



Professional Engineer Registration and Examination

Outcome Based Competence Assessment Malaysian Experience

Ir. Lee Boon Chong

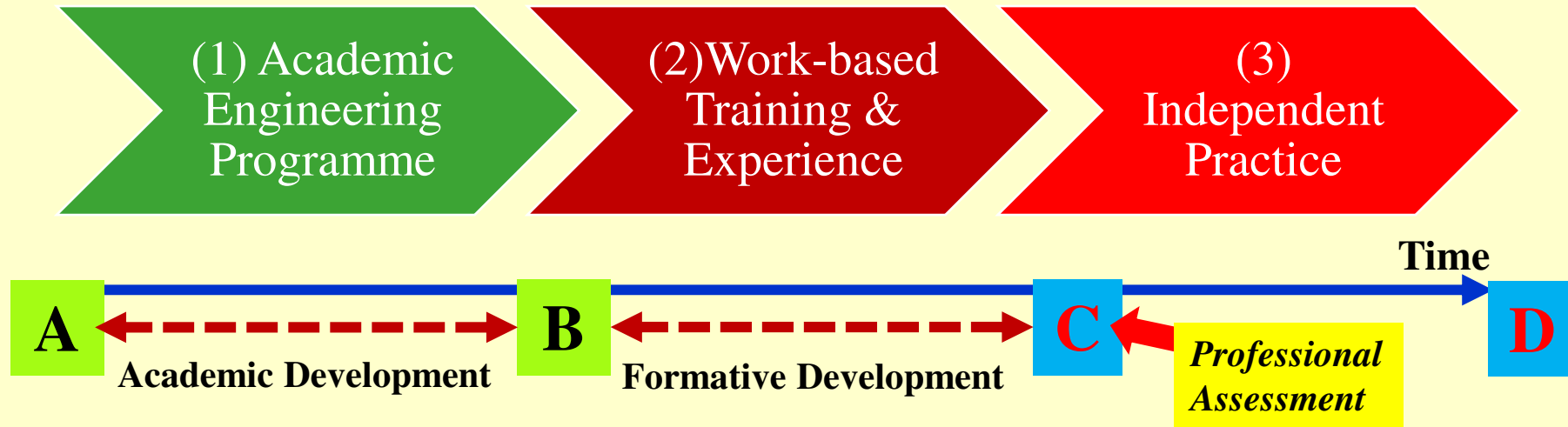
Content Outline

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- **Registration of Engineers in Malaysia**
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Assessment Continuum

- Professional Assessment can be discussed from the perspective of a **continual process** of developing an engineering professional.
- The fundamental purpose of engineering education is to build a knowledge base and attributes to enable the graduate to continue learning and proceed to work domain for formative development.
- The primary purpose of formative development is to build on the educational base to develop competencies required for independent practice. This culminates in professional assessment for the typical purpose of registration as a professional engineer (PE).

Assessment Continuum



Time Point	What A Person Does
Between A and B	Build a knowledge base and attributes for formative development.
Assessment at B	To be assessed as a Graduate with 12 Programme Outcomes – OBE.
Between B and C	Acquire work-based competence for independent practice.
Assessment at C	To be assessed as a Professional Eng. with prescribed competence – OBA.
Beyond C	Conduct independent practise as Professional Engineer.
Assessment at D	To be assessed for international register.

Academic Requirements

- A graduate engineer is typically required to satisfy the academic requirements before he is deemed ready to enter into formative development in engineering practice.
- A commonly accepted academic standard that meets these requirements is exemplified in the twelve (12) graduate attributes/ individually assessable outcomes as documented by the International Engineering Alliance (IEA) for the Washington Accord (WA).
- Thus, an engineering program with outcomes *substantially equivalent* to WA is deemed to have satisfied the required academic requirements. Note that meeting FEIAP best practice guidelines is deemed to have met the required academic requirements for APEC Engineers Agreement.

Professional Assessment

- A graduate engineer will progress on his own learning curve in the formative period to develop the ability to perform engineering works and activities.
- This learning process will reach a matured point where the graduate engineer has acquired sufficient professional competence for independent practice.
- To register as a professional engineer for independent practice, the graduate engineer has to undergo a **professional assessment** on his competence in a holistic way; normally this will result in professional registration within each country / jurisdiction.

Malaysian Context

- Engineering practice in Malaysia is governed by the **Registration of Engineers Act 1967 (the Act)** and the Registration of Engineers Regulations 1990. Latest amendments took effect on 31 July 2015.
- Under the Act, any qualified person can be registered with the **Board of Engineers Malaysia (BEM or the Board)** based solely on his/her qualification irrespective of citizenship.
- Only those qualified persons registered with BEM are allowed to practice engineering in Malaysia.

Registration of Engineers

Register with BEM as GE after gaining an accredited engineering degree.

Graduate Engineer (GE)

Register with BEM as PE after having gained at least three years of practical training & experience and passed the professional assessment.

Professional Engineer (PE)

Registered PE who pass the Professional Competency Examination (PCE).
Only PEPC is eligible to set up Engineering Consultancy Practice (ECP)


Professional Engineer with Practicing Certificate (PEPC)

Registration as Professional Engineer

- **The Board of Engineers Malaysia (BEM)** is the **regulatory body** set up by the Malaysian Government under the Registration of Engineers Act (1967) to regulate engineering practice in Malaysia through administering the Act and its provisions to protect public interest.
- A person who meets the stipulated requirements of the Act shall be entitled to register with the Board (BEM) as **Professional Engineer (PE)** in Malaysia.

MIEM as a Route to PE

Under the Act, a registered Graduate Engineer has **three routes** to be assessed and registered as PE:

1. Has passed a **professional assessment examination (PAE)** conducted by the Board;
2. Holds a **professional qualification** which the Board considers to be **equivalent** to the PAE conducted by the Board;
3. Is a **Corporate Member of the Institution of Engineers, Malaysia (MIEM)**. 

MIEM as a Route to PE

- **The Institution of Engineers Malaysia (IEM)** is a **learned institution** for practicing engineers in Malaysia, set up as a professional group to promote and advance engineering as well as to facilitate networking, learning and socializing.
- A registered graduate engineer who, on application, is a **Corporate Member of IEM (MIEM)** shall be entitled to register with the Board as PE in Malaysia.
- To be qualified as MIEM, the graduate engineer must have sat and passed the **Professional Interview (PI)** conducted by IEM.

Route to MIEM / PE

The Overview



Academic Requirement

- The Registration of Engineers Act (REA) mandates engineering graduates to register with the Board as a **Graduate Engineer** after completing an engineering programme.
- The academic requirement for registration as graduate engineer is the engineering programme (typically 4 years) that has been either accredited (local program) or recognized (foreign program) by the **Engineering Accreditation Council (EAC) Malaysia.**

Engineering Accreditation Council

- Engineering Accreditation Council (EAC) is the body delegated by BEM for accreditation of engineering degrees offered by universities (both public and private) in Malaysia ;
- The objective of accreditation by EAC is to ensure that graduates of the accredited engineering programmes satisfy the minimum academic requirements for registration with the Board as a graduate engineer.
- EAC Malaysia is a Full Signatory of the Washington Accord (WA).

Substantial Equivalence to WA

- Since EAC is a Full Signatory of the Washington Accord (WA), it follows that all the Malaysian engineering programmes accredited by the EAC will be deemed to have substantial equivalence to the WA.
- For foreign engineering degrees, the Board and the EAC will only recognise those engineering programmes accredited by other full signatories of the WA; and those that have been assessed by the EAC to have substantial equivalence to the WA, such as EUR-ACE.

Practical Experience

- After graduation, every engineer needs certain period of time in order to build on the educational base to develop the competencies required for independent practice as a professional engineer.
- Since different engineers need different length of time to reach the matured stage for independent practice, it is a common practice for the regulator to set the minimum period of working experience.
- All graduate engineers who intend to be assessed for independent practice must have met this minimum period of working experience.

Practical Experience

In Malaysia, a Graduate Engineer must obtain **at least three (3) years of relevant practical training and experience** before he can apply to sit for professional assessment.

- ✓ At least two years of general training that provide a sound basis for professional development; and
- ✓ At least one year of professional career development and training that provides wide exposure to the various managerial and technical expertise in engineering practice.

Practical Experience

- At least one (1) year of the practical training and experience must be obtained in Malaysia under the supervision of a Professional Engineer in the same or allied branch of engineering as that practiced by the Graduate Engineer.
- In case that the experience is obtained outside Malaysia, the supervision must be under an engineer acceptable to the Board.
- The Supervising PE preferably comes from the same organisation. What if there is no PE of the same discipline within the organization?

Log Book Training Scheme

For Graduate Engineer **NOT having a Professional Engineer of same discipline **within the organization.****

- ✓ Arrange a Mentor of the same discipline with IEM. Graduate Members have access to a pool of MIEMs / PEs who are qualified and willing to be a Mentor.
- ✓ Nominate a Mentor, who is typically a PE / MIEM of the same discipline from another organization (preferably same industry BUT not mandatory). Ask the Mentor to register with IEM under the Log-Book Training Scheme.

Professional Interview

A graduate engineer is eligible to apply to sit for the **Professional Interview (PI)** conducted by IEM after meeting the following requirements:

- ✓ Has graduated with an accredited engineering degree;
- ✓ Has registered with the Board as graduate engineer;
- ✓ Has obtained at least three years of practical training & experience.

Professional Interview

- The **Professional Interview (PI)** conducted by IEM is a form of **professional assessment** by which an applicant is assessed whether his professional engineering competence has reached a level that underpins qualification to become MIEM, and subsequently to register as PE.
- The structure of professional interview is mainly comprised of the following:
 - ✓ **Standard**
 - ✓ **Process**

Past Assessment

- In the past, the professional assessment of IEM represents a qualitative assessment that requires a **high degree of judgment** about Candidate's training and experience on all areas listed in the Assessment Report.
- Moreover, the assessment method is tailored more towards engineering consultancy practices.
- Based on the information obtained in documentation and the verification made during Oral Interview, Interviewers will judge and award each area in one of **three levels** - Good (G), Satisfactory (S), Not Satisfactory (NS).
- The Candidate can only pass the Professional Interview if **all areas** are assessed to be either satisfactory or good.

Current Assessment

Important considerations

- Compliance with the **IEM Constitution** on professional interview.
- In line with the **Registration of Engineers Act** on professional assessment.
- A good basis to assess professional engineering competence objectively – **Best Practice**.
- **Mutual recognition** that the person so qualified has met substantial equivalence to an international standard agreed via multi-national agreement.

Choosing a Standard

- Professional Assessment has to be based on a **standard**.
- In an increasingly interconnected world, choosing a standard has to consider the need for **global mobility** of professionally qualified engineers as natural persons to provide professional engineering services.
- This requires mutual recognition of national standards that have substantial equivalence to an **international standard** agreed via multi-national agreement.
- Mutual recognition of their professional competence gives quality assurance to potential foreign clients who intend to engage their service.

Mutual Recognition Agreements

- Examples of agreement on mutual recognition of professionally qualified engineers include:
 - ✓ ASEAN Chartered Professional Engineers (ACPE) Register.
 - ✓ International Professional Engineers Agreement (IPEA) - formerly known as Engineers Mobility Forum (EMF)
 - ✓ APEC Engineers Agreement / Register
- Malaysia is a member of all the above-mentioned three multi-national agreements.

Recognition and Licensure

- However, mutual recognition of professional standard does not guarantee the right to automatic registration as a PE in another member country / economy / jurisdiction.
- Global mobility of professional engineers is often subject to constraints imposed by local regulator.
- It is reasonably necessary for local regulator (host) to establish confidence that the specific jurisdictional registration, licensure, recognition scheme or other requirements are met before a PE of another jurisdiction is allowed to have independent practice in the host jurisdiction.

International Standard

- Mutual recognition of substantial equivalence calls for the need to benchmark a common **international standard** that is well referenced worldwide.
- A good example is the **IEA Professional Competency Profiles** that is used by the International Professional Engineer Agreement (IPEA) as well as the APEC Engineers Agreement (APECA).
- The IEA Professional Competency Profiles are stated generically, applicable to all engineering disciplines. Thus, suitable **adoption and adaptation** is acceptable as long as substantial equivalence is demonstrated.

International Best Practice

- IEM is a **Full Member** of both the APEC Engineer Agreement (APECEA) and International Professional Engineer Agreement (IPEA) under the purview of the International Engineering Alliance (IEA).
- The professional interview conducted by IEM for MIEM / PE is an integral part of the competence assessment **review process** conducted by IEA for mutual recognition.
- The IPEA and APEC Engineers Agreement are moving towards an **Outcome Based Competence Assessment** for mutual recognition.

Benchmarking Practice

- In tandem with the **international best practice**, IEM has benchmarked the **Outcome Based Competence Assessment (OBA)** for professional assessment.
- The OBA generally refers to **IEA Professional Competency Profiles** that consist of competency elements necessary for competent performance that a PE is expected to demonstrate in a holistic way at the stage of attaining registration.
- Using the **professional engineering competence** as a basis for assessment, IEM professional assessment measures the **outcome** of practical training and development for independent practice.

Reference Standard

- In line with the **IEA Professional Competency Profiles**, IEM has **adopted and adapted** the **UK Standard for Professional Engineering Competence (UK-SPEC) for Chartered Engineers** as the reference standard for its professional competence assessment.
- The IEM Competency Standard consists of broad areas of professional competency called **Competency Categories**.
- Each Competency Category comprises a group of **Competency Elements** that describe a specific area of professional competency against which the PI Candidate is assessed.

Key Terms

Key Terms	Definition / Description
Competency Category	A group of Competency Elements that are classified under a broad area of professional competency required for the assessment in Professional Interview.
Competency Element	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 the evidence demonstrated against a specific set of standard criteria.

Assessment of Competence

The professional interview will assess **Competence**.

What is Competence?

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

A -- Knowledge and Understanding

B -- Design & Development of Process, System, Service & Product

C – Responsibility, Management and Leadership

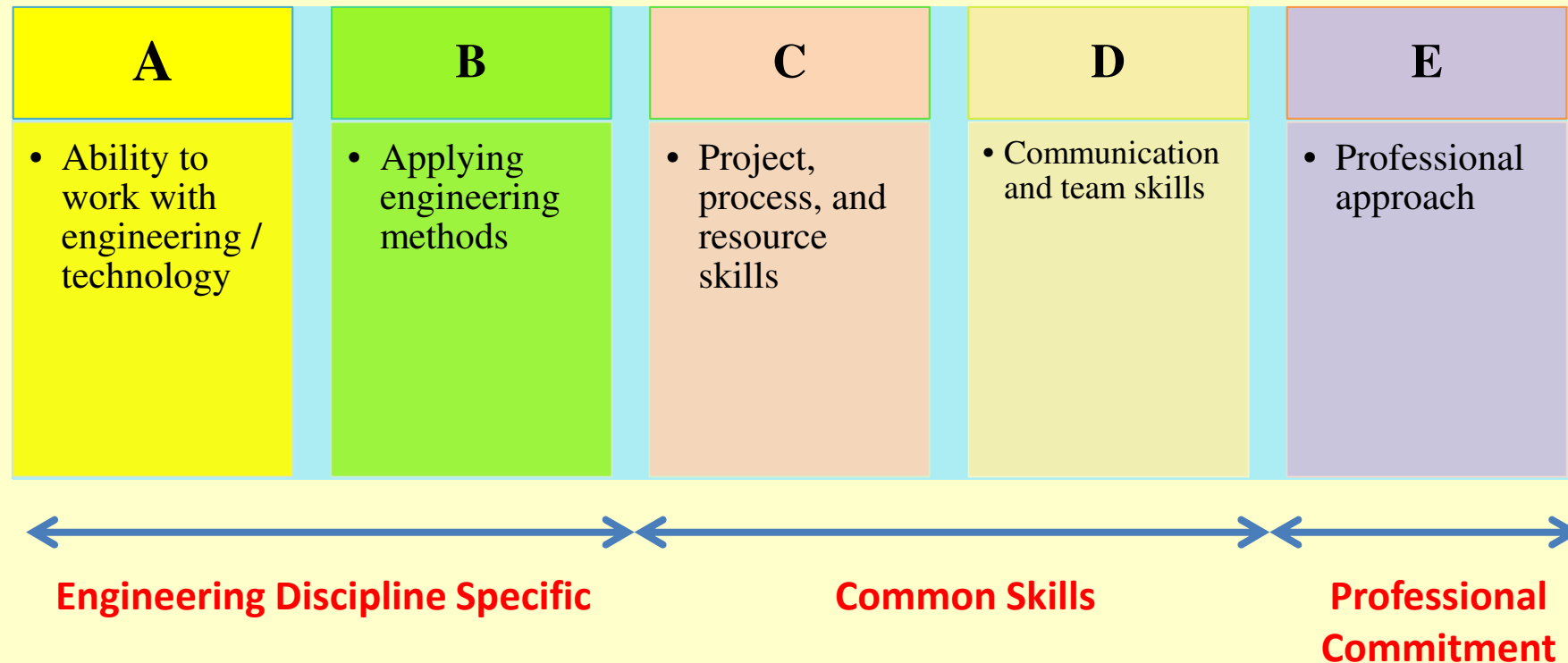
D -- Communication and Inter-personal Skills

E -- Professional Commitment

For Oral Interview

Competency Categories

Interviewers will probe the five competency categories and commitment statements as follows:



Competency Category A

A	Use a combination of general and specialist engineering knowledge and understanding as a basis for optimising the application of existing and emerging technology.
A1	Maintain and extend personal knowledge, understanding and technical skills in own and allied fields of specialisation.
A2	Learn and broaden personal knowledge and experience in the technology, products or services related to own specialisation, preferably with a view to improvement.
A3	Comprehend and apply knowledge and understanding of the relevant engineering codes, standards, specifications, applications, especially those appropriate to local context, requirements, and application.

Competency Category B

B	Apply appropriate theoretical and practical methods to the analysis and solution of engineering problems
B1	Identify projects and/or opportunities/problems
B2	Conduct appropriate research and undertake design and development of engineering solutions.
B3	Implement design solutions, and evaluate their effectiveness.

Note that the **design and site experience** is generally covered in Competency Category B

Competency Category C

C	Provide technical and commercial management.
C1	Plan for effective project or job task implementation.
C2	Plan, budget, organise, direct and control tasks, people and resources.
C3	Lead teams and develop staff to meet changing technical and/or managerial needs.
C4	Bring about continuous improvement through quality management.

Competency Category D

D	Demonstrate effective interpersonal skills
D1	Communicate in English or Malay Language with other at all levels.
D2	Present and discuss proposals.
D3	Demonstrate personal and social skills

Competency Category E

E	Demonstrate a personal commitment to professional standards, recognizing obligations to society, the profession and the environment
E1	Comply with relevant codes of conduct (ethics).
E2	Manage and apply safe systems of work.
E3	Undertake engineering activities in a way that contributes to sustainable development.
E4	Carry out and record continuing professional development (CPD) necessary to maintain and enhance competence in own area of practice.
E5	Understand legal matters pertaining to the engineering profession.

Holistic Assessment

Instead of focusing mainly on technical aspects, this method has a more holistic approach to assessing professional competence:

- Underpinning knowledge & understanding of a branch or sub-branch of engineering.
- Skills in design and development of solution to engineering problem – problem solving.
- People Skills - management, leadership as well as communication and interpersonal skills
- Professional Commitment – safety, sustainability, ethics, continuing development, etc.

Assessing Competence Levels

- Each Competency Category consists of a few Competency Elements.
- There are **5 Competency Categories** with **18 Competency Elements**.
- Professional Interview will **directly assess** the Candidates on all the 18 Competency Elements.
- There are **four (4) levels** for assessing the extent to which Candidate has attained the competence in each competency element.

Assessing Competence Levels

We use the following to **measure attainment** of each competence element. It can also be interpreted from the perspective of learning progress.

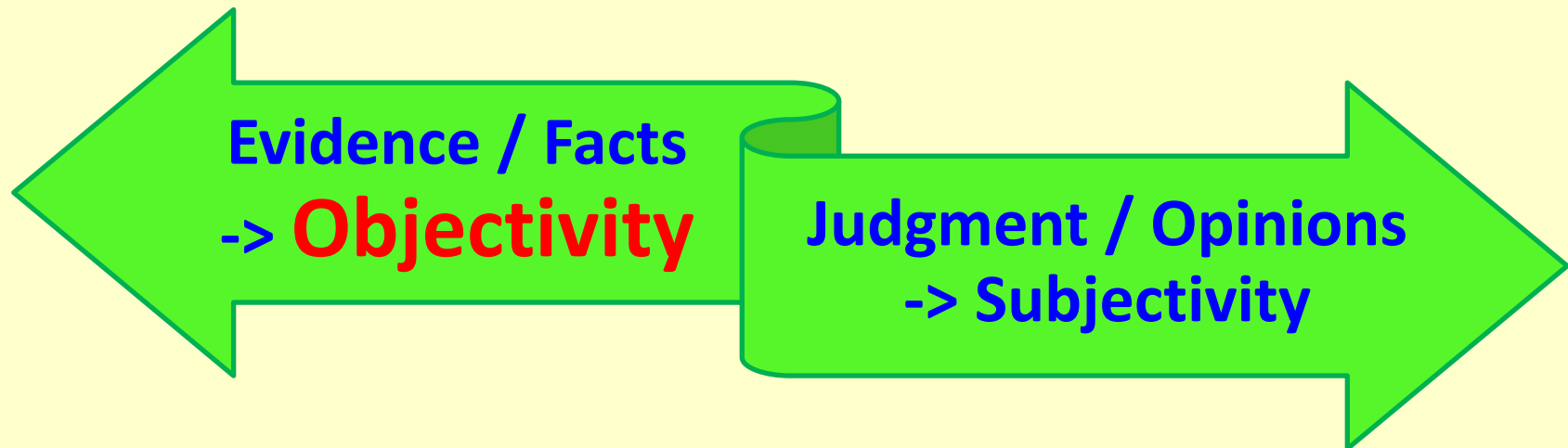
Level	Generic Statement of Attainment
1	Little or no evidence of competency
2	Some evidence of competence
3	Evidence shows acceptable level of competency
4	Evidence shows strong level of competency

Evidence Based Assessment

- Against each of the 18 **Competency Elements**, the Applicants/Candidates will be required to **provide evidence** drawn from their work experience, specifically as they have encountered engineering problems or engaged in engineering activities.
- The **competence level** awarded by PI Interviewers for each Competency Element will be based on the **evidence demonstrated** by Applicant/Candidate in the document submitted and also during oral interview.

Evidence Based Assessment

- Each level has a **threshold statement** that gives a **standard interpretation** of the level, guiding the differentiation between levels ... hence **minimising individual subjectivity** in assessment.



Passing Criteria

Recommendation of a PASS is conditioned on fulfilling all the following mandatory requirements:

- An overall average score currently set.
- Category average score meeting existing threshold.
Note that the average score for categories A and B is set higher to ensure technical competence.
- Discrete competency element E1, E2 and E3 must be higher than the minimum score required.

This is to ensure an acceptable level of competence in the critical areas of ethics, safety and sustainability.

Addressing Concerns

- ✓ Each Candidate has unique work experience because of the nature of job.
- ✓ Most Candidates are able to develop an acceptable level of attaining the relevant competence in the majority of Competency Elements.
- ✓ Very often, candidates can use their strengths in certain areas to compensate their weaknesses in other areas.
- ✓ Nature of work sometimes makes Candidates lacking in a few Competency Elements; but they can still pass PI if they are good in most of the other Elements.

Assessment – Key Features

This **assessment** method is both **competence-based and evidence-based** with the following features:

- ✓ Measure the knowledge, understanding, skills and professional attitude necessary for the PI Candidates to perform effectively – **competence-based**.
- ✓ Use standard threshold statement as the only common assessment yardstick to guide differentiation between the four thresholds thereby minimizing individual subjectivity – **more objective**.
- ✓ Mandate Assessors to base assessment on the evidence demonstrated by PI Candidates – **evidence-based**.

Professional Interview Process

IEM Professional Interview Process has the following two stages:

Stage 1 : Documentary review of competency evidence to assess Applicant's eligibility and readiness to sit for Professional Interview.

Stage 2 : In-person assessment of Candidate that consists of a face-to-face oral interview as well as writing two essays.



**Professional
Interview (PI)**

Stage 1 - Documentary Review

- **Document Assessors** will do a qualitative assessment of the application document to determine whether the *evidence* demonstrated therein shows that PI Applicant is eligible or ready to sit for the professional interview.
- Applicant shall be informed in writing of his *eligibility* to attend the **Professional Interview** if he is assessed to be eligible and ready.
- **Why** is documentary review needed?
- **What** information or evidence is needed for documentary review?



Application Document

The persons who intend to sit for professional interview have to submit three (3) document on application:

1. **Application Form.**
2. **Portfolios of Evidence.**
3. **Technical / Project Report.**

What document ?

Apply



Application Form

The Application Form contains the information below:

- ✓ Personal details and expertise areas.
- ✓ Current employment and organisation chart.
- ✓ Tertiary education and professional development.
- ✓ Career history in chronological order.
- ✓ Practice training and experience.

This serves to provide summary evidence for the 18 competency elements.

- ✓ Declaration and supports' signature.

Application Form

- The PI Application Form should contain **documentary evidence** to show that the Applicant has the necessary education, training, and practical experience for the Professional Interview.
- The Supporters should know the Applicant well and be convinced, through direct or personal experience, that the applicant is suitable to be elected as or transferred to the grade of MIEM. The Supporters typically have detailed and up-to-date knowledge of the Applicant's work so that all the information in the application can be verified.
- At least one of the Supporters must be of the same engineering discipline; and preferably from the same organisation as that of the Applicant.

Portfolios of Evidence

The Portfolio of Evidence contains the following:

- A portfolio of evidence to demonstrate adequacy of competence in all the 18 *competency elements under categories A, B, C, D and E*.
- Other document to support the portfolio of evidence if deemed relevant and necessary. Supporting documents should be clearly referenced.
- Typically, each competency element should show some examples of evidence.
- Portfolio of evidence and supporting documentation should be signed by the Applicant and the Supporters.

Portfolio of Evidence

A. Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology.

Evidence of Your Competence on Competency Category A		Revision Date
A1	Maintain and extend personal knowledge, understanding and technical skills in own and allied fields of specialisation.	
A2	Learn and broaden personal knowledge and experience in the technology, products or services related to own specialisation, preferably with a view to improvement.	
A3	Comprehend and apply knowledge and understanding of the relevant engineering codes, standards, specifications, applications, especially those appropriate to local context, requirements, and application.	
Declaration of The Candidate	Name : Signature :	
Declaration of The Supporter	I am confident that the evidence described above is a true record of the competencies that have been demonstrated by this Candidate. Name: Signature:	

Technical Report

Technical Report is typically based on the engineering project or work area in which the Applicant has played a major role and/or gained substantive technical expertise.

The Technical Report will be evaluated to ascertain:

- ✓ The depth of technical competence in Competency Categories A and B.
- ✓ Adequacy of the technical profile as a whole whether the Applicant is technically competent to sit for Professional Interview.

The content must be technical in nature. A pure management study is not acceptable.

Technical Report

Two (2) copies of Technical Report printed on A4 paper shall be submitted with supporting sheets, calculations, tables, charts, diagrams and/or drawings duly certified.

This Report shall include one or more of the following :

- **Design Work**
- **Feasibility Study**
- **Research and Development Work**
- **Operations and Maintenance Work**
- **Other Engineering Work**

Stage 2 - Professional Interview

Once the Application Documents are duly submitted, evaluated and accepted :

- ✓ The Applicant has become a **PI Candidate** who is ready to sit for the professional interview.
- ✓ The PI Board (IEM) will assign **two** suitably qualified and trained MIEM/PE as **Interviewers / Assessors** to conduct the professional interview.
- ✓ The IEM **Secretariat** will coordinate with the Interviewers and the Candidate on the date, time and venue for the professional interview.

Professional Interview

- Professional Interview is a **peer review**, a process by which a Candidate is checked by MIEMs (the would-be peers of Candidate) in the same engineering discipline to ensure that he meets the necessary standards before he is admitted as MIEM (one of the peers).
- At the end of professional interview, the Interviewers must determine if the evidence demonstrates that the Candidate has attained **the range of competencies** at a level appropriate to be admitted as MIEM.



Professional Interview Format

- All eligible Candidates should proceed to sit for the **Professional Interview**.
- The **format** of Professional Interview shall consist of two parts:
 - ✓ **The Oral Interview**
 - ✓ **The Written Examination**
- Candidate must complete the two parts in order to satisfy the Professional Interview's requirements.

Appointing Interviewers

- IEM shall appoint two (2) suitably qualified and trained interviewers (MIEM / FIEM / PE) to conduct the professional interview for the Candidate.
- At least one Interviewer shall have substantial experience in the **same or similar or allied** engineering discipline as that of the Candidate.
- Attempts should be made to select two Interviewers who will complement each other.
- The Interviewers should have substantial experience; preferably at least 10 years as MIEM/PE.

Conflict of Interest

Watch out for **conflict of interest** when appointing Interviewers.



Appointed Interviewers should confirm the acceptance of appointment and declare no conflict of interest by returning the signed **Acceptance and Declaration Form**.

Conflict of Interest

Interviewers should not be selected from:

- ✘ The Supporters of Candidate's application.
- ✘ A person employed in the same or related organization as the Candidate.
- ✘ A person who is a close family member of Candidate.
- ✘ A person who is a close friend of the Candidate.
- ✘ A person who might have conflict of interest in PI.
- ✘ A PI Board Member who is directly involved in appointing Interviewers for the Candidate.
- ✘ A PI Assessor who is directly involved in assessing the Candidate's eligibility to sit for the PI.

Oral Interview

- Allocate typically about **one hour thirty minutes** for the oral interview for each Candidate.
- While there is a need to be flexible, it is recommended that the Interviewers should agree on a **general format**:
 - ✓ *Introduction*
 - ✓ *15 Minute Presentation by Candidate*
 - ✓ *60 Minute Q&A Session*
 - ✓ *Opportunity for Final Evidence*
 - ✓ *Conclusion*

Oral Interview

60-Minute Q&A Session

- May use career history in the Application Form and/or the portfolios of evidence as a guide.
- Encourage the Candidate to talk about his work in chronological order to draw out evidence of competence during discussion.
- Probe further specific competence areas including those highlighted in the Assessor Summary Form.
- Ensure to cover full range of competencies by assessing all the five competence and commitment statements.

Oral Interview

60-Minute Q&A Session

- Ask questions in a clear and concise manner so that the Candidate can understand.
- Don't ask multiple questions as this often results in only one part being answered.
- Don't ask trick questions as this will make the Candidate feel uncomfortable.
- Allow Candidate to give answers uninterruptedly.
- Resist the temptation to air individual opinion or talk on a pet topic.

Written Examination

- At the end of the Oral Interview, Interviewers should proceed to the second part of the Professional Interview, namely the Written Examination.
- Candidate must complete both the oral interview and the written examination in order to satisfy the Professional Interview's requirements.
- Written Examination consists of two sections.
 - Section A is on technical topics.
 - Section B is on Code of Professional Conduct.

Written Examination

Section A

- Interviewers will typically set two questions, of which the candidate chooses one to answer.
- The set questions are typically related to the technical report or portfolio of evidence on Competency Categories A and B submitted by the Candidate.
- It is intended to test candidate's technical knowledge on the technical subjects on which he has gained substantial experience.
- Time to complete Section A paper is 1.5 hours.

Written Examination

Section B

- Interviewers will typically set two questions, of which the candidate chooses one to answer.
- The set questions are typically chosen from the official list of printed questions related to the IEM Regulations on Professional Conduct.
- It is intended to test how the Candidate thinks about the role of the engineer in society vis-à-vis the Regulations on Professional Conduct.
- Time to complete Section B paper is 1.5 hours.

Assessment Report

- The Professional Interview Report consists of two main parts, (1) the Oral Interview Report, and (2) the Written Examination Report.
- A **PASS Recommendation** is conditioned upon fulfilling the following mandatory requirements:
 1. Pass in Oral Interview; and
 2. Pass in both Section A and Section B of the Written Examination.
- Interviewers should reach an agreed recommendation for both the oral interview and the written Examination; and give an overall assessment of the Candidate.

Decision Making

- The assessment report with recommendation will first be subjected to scrutiny by the **PI Board**.
The main task is to check that the recommendation is fair and based on demonstrated evidence and prevailing rules. Moderation is done especially on fail or marginal cases.
- The moderated list of Pass and Fail cases will then be submitted by PI Board to the **Standing Committee for Examination and Qualification (E&Q)** for further deliberation and decision.
- The list deliberated by E&Q will finally have to be endorsed by the **IEM Council**.

Appeal Process

- When the Professional Interview result is a Fail, the Candidate will be informed of the reasons for failure; and he has the right to appeal.
- If the Candidate intends to appeal, he shall have to fill up and submit the Appeal Form complete with reasons and justifications.
- An appeal is accepted only if The grounds put forth for appeal are accepted.
- Two senior PI Interviewers will be appointed to review the appeal cases. Their findings and verdict are final. Appeal against appeal is not allowed.

Guidelines and Training

- There are three groups of stakeholders that need guidelines and training, namely **Document Assessors, PI Interviewers, and Applicants**.
- We have developed role-based guidelines for the three groups of stakeholders respectively.
- We have been conducting regular training for Document Assessors as well as PI Interviewers; and also refresher training to update them.
- Training is aimed to ensure that they are thoroughly familiar with the guidelines as well as the roles and duties they are mandated to perform.

Guidelines and Training

- We have been conducting regular training workshop for the Applicants who must be properly briefed on their part in professional assessment.
- Applicant training workshop normally covers topics like document to be submitted, scope to be covered, competence to be measured, evidence writing, in-person presentation, question and answer, related rules, etc.
- They are also briefed on exam ethics, conflict of interest, interview decorum, etc.
- Training workshop is aimed to help the Applicants get as well prepared as possible for whole assessment process.

From MIEM to PE

The IEM Professional Interview is an **Evidence-based and Outcome-based Competence Assessment**.

- ➔ By passing the **Professional Interview**, the person will become a Corporate Member of IEM viz. **MIEM**.
- ➔ Upon becoming MIEM, the person will be eligible to register with the Board as **Professional Engineer (PE)**.



PE with Practicing Certificate

To qualify as a **Professional Engineer with Practicing Certificate (PE with PC)**, the Candidate must :

- ☑ Be a **Professional Engineer (PE)** in good standing.
- ☑ Pass the **Professional Competency Examination (PCE)**, which is conducted by BEM.

Only PE with practicing Certificate can set up Engineering Consultancy Practice and submit plans and drawings.

PE Renewal - CPD

How to keep the currency of knowledge, skills and expertise ?



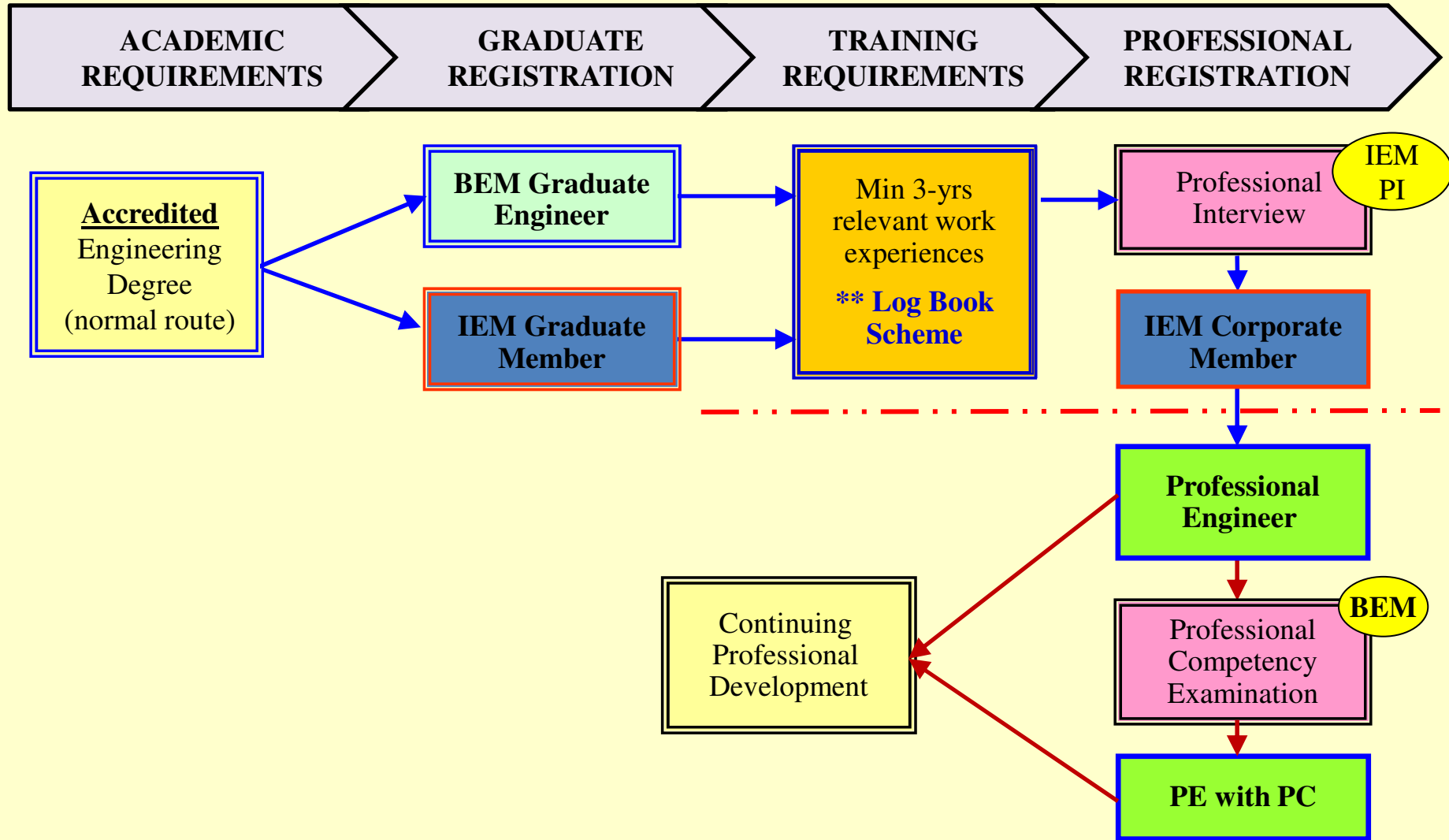
Besides submitting the renewal document and paying the renewal fee, a registered PE desirous of renewing his registration has to satisfy Continuing Professional Development (CPD) hours required by the Board:

- ✓ **25 CPD hours per annum for PE**
- ✓ **50 CPD hours per annum for PE with PC**

PE Renewal - CPD

Ref.	CPD Activity/Topic/Provider	Time Weighed Factor	Max Allowable Weighted CPD Hours
1	Formal Education and Training Activities	2	No limit
2a	Informal Learning Activities -- on job learning	1	20
2b	Informal Learning Activities -- private study	0.5	20
3	Conference and Meeting	1	No limit
4	Presentation and Papers	10	30
5	Service Activities	1	30

Route to MIEM / PE - Summary



APEC Engineers Register

IEM holds a separate **APEC Engineers Register**. **Applicant** must fulfil the following criteria:

- ✓ An engineering degree accredited by an organisation that either (i) holds full membership of **WA**; or (ii) uses best practice guidelines of **FEIAP**; or equivalent
- ✓ Professional engineering competence for independent practice with a minimum period of **seven years** practical experience since graduation, including at least two years in responsible charge of significant engineering work.

IEM also holds an International PE Register

Summary

- Professional assessment represents the second stage in the overall assessment continuum; it assesses the competencies required for independent practice.
- Passing the professional interview to become MIEM is the route under the Act to registration as a professional engineer for independent practice in Malaysia.
- The pre-requisites to sit for professional interview include having an engineering degree accredited or recognised by EAC; and at least three years of practical experience.
- The assessment standard for IEM is referenced to both the IEA Professional Competency Profiles and the UK-SPEC for Chartered Engineers.

Summary

- The IEM Professional Interview is an Outcome-based Competence Assessment using evidence for the eighteen competency elements as a basis for assessment.
- The professional interview process has two stages, viz. the documentary review and the in-person interview; and the in-person interview employs two methods, viz. face-to-face oral interview and written examination.
- The recommendation by PI interviewers is subjected to three levels of check and balance in the decision making process; an attempt to make it fair and consistent.
- Persons who pass the professional interview becomes MIEM; eligible to register as the professional engineer.



**Thank you for
listening !**