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COMPETENCE STANDARDS FOR ENGINEERING TECHNICIANS

This Competency Model for Oral Interview of the Technicians Assessment is prepared using the reference of the UK Standard for Professional Engineering Competence (UK—SPEC), specifically on the Competence and Commitment Standard for **Engineering Technician**.

Engineering Technicians Members of IEM should demonstrate:

- The appropriate knowledge to solve problems with new technologies and develop new analytical techniques.
- Successful application of the knowledge to deliver innovative products and services and/or take technical responsibility for complex engineering system
- Accountability for project, finance and personal management and managing trade-offs between technical and socio-economic factors.
- Skill sets necessary to develop other technical staff.
- Effective interpersonal skills in communicating technical matters.
- Personal commitment to professional standards.

This IEM Engineering Technicians Competency Model consists of fourteen Competency Elements and Standards 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. The Competency Elements are used as the basis for assessing Applicants who apply to sit for the Technicians Assessment conducted by IEM. Applicants will be required to provide evidence of competence against each of the fourteen 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	Ability to use engineering knowledge and understanding to apply technical and practical skills
A1	In reviewing and selecting appropriate techniques, procedures and methods to complete tasks
The Engineering Technicians will need to describe examples of work completed successfully including the decisions, selection of methodology and the result. Provide explanation on work that were not able to be accomplished successfully indicating the reasons why it did not work. Provide samples of techniques, procedures or methods where improvement were derived by him/her.	
A2	Use of appropriate scientific, technical or engineering principles.
The Engineering Technician may draw from direct experience some explanation of how a piece of equipment, system or mechanism works.	

B	Contribute ideas to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services.
B1	Identifying problems and applying appropriate methods to identify causes and achieve satisfactory solutions
TnA Candidates need to provide an example of how they have used measurements, monitoring and assessment to identify the source of a problem or an opportunity or to propose a solution.	
B2	Identifying, organising and using resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.
TnA Candidates need to illustrate how they make decisions about: – the information, material, component, people or plant to use; or –introducing a new method of working; or –precautions taken	
B3	Describe what contributions were made to best practice methods of continuous improvement, eg ISO 9000.
TnA Candidates need to describe how or what they have contributed towards best practice methods for continuous improvement in their work.	

C	Accept and exercise personal responsibility – description of any experience where personal responsibility was taken to ensure a process proceeds to fruition within agreed targets.
C1	Work reliably and effectively in accordance with the appropriate codes of practice without need for close supervision.
The TnA Candidates need to provide evidence to show how they identified and decide on what had to be done and the standards to be achieved on a typical project.	
C2	Accept responsibility for work of self or others and to accept, allocate and supervise technical and other tasks.
Evidence could include: • minutes of meetings; site notes and instructions; • variation orders; • programmes of work; • specifications, drawing and reports; or appraisals. • activity not associated with the job can also contribute evidence	

D	Use effective communication and interpersonal skills
Interpersonal skills are to be assessed in three areas: general communications at all levels: presenting and discussing proposals; and people skills. These skills are of increasing importance in modern engineering practice, and ideally a good Engineering Technician will need to be competent in all aspects. There is a need to show ability to contribute to discussions; make a presentation; read and synthesise information; or write different types of documents.	
D1	Communicate in English or Malay with others at all levels.
Evidence could include letters, reports, drawings, emails, minutes of meetings, appraisals, work instructions, and other planning and organising documents.	
D2	Work effectively with colleagues, clients, suppliers or the public especially having sufficient awareness on the needs and concerns of others especially in terms of diversity and equality.
Examples of any occurrence and to describe the TnA Candidates role at the time and how it relates to the team.	

E	Commitment to BEM Code of Professional Conduct, IEM's Regulation on Professional Conduct, obligations to society, the profession and the environment
The TnA Candidates need to be able to commit to the provisions documented under various laws and regulations in carrying out their roles and responsibilities.	
E1	Comply with relevant codes of conduct
The TnA Candidates need to be able to show how they complied with the rules of professional conduct and manage their work within all relevant legislation and regulatory frameworks, including social and employment legislation.	
E2	Manage and apply safe systems of work.
Demonstrate ability to identity and take responsibility for their obligations for health, safety and welfare issues. They should be able to manage systems that satisfy health, safety and welfare requirements as well as implement appropriate hazard identification and risk management systems.	
E3	Undertake engineering activities in a way that contributes to sustainable development.
Demonstrate ability to operate and act responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously.	
E4	Carry out continuous development necessary to maintain and enhance competence in own area of practice.
Demonstrate that they have actively sought to keep themselves up to date by: • studying new standards or techniques, or • made use of magazines, lectures organised by professional engineering institutions, or • other opportunities to network in order to keep abreast of change.	
E5	Exercise responsibilities in an ethical manner
Provide examples where ethical principles as described in the Code of Professional Conduct had been applied or examples where ethical principles as defined by your organisation or Company had been applied/upheld.	