of attainment based on a specific set of standard criteria. Applicants will be required to provide evidence of competence against each of the eighteen Competency Elements. [Refer to IEM PI 0100 and IEM PI A401]
- **Competency Evidence** means the evidence drawn from the work experience of Applicant as he has encountered engineering problems or engaged in engineering activities. [Refer to IEM PI 0100 and IEM PI A401 for the requirements]
- **Competency Model** (Refer to IEM PI 0100) consists of eighteen “Competency Elements” grouped under five “Competency Categories”. The Model demonstrates the underpinning knowledge and understanding of engineering fundamentals, application abilities, leadership and management skills, interpersonal skills, and personal commitment to the profession that must be demonstrated in order to practice professionally.
- **Engineering Sub Branches** means the sub-disciplines of engineering studies in which the Applicant has practiced during his training due to his unique nature of work, such as structural, transportation, geotechnical, construction, environmental, building, mining, manufacturing, agricultural, aerospace, automotive, building services, marine, material, mechatronic, metallurgy, naval architecture, nuclear, electronic, communication, computer, petroleum, process, etc. As a prerequisite for his engineering training, he must spend a minimum aggregate of six (6) months in design and another six (6) months in field work supervising his area of expertise.
- **Engineering Experience** means the period, in man-months, of training and experience of the Applicant in an engineering work, inclusive of lecturing in institutions of higher learning. All trainings during the period have to be supervised by a Supervising Engineer or his Mentor.

Applicant can gain professional engineering competency, and the evidence thereof, in the course of his training, especially in providing solution to engineering problems. From the compilation of his Portfolio of Evidence, the Applicant can self-assess whether he is ready to make an application to attend his professional interview.

**Design Experience** means the training experience in which the Applicant plans, manages and executes process and engineering design work, feasibility study, research and development work, or operation and maintenance work.

**Field Experience** means the training experience in which the Applicant is involved in site supervision, investigations and verifications, testing and commissioning, as well as trouble-shooting in the field.

Field experience shall not consist merely of periodical and routine inspections, attending routine meetings, but shall have to include activities which demonstrate engineering proficiency and competency like trouble-shooting, site situational problem solving, clarifying of design uncertainties, proposing of better alternative designs, reviewing parameters and improving work procedures and standard practice, surveys, material testing and work sequencing.

**Lecturing Candidate** means a “Teacher in Engineering” who is engaged in lecturing an accredited engineering degree in an Institution of Higher Learning at the time of his application, lecturing the final two (2) years of the accredited engineering degree programme for a period not less than twelve (12) months. As a prerequisite for his engineering training, he must spend a minimum aggregate of twelve (12) months (cumulative) in a combination of design and field experience outside his Institution of Higher Learning, under the supervision of an external supervising engineer or mentor.

In addition to these prerequisites, he must have not less than three (3) years’ experience, which may include a period on:

- a) an approved course of full time post-graduate study, or
- b) on research for the award of a higher degree, or
- c) research done whilst holding the position of lecturer in an accredited degree course.

**Operation and Maintenance Candidate** means the Applicant whose experience lies in the operation and maintenance of engineering plant or system, which forms the prerequisite for him to qualify to attend the Professional Interview.

**Research and Development Experience** means the Applicant who has been engaged in engineering research work as a prerequisite for his practical experience in engineering to qualify him to attend his Professional Interview, and is doing research at the time of his application to sit for the Professional Interview.

The candidate shall have at least five (5) years of experience made up of the following:

- a) responsible position in engineering research; research for the award of a post graduate Master or Doctorate degree could be considered for an aggregation up to a maximum of one (1) or two (2) years respectively depending on the duration of the research; and
  - b) cumulative of one (1) year approved practical experience under the supervising engineer of the same discipline.
- **Essay Writing** means the second session of the Professional Interview, whereby the Candidate is required to write two essays.

**Essay Writing – Section A** means the technical essay written by the Candidate during the second session of his Professional Interview, whereby he will write on one of the two alternative subjects selected by the Interviewers relating to his practical experience.

**Essay Writing – Section B** means the second essay written by the Candidate during the second session of his Professional Interview on the Regulations of Professional Conduct. The Candidate will be asked to answer one question from two alternative questions selected by the Interviewers from a list of questions previously available to the Candidate.

- **IEM** is the abbreviation for “The Institution of Engineers, Malaysia”

- **IEM Branch** means one of the twelve (12) regional IEM branches, from which Applicant may chose as his preferred venue for his Professional Interview, other at the IEM HQ. The twelve (12) IEM Branches are Kedah/Perlis Branch, Penang Branch, Perak Branch, Negeri Sembilan Branch, Melaka Branch, Southern Branch, Pahang Branch, Terengganu Branch, Kelantan Branch, Sabah Branch, Miri Branch and Sarawak Branch.
- **IEM Corporate Member** means a member of IEM who has been admitted or transferred into the grade of Member (MIEM) or Fellow (FIEM) upon satisfying the IEM Council that he has attained such standard and criteria as set by the Council being evidence of his proficiency as a professional engineer.
- **IEM Council** means the elected governing body of IEM with the mandate to direct and manage all property and affairs of the Institution, including conducting the Professional Interview for the purpose of admission or transfer as Member of IEM (MIEM).
- **IEM Graduate Member** means a member of IEM who has been admitted or transferred into the grade of Graduate Member (Grad IEM).
- **IEM Engineering Competency Development (ECD)** means the training scheme organized by IEM to provide guidance to IEM Graduate Member on a proper practical training so as to ensure that such training fulfils the requirements for his transfer to the grade of MIEM.

Through the IEM Engineering Competency Development (ECD), the IEM Graduate Member shall become a Mentee who would obtain his practical experience under the supervision of a Mentor, for a minimum period of three (3) years. The IEM Graduate Member (Mentee) shall maintain a log book of his training, which shall be endorsed quarterly by his Mentor. Every year the log book has to be submitted to IEM for record and endorsement.

- **IEM Monthly Bulletin** means the monthly bulletin called 'Jurutera' published by IEM to communicate to its members on matters affecting the Institution in particular and the engineering profession in general.

The names of all PI Candidates will be published in this bulletin. If any IEM Corporate Member has any reason as to why any of the Candidates is not a fit and proper person for election or transfer as a Member of IEM (MIEM), he should communicate in writing to the Honorary Secretary within a month from the date of publication.

The names of successful Candidates will be published after the IEM Council has approved the election/transfer to the grade of MIEM.

- **MAB or Membership Application Board** means the Sub Committee in IEM designated to assessed the "IEM Professional Interview Application Document" submitted by Applicant before deciding whether or not Applicant is ready to proceed for the Professional Interview.
- **Mentor** means an IEM Corporate Member who has been assigned to supervise the practical training of an IEM Graduate Member under the IEM Engineering Competency Development (ECD). The mentor is typically of the same discipline as that of the mentee.

- **Oral Examination** is the first session of the Professional Interview, whereby the Candidate will be assessed by two (2) Professional Interviewers to determine whether he has attained the level of competence for election/transfer to the grade of MIEM.
- **Peer Review** is a process by which the professional engineering competence of Candidate is checked by IEM Corporate Members (the would-be peers of Candidate) in the same engineering discipline to ensure that he meets the necessary standards before he is admitted as one of their peers.
- **Portfolio of Evidence** means a collection of verified facts and/or documents that Applicant must compile and present as the required evidence to show his competence against the eighteen (18) competency elements grouped under five competency categories (Refer to IEM PI 0100 and IEM PI A401)
- **Principal Interviewers** means the two (2) IEM Corporate Members assigned by the Professional Interview Board to conduct the Professional Interview.
- **Professional Engineer** means the professional title given to engineers who meet the standard of competence required by the Board of Engineer Malaysia for registration as a professional engineer. Becoming a MIEM satisfies the requirement to be registered as the professional engineer under subsection 10(2) (a) (ii) (c) of the Registration of Engineers Act 1967 (Revised 2015).
- **Professional Interview Application Documents** means the Applicant Forms, Training and Experience - Portfolio of Evidence and the Technical Report submitted by Applicant with the intention to sit for the Professional Interview.
- **Professional Interview Board** means the Sub Committee within the Institution assigned by the IEM Council to manage the Professional Interview.
- **Regulation on Professional Conduct** means a set of code intended to cover all eventualities on how an IEM Corporate Member or a professional engineer shall conduct himself, written in general terms based on broad ethical principles.
- **Supervising Engineer** means an IEM Corporate Member, or equivalent professional affiliation, of the same discipline who has personal knowledge of the Applicant/ Candidate's roles and responsibility within the same organization or company.
- **Technical Report** means the one of the two reports to be submitted by Applicant when submitting his Professional Interview Application Documents. The report shall follow the requirement of the relevant major engineering branches; and may include one or more of these areas of work, namely design work, feasibility study, research and development work, operations and maintenance work, or other engineering work.

- **Training and Experience - Portfolio of Evidence** means a prescribed format in which Applicant is required to compile and present a collection of facts and documents as the required evidence to show his competence gained during his work experience against the eighteen competency elements grouped under five competency categories. This shall form a basis for assessing his readiness to sit for the Professional Interview (Refer to IEM PI 0100 and IEM PI A401)
- **The Institution of Engineers, Malaysia (“the Institution”)** is a society established to promote and advance the science and profession of engineering in any or all its disciplines and to facilitate the exchange of information and ideas related to engineering.
- **Unsuccessful Candidate** means the Candidate who has not satisfied the IEM Council that he has attained such standard and criteria as set by the Council being evidence of his proficiency as a professional engineer.