

EXPLANATORY NOTES TO PAE CANDIDATES

Candidates are advised to read and understand these explanatory notes before:

- (1) filling up the application form and***
- (2) preparing for the assessment process***

I. BEM Outcome-based Professional Assessment Examination (PAE)

The BEM Outcome-based PAE is in line with the **global move** in the international engineering communities towards an **outcome-based competence assessment** for international recognition.

With this assessment method, the PAE would be ***on par with the international best practices.***

II. Objective of Outcome-based PAE

The main objective is to confirm whether the candidate's training and experience has satisfactorily met the competence (outcome) required for a professional engineer. Two PAE examiners will conduct an in-depth interview to authenticate the candidate's practical experience as presented by the evidence provided in the application form as well as the training & experience report, and to verify the competence presented therein.

III. Key assessment features:

This **assessment** method is both **competence-based** with the following **features and/or benefits**:

- ❖ Measure the knowledge, understanding, skills and professional attitude necessary for PAE Candidates to perform effectively – **competence.**
- ❖ Use standard competency descriptors as the only assessment yardsticks – **one common ruler.**
- ❖ Use rubrics to assess the competence level, and minimize individual subjectivity – **more objective.**
- ❖ Examiners to base assessment on the evidence demonstrated by Candidates – **evidence based.**

EVIDENCE is facts/information to support what you state to have gained from your training

IV. The Training and Experience Report must be filled and attached together with the Application Form

PERSONAL COMPETENCE ASSESSMENT

What is the meaning of competence?

Professional competence is the ability to carry out a task to an effective standard, of which the achievement requires the combination of knowledge, understanding, skills, values as well as professional attitudes. It denotes the ability to perform a specific task correctly, safely, effectively and consistently.

What characteristics are to be demonstrated?

Professional Engineers are characterized by their ability to develop appropriate solutions to engineering problems, using new or existing technologies, through innovation, creativity and change.

They might develop and apply new technologies, promote advanced designs and design methods, introduce new and more efficient production techniques, marketing and construction concepts, or pioneer new engineering services and management methods. Professional Engineers are variously engaged in technical and commercial leadership and possess effective interpersonal skills. They must also demonstrate professional commitment.

COMPETENCY AREAS

Five areas of competency are being assessed:

- A. **KNOWLEDGE AND UNDERSTANDING OF ENGINEERING:**
Comprehension of advanced engineering knowledge of the widely-applied principles underpinning good practice.
- B. **PRACTICAL APPLICATION OF ENGINEERING:**
Application of appropriate theoretical and practical methods to the analysis, design and/or solution of engineering problems.
- C. **MANAGEMENT AND LEADERSHIP:**
Responsibility, management and leadership in relation to technical, commercial and financial matters.
- D. **COMMUNICATION AND INTERPERSONAL SKILLS:**
Ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.
- E. **ETHICAL AND PROFESSIONAL CONDUCT:**
Personal commitment to ethical conduct, professional standards, recognizing obligations to society, the profession and the environment.

Competency areas A, B, C and D will be assessed during your oral interview. However, Competency area E will be assessed through a written examination. You are strongly recommended to write up Competence area E which you can use as a reference for your written exam.

When filling up the **Application form**, you are required to (a) describe concisely each job task or project work you have **personally** performed; (b) indicate the size and complexity of the job task or project work; and (c) specify the role you have played in the job task or project work as follows:

1. **Participating role** (participate and learn in the job task or project work)
(Candidate has minimum involvement but does not have sufficient evidence)
2. **Contributing role** (gain better experience and contribute to the job task or project work)
(Candidate has moderate involvement and sufficient evidence to show his exposure)
3. **Leading role** (lead the job task or project work and account for the outcome)
(Candidate has substantial involvement and is able to strongly indicate his exposure)

Against each job task or project work described in the application form, just put in the role you played in terms of 1, 2, or 3 under the related competence elements (A, B, C, D, E). This is to enable the PAE examiners to know all the job tasks or project works that are related to each and every competence element.

THE PROFESSIONAL INTERVIEW

(to assess attainment achieved in Competency areas A, B, C and D)

The format of the interview is normally arranged as follows:

- Introduction
- 15 Minutes of Presentation by the Candidate
- 45 Minutes of Q&A Session
- Opportunity for providing final evidence
- Conclusion

The interview will be conducted in English (or in Bahasa Malaysia upon request by the candidate).

Assessment

The purpose of the interview is to confirm that you have demonstrated the overall level of competence in all the competence and commitment areas expected of a professional engineer.

The examiners will generally use the practical experience section of your application form as an agenda for the interview and will encourage you to talk about your experience, drawing out evidence of competence during the interview.

The examiners will triangulate the evidence gained during the interview to the competence and commitment areas. They will give you the opportunity to expand on the information in your application and clarify any points.

Documents/Reports/Drawings presented should be certified by a PEng / PEPC.

Presentation

The purpose of the presentation is to enable you to highlight at the beginning of the interview, specific aspects of your work which you may consider most suitable to demonstrate the competence categories A and B. The presentation will also aid the examiners in their assessment of your evidence relating to competence category D. However, the presentation will only form a small part of the overall assessment as the examiners will examine your full evidence during the remaining part of the interview.

The presentation will start at the beginning of the interview and typically last about 15 minutes, providing you with the opportunity to explain one or two examples of technical work that you have performed in a leading or contributing role. It is not intended for you to use this opportunity to present your application and/or CV, nor to dwell on any competences not related to A and B.

The content of the presentation should be based on either:

- (a) A single piece of work or project that you consider best to highlight your competences A and B, or;
- (b) Examples from your portfolio that you consider best to highlight your competences A and B.

You are not required to go into a deep technical description. It will be sufficient to just demonstrate the key points of your personal technical contribution to the work presented. The examiners will explore this further during the main part of the interview.

The preferred mode is a PowerPoint presentation, limited to **maximum of 8 slides**.

Presentation material should be sent by email to the examiners with a copy to the BEM's agent two days before the interview.

If your presentation is not satisfactory, examiners may subject you to a written examination on technical topics (technical essay) based on your experience.

FAILURE IN THE TECHNICAL ESSAY WILL RESULT IN FAILURE AT THE INTERVIEW

CODE OF CONDUCT ESSAY (to assess attainment achieved in Competency Area E)

After the interview, you will be required to write an essay on your understanding of the Code of Conduct and professionalism.

Competency Area E:

ETHICAL AND PROFESSIONAL CONDUCT.

Personal commitment to ethical conduct, professional standards, recognizing obligations to society, the profession and the environment.

Competency Area E is subdivided further into five (5) Competency Elements, E1 to E5, as listed below.

Instruction:

*You are required to demonstrate your competence in area E by writing an essay to share your **PERSONAL EXPERIENCE** covering the five Competency Elements. If you have not encountered significant personal experience for any of the five Competency Elements listed, you may demonstrate your understanding in those Competency Elements by means of narrating hypothetical or other real life example cases not necessarily experienced by you. You may write in either the English language or Bahasa Malaysia.*

E1. Compliance with relevant codes of conduct and ethical principles.

Examples of activities as evidence to demonstrate this competency:

- *Understanding the ethical issues that you encounter in your role*
- *Demonstrating compliance with relevant codes of conduct/ethics*
- *Identifying aspects of the code which are particularly relevant to your role*
- *Handling problems of ethical or moral nature*
- *Upholding ethical principles as defined by your organisation or company, giving example/s.*

E2. Managing and applying safe systems of work.

Examples of activities as evidence to demonstrate this competency:

- *Identifying and taking responsibility for your own obligations and ensuring that others assume similar responsibility (for health, safety and welfare issues)*
- *Ensuring that systems satisfy health, safety and welfare requirements*
- *Developing and implementing (including evaluating and improving) appropriate hazard identification and risk management systems and culture*
- *Applying health and safety legislation, codes, guidelines and/or relevant company policies*

E3. Undertaking engineering activities consistent with principles of sustainable development with due care to the environment.

Examples of activities as evidence to demonstrate this competency:

- *Applying principles of sustainable development in your day-to-day work*
- *Acting responsibly, taking account of environmental, social and economic issues simultaneously*
- *Providing products and services which maintain and enhance the quality of the environment and community, and while meeting financial objectives*
- *Understanding and securing stakeholder involvement in sustainable development*
- *Minimising wastage and environmental impact while using resources efficiently and effectively.*

E4. Continuing professional development (CPD) to maintain and enhance competence in your own area of practice.

Examples of activities as evidence to demonstrate this competency:

- *Undertaking reviews of your own development needs*
- *Planning how to meet personal and organisational CPD objectives*
- *Carrying out planned and unplanned CPD activities such as training or attending courses & seminars*
- *Maintaining evidence of competence development*
- *Evaluating CPD outcomes against any plans made*
- *Assisting others with their own CPD*

E5. Understanding the legal matters pertaining to the engineering profession.

Examples of activities as evidence to demonstrate this competency:

- *Being aware of the Registration of Engineers Act, including attending seminars, workshops, etc*
- *Being aware of other laws and regulations relevant to your role (such as contract law, construction law, environmental law, health/safety law), including attending seminars, workshops, etc*
- *Ensuring compliance to relevant laws and regulations in your work involvement, giving examples*
- *Involved with work within relevant legislation and regulatory frameworks, including social and employment*

Time allocated for the essay writing covering all the 5 items above is 1½ hours

You are given TWO attempts to pass this Code of Conduct Essay