ENGINEERING COMPETENCY DEVELOPMENT

IEM Mentor-Mentee Engagement

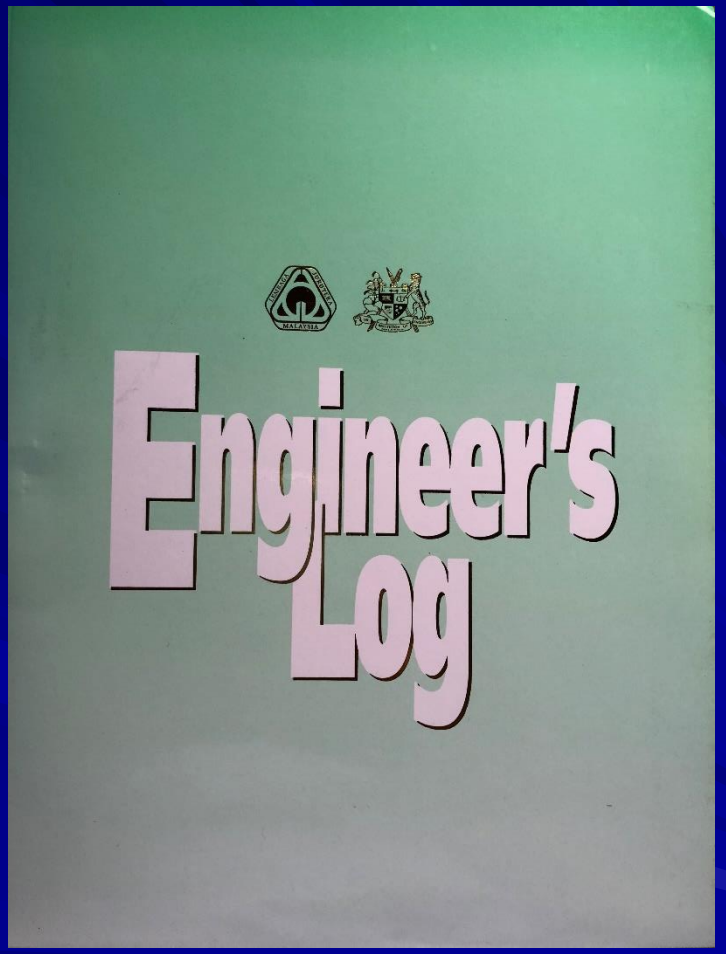
16 March 2019

9:00 a.m. – 1:00 p.m.

Previously known as the

Logbook Training Scheme

(ECD)



LOG BOOK TRAINING SCHEME SUB-COMMITTEE

DISCIPLINE	MEMBER
Electrical & Electronics, Telecommunications, Biomedical, Mechatronics	Prof. Ir. Wong Hin Yong (Previous Chairman)
	Ir. Mohd. Azha bin Abu Samah
	Ir. Lim Kim Ten
Chemical	Ir. Juares Rizal bin Abdul Hamid (Advisor)
	Prof. Ir. Dr. Tee Tiam Ting
	Ir. Razmahwata Mohd Razalli
Mechanical	Ir. Al-Khairi Mohd. Daud
	Prof. Madya Ir. Dr. Abdul Talib
	Ir. Syed Neguib bin Syed Mohamed
Civil & Structural	Ir. Dr. Anuar Kasa
	Ir. Han Seng Kong
Petroleum	Ir. Abdul Razak bin Yakob (Chairman)

IEM Secretariat

Puan Halimah Musa

Email: halimah@iem.org.my

Tel: 03 – 7968 4001 / 2

Fax: 03 – 7957 7678

Important Notes

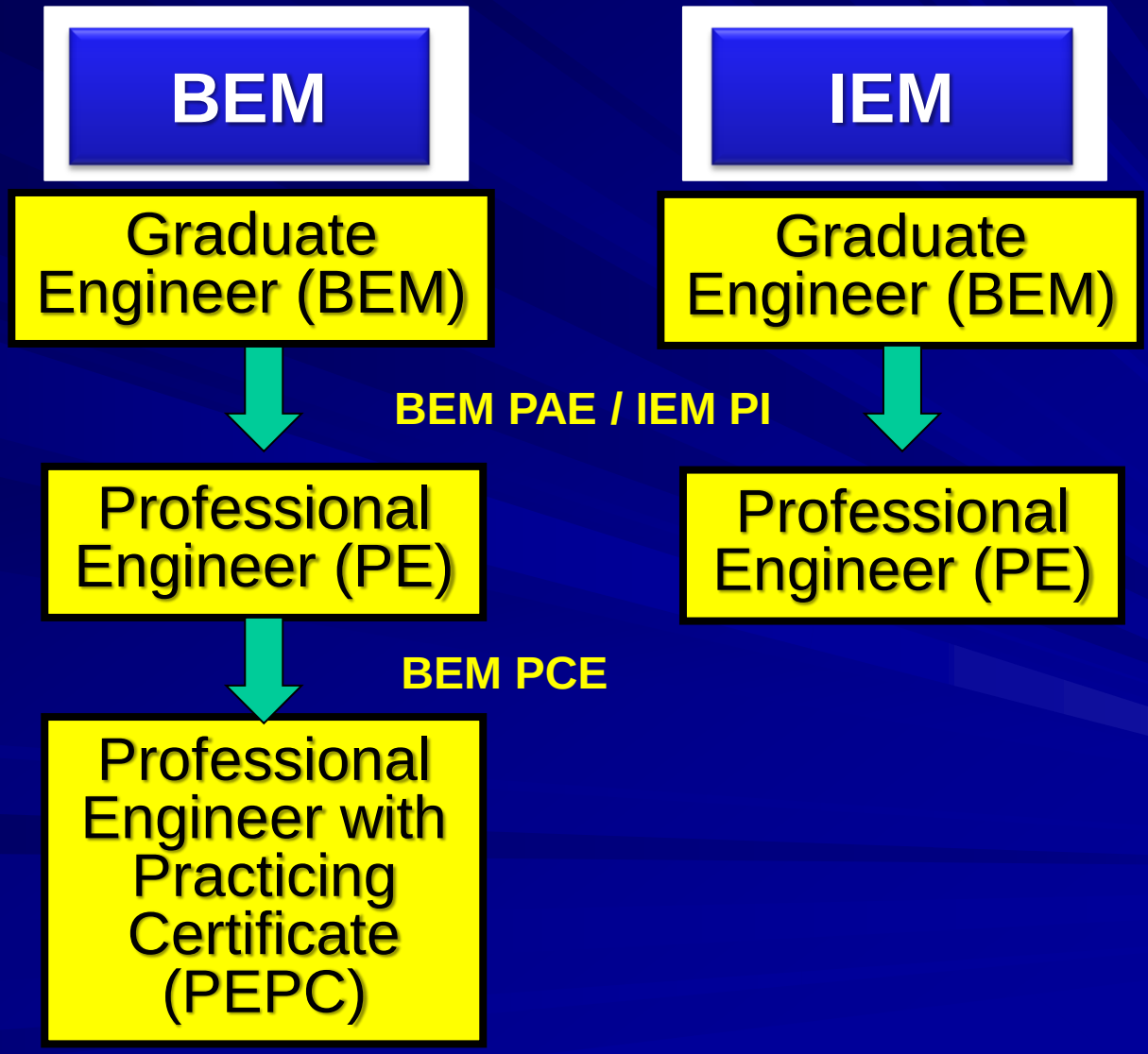
EVENT	IMPLICATIONS	EFFECTIVE DATE
1. Changes to **Registration of Engineers Act 1967 (Amendment 2015)**	**2 categories of Professional Engineers:** - Professional Engineers (PE) - Professional Engineers with Practicing Certificate (PEPC)	31 July 2015
2. Introduction of **IEM Structured Training Program**	Made possible for graduate engineers without design experience to have industry-typical & generic work competency elements to **meet IEM minimum exposure in Design/Office for the PI candidacy**	Ongoing

What We Will Cover

	TOPIC	SPEAKER
1.0	Overview on Route to M.I.E.M. and Professional Engineer	Ir. Abdul Razak Yakob
2.0	Highlights on IEM P.I. Process	Ir. Abdul Razak Yakob
3.0	Briefing on IEM Structured Training Program	Ir. Juares Rizal
4.0	ECD Mentorship Program • Roles & Responsibilities of Mentees • Roles & Responsibilities of Mentors	Ir. Dr. Prof. Madya Abdul Talib
5.0	IEM Log Book • Log Book Details	Ir. Dr. Prof. Madya Abdul Talib
6.0	Q&A	All Committee

1.0
Route to M.I.E.M. & Professional Engineer

Concept of BEM Registration
(Effective 2016 Registration)



Board of Engineers Malaysia

Statistics of Registered Engineers in Malaysia as at 23 February 2019

STATISTICS

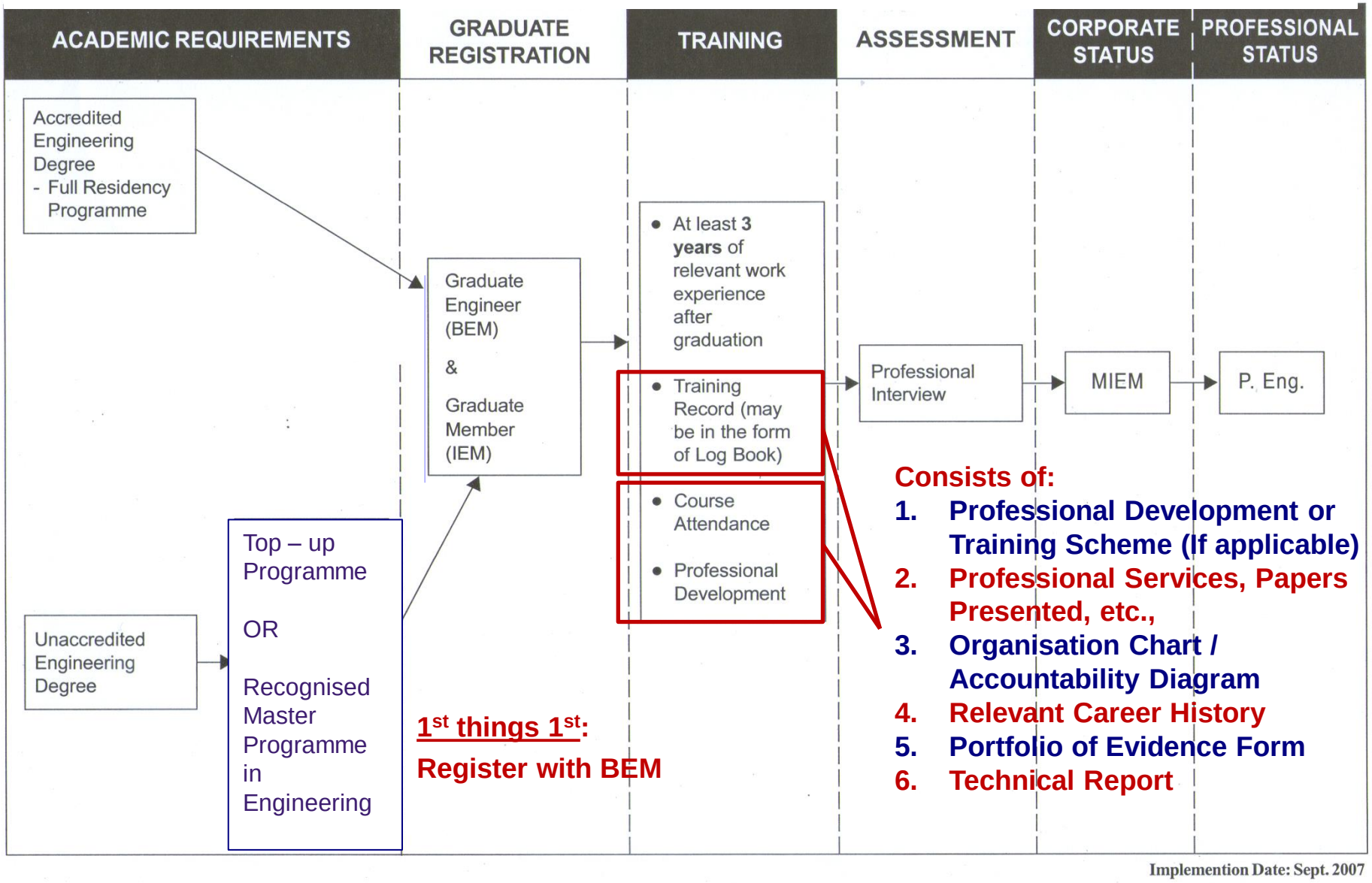
Individual

::	Professional Engineer with Practising Certificate	9272
::	Professional Engineer	3139
::	Accredited Checker Structural	14
::	Accredited Checker Geotechnical	15
::	Graduate Engineer	116202
::	Engineering Technologist	4105
::	Inspector of Works	3609

Consultancy Company

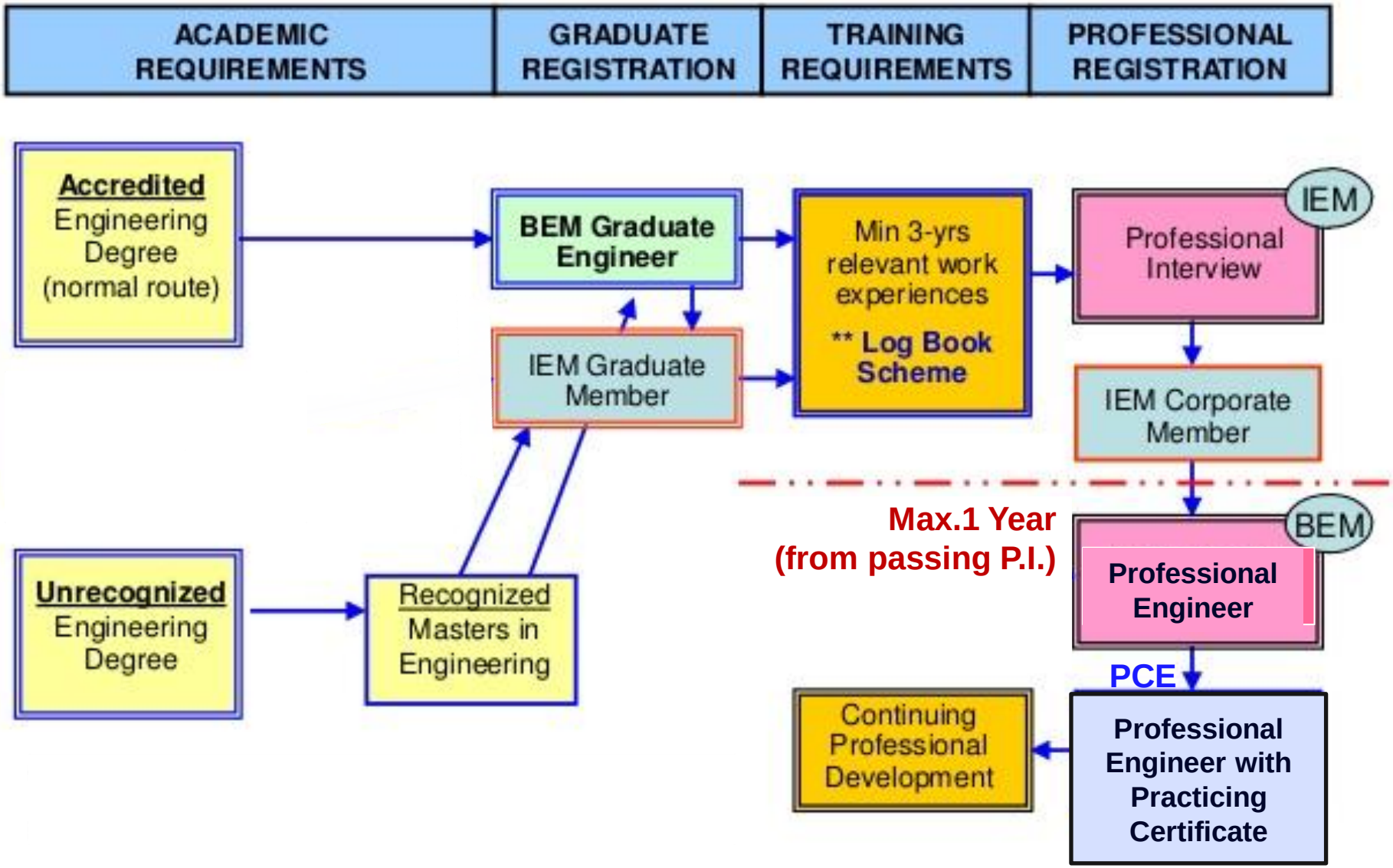
::	Body Corporate	1080
::	Multidisciplinary	48
::	Partnership	220
::	Sole Proprietorship	1141

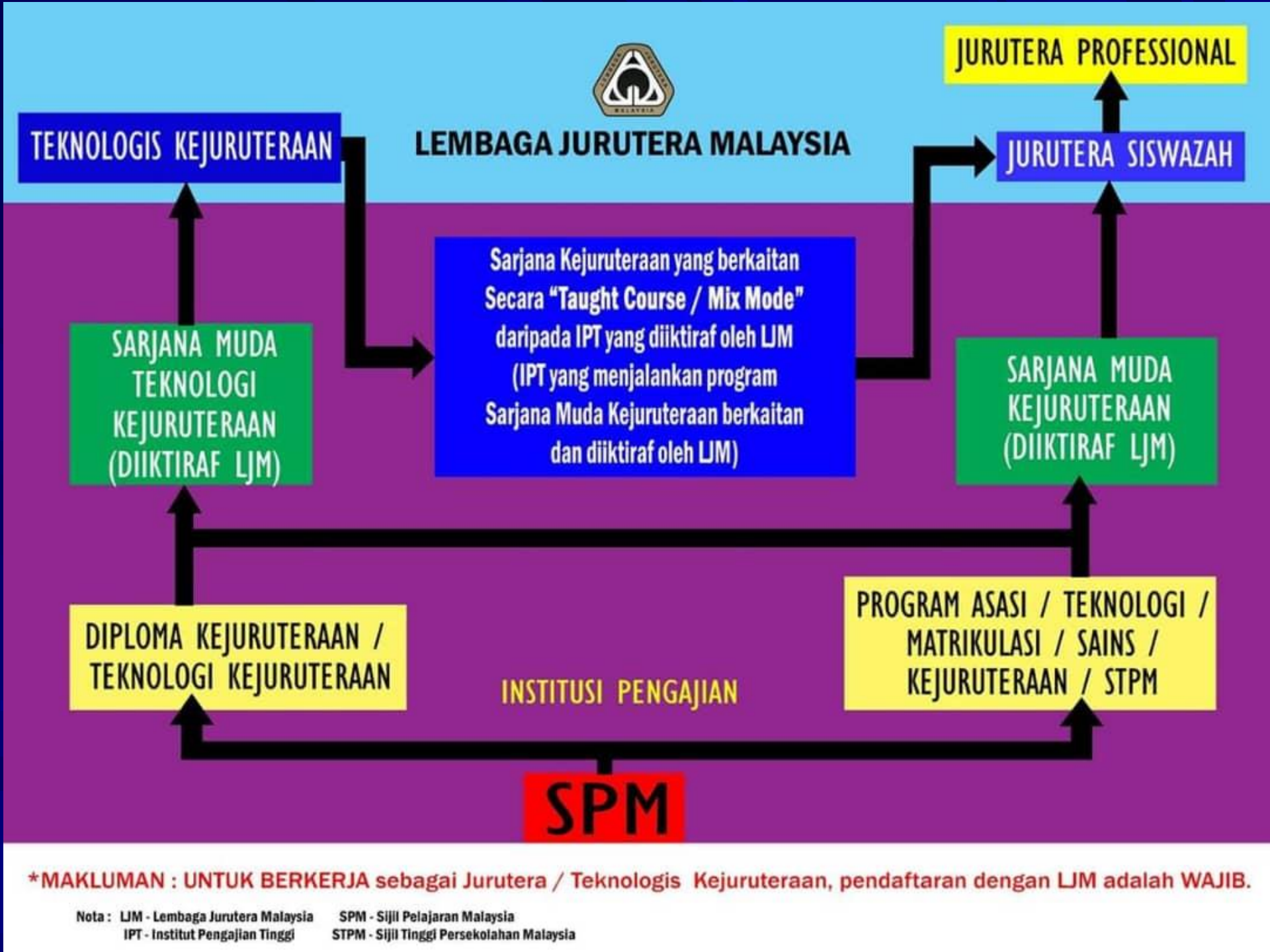
ROUTE TO M.I.E.M AND PE (TIER 1 PROFESSIONAL ENGINEER) STATUS



Institution of Engineers Malaysia

Route to MIEM / Professional Engineer





*MAKLUMAN : UNTUK BERKERJA sebagai Jurutera / Teknologis Kejuruteraan, pendaftaran dengan LJM adalah WAJIB.

Nota : LJM - Lembaga Jurutera Malaysia SPM - Sijil Pelajaran Malaysia
IPT - Institut Pengajian Tinggi STPM - Sijil Tinggi Persekolahan Malaysia

Registration with BEM

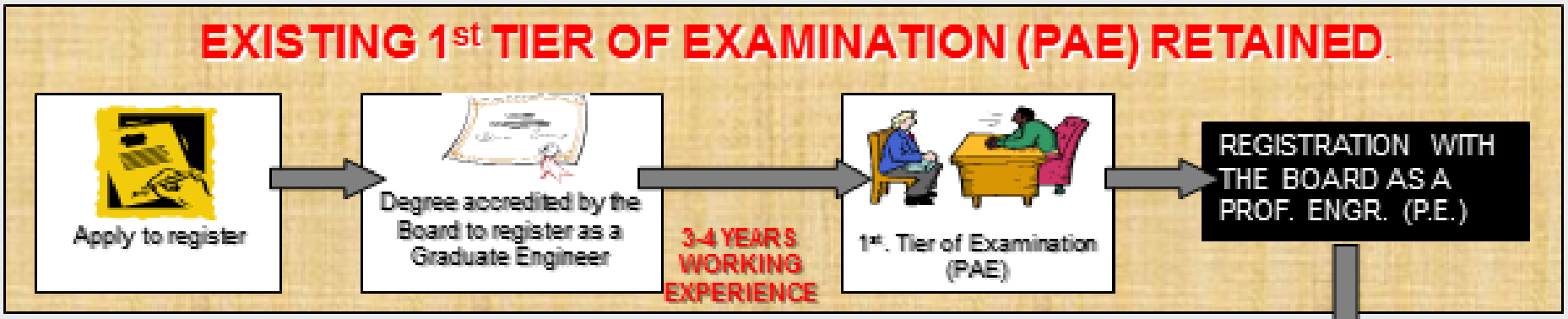
Work Experience after Date of Registration with BEM as Graduate Engineer only shall be considered for P.I Application

Example: Graduated with accredited Engineering Degree in 2010 but registered as Graduate Engineer with BEM in March 2018 – Permitted to apply for Tier 1 PE P.I. Interview after March 2021

Route To Become P.Eng with PC

Institution of Engineers Malaysia

EXISTING 1st TIER OF EXAMINATION (PAE) RETAINED



Notes:

Registration with the BEM as a Graduate Engineer is straight-forward provided that conditions such as the basic qualifications are met (eg. Engineering degrees recognised under the Washington Accord).

Registration as a Professional with BEM after passing the 1st. tier examination (PAE). However if foreign professionals can demonstrate the same applies to their home countries BEM may consider them to be registered without sitting the 1st. tier of examination or at least undergo the interview process.

To 'practise' and supply professional engineering services BEM will issue licenses upon passing the Professional Competency Exams (PCE) i.e. the 2nd. tier of registration. This is mandatory for all professional engineers wishing to supply professional engineering services.

For Engineers → Other Exams

Institution of Engineers Malaysia

EXISTING P.I. RETAINED (REG. OF ENG. ACT)

Professional Assessment Examination

REGISTER WITH BEM AS P.ENG

GAS SUPPLY ACT, SURUHANJAYA TENAGA

C.E. for Jurutera Gas

Professional Interview

JURUTERA GAS

ELECTRICITY SUPPLY ACT, SURUHANJAYA TENAGA

C.E.for Comp. Elec. Eng

Professional Interview

COMPETENT ELECTRICAL ENGINEER

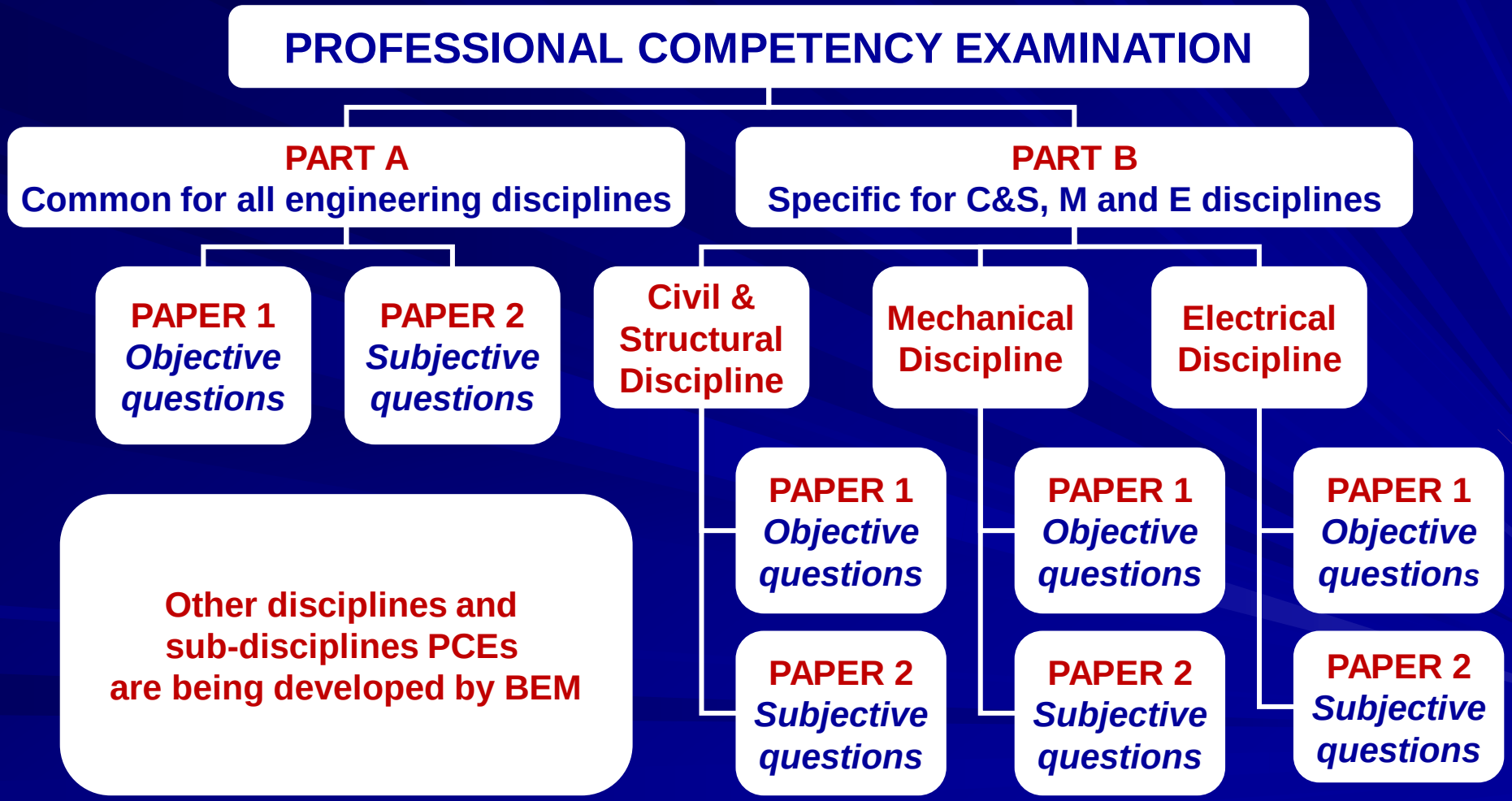
Professional Competency Examination

PRACTICING CERTIFICATE FOR SUBMITTING PERSON UNDER 'S.D.B. ACT' (Building Industry)

PRACTICING CERTIFICATES FOR OTHER ENGINEERING DISCIPLINES

NOTE THAT THE SPAN ACT NOW REQUIRES THE ENGINEER OR ARCHITECT TO BE REGISTERED WITH THEM

Format of PCE (for PE to PEPC)



PCE : PART A

PART A - Common Paper

- To be taken by **all candidates**
- **Non-technical** in nature
- To test candidates' knowledge of **laws governing the profession**, the **responsibility of the professional towards the general public** and **standards of professionalism and ethical behaviour**

There are two papers for this PART → Paper 1 and Paper 2

PCE : PART B

PART B - Paper on each Discipline

- To be taken by candidates in the **relevant discipline** which they wish to practice
- **Technical** in nature
- **Test candidate's competency** within his respective field of practice on :
  - ✓ Regulations and rules of practice by BEM
  - ✓ Statutory laws, codes, regulations etc.

There are two papers for this PART → Paper 1 and Paper 2

IEM LOG BOOK

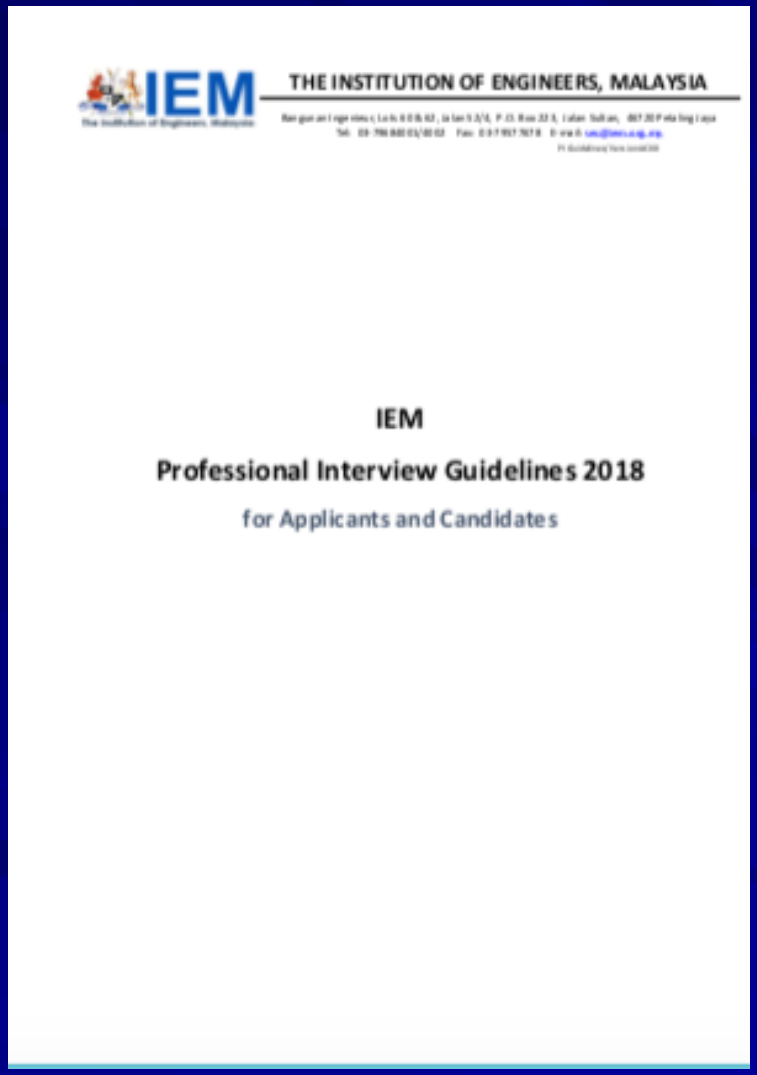
(prepares Graduate Engineers for PI / PAE)

What needs to be recorded:

1. **Practical working experience & competencies achieved (minimum 3 years)**
2. **Attendance at relevant courses (optional for BEM Registration but necessary for P.I. Interview – Portfolio of Evidence)**

2.0
Highlights of the IEM P.I. Process

IEM
Professional Interview



THE INSTITUTION OF ENGINEERS, MALAYSIA

IEM

Professional Interview Guidelines 2018

for Applicants and Candidates

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.

Competency Categories – Oral Interview

A -- Knowledge and Understanding

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

C -- Responsibilities, Management and Leadership

D -- Communication and Inter-personal Skills

E -- Professional Commitment

Competency Categories – Oral Interview

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

A	B	C	D	E
• Ability to work with engineering / technology	• Applying engineering methods	• Project, process, and resource skills	• Communication and team skills	• Professional approach

Engineering Discipline Specific — **Common Skills** — **Professional Commitment**

Refer to **IEM PI 0100** for more details.

Competency Elements – Oral Interview

- Each **Competency Category** consists of a few **Competency Elements**.
- There are **18 Competency Elements** under the **5 Competency Categories** – refer to document IEM PI 0100.
- The professional Interview will **directly assess** PI Candidates on all the 18 Competency Elements.
- There are **four (4) levels** for assessing Candidate's attainment of each competency element.

Objective Assessment -- Rubrics

Level	Generic Statement of Attainment
1	Little or no evidence of competency
2	Some evidence of competence identified
3	Fully acceptable level of competency
4	Exceptionally strong level of competency

Clarifying Concerns

- ✓ Each Candidate has unique work experience because of the nature of job.
- ✓ Most Candidates are able to develop an acceptable level of attainment in the majority of Competency Elements.
- ✓ 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.

3.0
IEM Structured Training Program

Structured Training Program (Design)

A program made possible for graduate engineers, without or lacking in Design experience, to acquire/gain

industry-typical and generic competency elements

to meet the PI candidacy's **minimum-month criteria for the Design/Office experiential exposure**

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Structured Training Program
(Originally-initiated Unit Competency Modules)

UNIT A : Common Modules
(applicable to all the Engineering Disciplines)

UNIT B : Specific Discipline Modules
(a set each for the primary disciplines of Chemical, Civil, Electrical, Electronic, and Mechanical)

Structured Training Program
(Originally-Initiated Unit Modules)

UNIT B : Specific Discipline Modules (a set each for Chemical, Civil, Electrical /Electronics, and Mechanical)

UNIT B 1 : Design

UNIT B 2 : Detailed Engineering/ Construction/Operation/ Maintenance

UNIT B 3 : Research/Development and Commercialization (same to all Disciplines)

Structured Training Program
(Originally-Initiated Unit Modules)

UNIT A : Common (Attribute) Modules (applicable to all the Engineering Disciplines)

- Unit A1 : Engineering Practice
- Unit A2 : Engineering Planning and Design
- Unit A3 : Self Management in the Engineering Workplace
- Unit A4 : Engineering Management

Structured Training Program
(Unit A1: Engineering Practice)

To develop a professional approach to a specific area of engineering practice.

1. Present and develop a professional image
2. Pursue continuing professional development
3. Integrate engineering with other professional inputs
4. Develop engineering solutions
5. Identify constraints on prospective engineering solutions

Structured Training Program
(Unit A2: Engineering Planning and Design)

To interpret requirements, through application of engineering principles, conceptualisation of options and application of creativity meeting clients' requirements.

1. Interpret and scope design requirements
2. Conceptualize proposal and seeks advice on latest technology
3. Implement planning and design process
4. Review design toward achieving acceptance
5. Prepare and upkeep documentation of design
6. Validate design

Structured Training Program
(Unit A3: Self Management in the Engineering Workplace

To perform work competently, make sound judgement re work priorities and information requirements toward achieving effective working relationships and planned outcomes.

1. Manage Self
2. Work effectively with people
3. Facilitate and capitalize on change and innovation
4. Manage work priorities and resources
5. Maintain focus and relationship with stakeholders
6. Manage information

Structured Training Program

(Unit A4: Engineering Management)

To manage work program that assures time, cost and quality will be planned, organized, monitored, and controlled/coordinated effectively and efficiently to achieve the scheduled outcomes of a project(s).

1. Develop project integration
2. Develop project collaboration
3. Manage people
4. Manage physical resources within a project(s)
5. Manage quality, safety, environment and risk
6. Manage cost and procurement
7. Manage time and progress
8. Finalise and close the project(s)

Difference Between ECD & STP

1. Both the **ECD** and **STP** are forms of practical training program, but each with different set of aim and objectives.
2. The **ECD** aims to provide continual guidance to graduate engineer members (mentees) preparing for the PI by the following principal objectives :-
   - ✓ assigning qualified Professional Engineers (P.Eng or P.Eng.P.C) of the same discipline as external mentors
   - ✓ tracking the progress and advising on quality, including on exposure gaps, of practical experience and developmental training w.r.t. the PI quality requirements
   - ✓ logging formally, on a quarterly basis, the experiential learning and acquired competencies from the above exposures

Difference Between ECD & STP

3. The **STP** aims to facilitate or complement the practical training and development of graduate engineer members (including **ECD** mentees) by:-
   - ✓ providing guidelines on industry-typical and generic work competency elements for the respective application defining activities – those common to all, and those specific to each of, the principal engineering disciplines (Chemical, Civil, Electrical, Electronic, and Mechanical)
   - ✓ providing an industry-typical practical design engineering exposure - in the forms of modulated Design course program *and/or* simulated Design Office work situation – on previously *proven* (benchmarked) projects, to meet the stipulated minimum 6-month exposure in Design for the PI candidacy requirement

Structured Training Program

Current and on-going STP initiatives are :-

- Electrical Engineering Design Course
- Fire Engineering Design for a 10-Story Building
- Design of Crude Oil Refinery & Tank Farm - Premised on Process Safety & Environmental Sustainability
- Civil-Geotechnical Design Course

4.0
ECD Mentorship Program

- Roles and Responsibilities of Mentees
- Roles and Responsibilities of Mentors

PRACTICAL TRAINING FOR GRADUATES

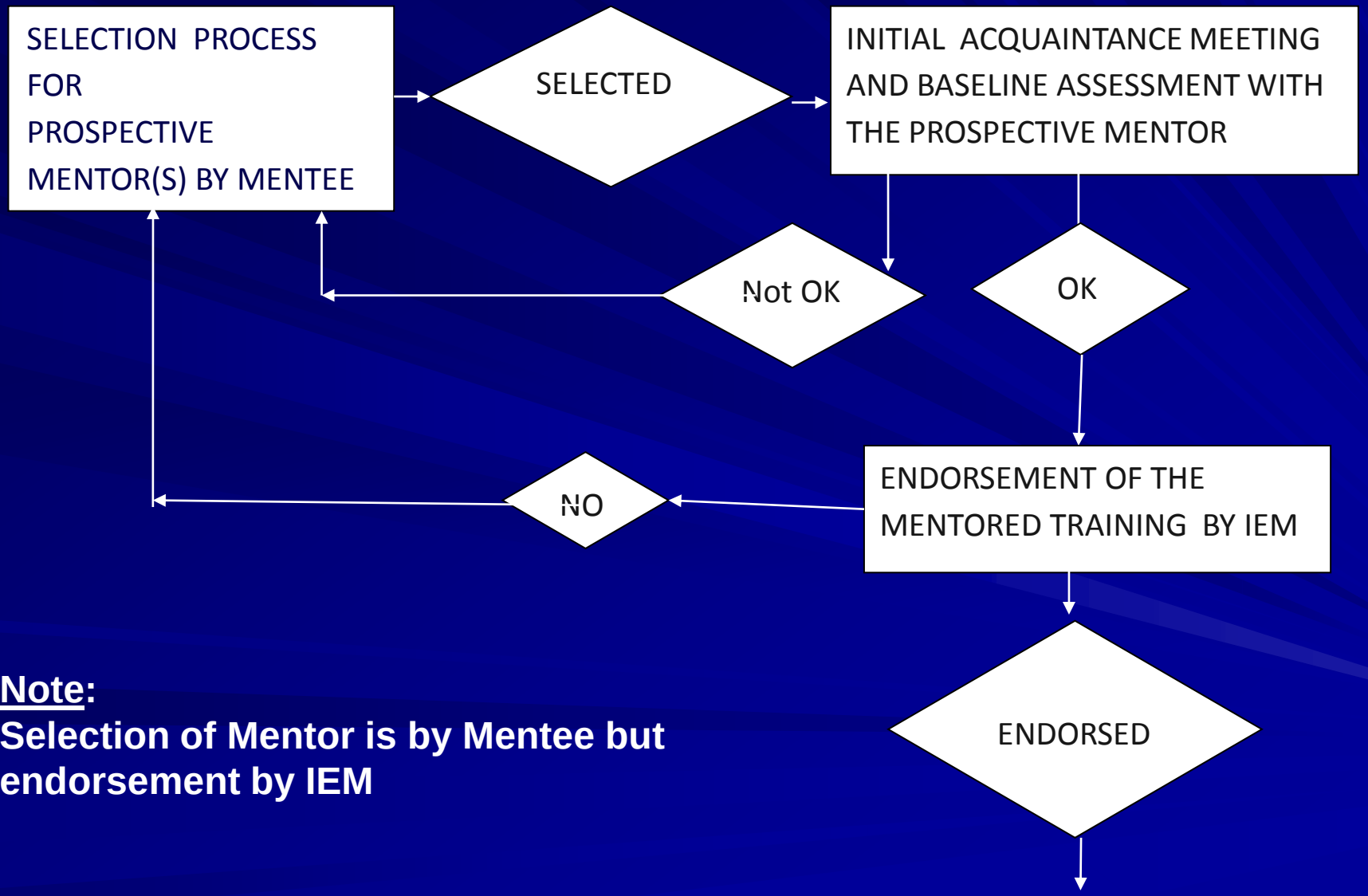
The Registration of Engineers Regulations 1990 states that a registered Graduate Engineer is required to obtain practical experience under the supervision of a Professional Engineer of the same discipline or approved allied discipline.

OBJECTIVES

1. To assist Graduate Engineers who are unable to obtain the supervision of a P.Eng. in their own organisation.

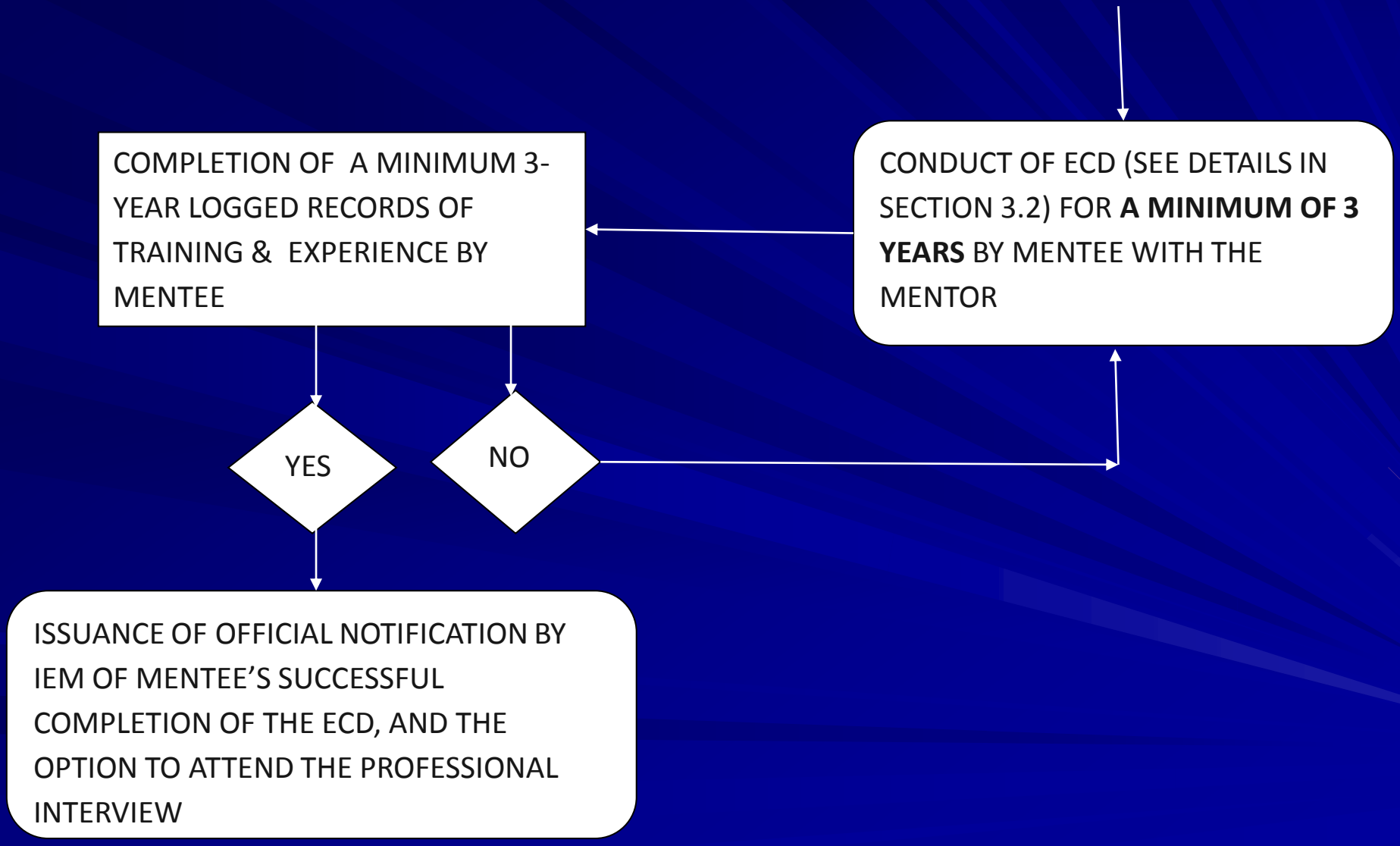
2. To assist Graduate Engineers obtain their practical experience under a formal training scheme supervised by a Corporate Member of the Institution before appearing for the Professional Interview.

ACTIVITY FLOW DIAGRAM ON IEM'S ECD



Note:
Selection of Mentor is by Mentee but endorsement by IEM

ACTIVITY FLOW DIAGRAM ON IEM'S ECD



IEM Mentors Database

IEM Headquarters in Petaling Jaya, Selangor maintain a data base of mentors

- ✓ **Contact IEM Secretariat, Pn. Halimah Musa for the data base**

Email: halimah@iem.org.my

Tel: 03 – 7968 4001 / 2

Fax: 03 – 7957 7678

4.1
Roles & Responsibilities of Mentees

Roles & Responsibilities of Mentee

1. Discuss with Mentor on Mentor relevant experience in the field that he is working now so that Mentee can get relevant advice.
2. Get permission from Mentee employer organization on the ECD in order to sanction the type & level of confidentiality & information that can be shared with the Mentor when reporting his training & work experience.
3. ECD possibly be incorporated into the Mentee's staff development program so that training under the scheme can be supported by the organization.

Roles & Responsibilities of Mentee

4. Make the necessary arrangement to allow the Mentor to visit to his workplace, if necessary to facilitate or improve the mentoring process.

5. Plan & arrange the appointment with the Mentor on a regular basis, **at least once in every THREE (3) months** .

6. Meeting schedule & the mode of meeting shall be mutually agreed upon by both parties.

Roles & Responsibilities of Mentee

7. Prepare proper logged reports & documentation to be verified by the Mentor during the scheduled meeting.

8. Log book must be sent to IEM **once a year** and **continuously** for minimum of **THREE (3) consecutive years** for verification by ECD Sub-Committee.

   Once verified & endorsed by IEM, the Log Book will be returned to the Mentee.

Roles & Responsibilities of Mentee

9. The Mentee is allowed to backdate his working experience in the log book for a maximum period of 1 year.

10. The Mentor should preferably be the same person for the 3 consecutive years. IEM should be notified if there is a change of mentor.

11. In the event that the Mentee wishes to discontinue with the ECD he/she needs to inform both the Mentor & IEM of his/her decision in writing.

Roles & Responsibilities of Mentee

12. The Mentee should make the effort to get the training & experience necessary as required by Professional Interview Guidelines within the mentorship period.

13. To apply for Professional Interview with IEM, the Mentee must ensure that he/she has minimum THREE (3) years relevant work experience inclusive meeting minimum design & site experience related to his/her discipline.

14. Upon passing the Professional Interview with IEM, a Mentee has only a maximum of **ONE (1)** year to apply to the Board of Engineers (BEM) to be a Professional Engineer (PE)

4.2
Roles & Responsibilities of Mentors

MENTOR'S REQUIREMENTS

- Must be MIEM and a Professional Engineer for at least 3 years, and be in a responsible position
- PEs who are less than three (3) years as Corporate Members (MIEM) could be appointed as ECD Mentors provided they attend the ECD Engagement at least twice before being accepted as a Mentor
- Must not have more than 3 Mentees at any time.
- Must be in the same or related discipline with the Mentee

RESPONSIBILITIES OF MENTORS

1. Provide guidance to young graduates.
2. Monitor progress of young graduates.
3. Assist graduates in their training programmes.
4. Review documentation of graduates to ensure adequate quality.

Roles & Responsibilities of Mentor

1. Assess the Mentee's baseline capabilities & in relation to the developmental support, if any, possible from the Mentee's employer organization, to possibly enable the ECD be accounted as part of the Mentee's staff development plan.

2. If the Mentee's employer organization does not support the Mentee's staff development, the Mentor shall advise the Mentee on the possible requirements needed so that the Mentee can take appropriate action to gain the training & experience needed.

Roles & Responsibilities of Mentor

3. Meet with the Mentee, at least once in every THREE (3) months, to review & discuss issues relating to the Mentee's training for guidance & verification.

4. The Mentor should wherever possible visit the Mentee's workplace at least **once** during tenure of mentorship.

5. Where the Mentor is outside Mentee's organization, the Mentor is encouraged to communicate with the Mentee regularly by all available modes of communication.

Roles & Responsibilities of Mentor

6. Log Book is to be endorsed by the Mentor on a quarterly basis & the Mentor's PE stamp should be affixed, signed with date of endorsement.

   The Mentor should also provide his/her comments in Log Book.

7. The Mentor should inform Mentee of his/her weakness from time to time & not wait until the last minute to inform that whatever Mentee has done so far is incorrect.

Roles & Responsibilities of Mentor

8. The Mentor needs to review & make advisory comments on the Mentee's training & experience & check for adequacy of the Log Book report so that the Mentee can use it to prepare for the Professional Interview.

9. The Mentor should encourage his/her Mentee to obtain relevant experience based on his/her area of expertise for the purpose of Professional Interview.

Roles & Responsibilities of Mentor

10. Mentor should advise the Mentee that in addition to core engineering practices, he/she should also obtain experience in the following areas:

- √ Economics and Finance
- √ Quality Systems
- √ Environmental Management
- √ Marketing
- √ Energy Efficiency
- √ Malaysian Law and Legal Systems of other countries

The training could probably be limited to the ratio of **80:20** inclined towards core engineering practices.

Roles & Responsibilities of Mentor

11. Advise on other information & knowledge such as ethics, environment & safety, business, economics & communication.

12. Check that the minimum duration spent in activities for **design, field & management experience** is obtained during the ECD period meet the P.I, requirements. E.g.:
    - Design / Office – Civil: 12 months
    - Site / Field – Civil: 12 months

Roles & Responsibilities of Mentor

13. It is advisable for the Mentor to encourage & support the mentee to sit for the Professional Interview after the completion of the ECD.

14. Advise the requirements & the process needed for the Mentee to become a Professional Engineer with BEM & a corporate member of IEM.

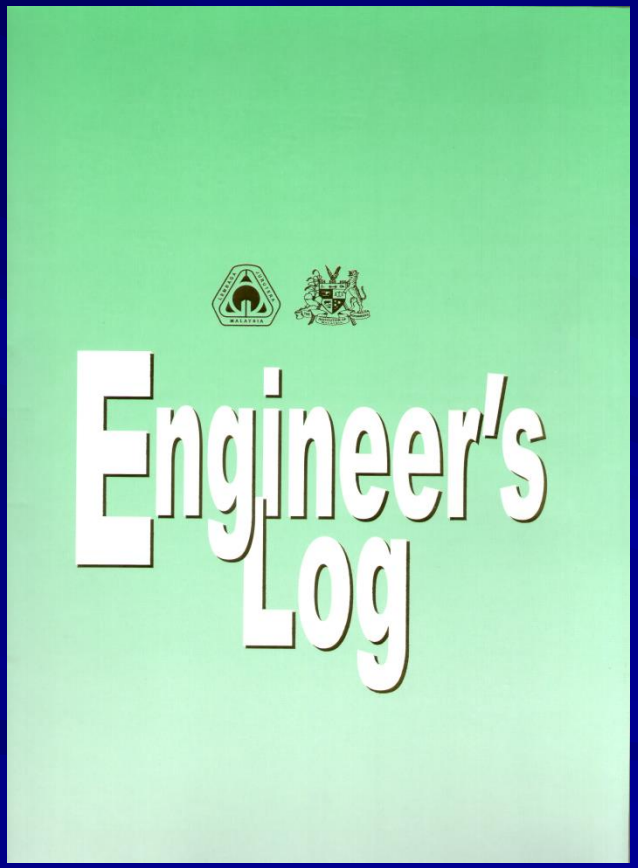
REWARD OF MENTORS

1. Personal satisfaction that you are responsible for the professional development of your Mentee.
2. **15 CPD points** per Mentee per year.
3. Recognition Letter
4. IEM's Next Top Mentor - Annual

5.0
IEM Log Book

- **Log Book Details**

Log Book Details



What Is In The Log Book

Section A – Particulars of Log Book Scheme

Section B – Summary of Practical Training Experience

Section C – Practical Training Record (3 Months Period)

Section D – Courses Attended (Optional)

What Is In The Log Book

- Section A - Particulars of Log Book Scheme
  - Particulars of Graduate under training
  - Particulars of Mentor / Supervising Engineer
  - Particulars of Mentor / Supervising Engineer (changes)
- Section B – Summary of Practical Training Experience
  - Summary of Training Record (for a 3-month period)
- Section C – Practical Training Records
  - Practical Training Records (for a 3-month period)
- Section D – Courses Attended
- Section E – Professional Career Development Activities
- **NEW – To include Log Book Guidelines**
- **NEW – To include the Enhanced PI Guidelines**

Section A
Particulars of Log Book Scheme

Particulars of Graduate Engineer under training

Name of Candidate: _____

Identity Card Number: _____

Date of Birth: _____ Nationality: _____

BEM Graduate Registration No: _____ Date: _____

IEM Membership No: _____ Date: _____

Discipline of Engineering: _____

Address: _____

_____

Telephone No. _____ (Off) _____ (Hse/HP) Fax: _____

E-mail: _____

Degree Awarded: _____ Year of Graduation: _____

Colleges / Universities attended (with dates) after SPM / STPM

1. _____
2. _____
3. _____
4. _____

Industrial training / experiences during undergraduate course

_____

_____

_____

_____

_____

_____

_____

_____

Particulars of Mentor / Supervising Engineer

Name: _____ IEM M'ship, Grade & No: _____

Name and Address of Company/Organisation: _____

_____ Tel No : (0) _____

Present Designation: _____

Engineering Discipline: _____ Year elected as IEM Corporate Member: _____

Brief particulars of working experience: _____

_____

_____

_____

_____

Particulars of Mentor / Supervising Engineer (if there is a change)

Name: _____ IEM M'ship, Grade & No: _____

Name and Address of Company/Organisation: _____

_____ Tel No : (0) _____

Present Designation: _____

Engineering Discipline: _____ Year elected as IEM Corporate Member: _____

Brief particulars of working experience: _____

_____

_____

_____

Particulars of Mentor / Supervising Engineer (if there is a change)

Name: _____ IEM M'ship, Grade & No: _____

Name and Address of Company/Organisation: _____

_____ Tel No : (0) _____

Present Designation: _____

Engineering Discipline: _____ Year elected as IEM Corporate Member: _____

Brief particulars of working experience: _____

_____

_____

Section B
Summary of Practical Training & Experience

PRACTICAL TRAINING & EXPERIENCE RECORDS SUMMARY

Annual Summary of Competencies Obtained

Category	Element	Brief Evidences	Mentor's Comments	Date
A Engineering Knowledge Application	A1			
	A2			
	A3			
B Problem Solving	B1			
	B2			
	B3			
C Management	C1			
	C2			
	C3			
	C4			
D Interpersonal Skill	D1			
	D2			
	D3			
E Professional Ethics	E1			
	E2			
	E3			
	E4			
	E5			

Mentor recommendations

Year 1/2/3 Recommendation	
Support for PI	
Require more exposure	
Date	

Institution of Engineers, Malaysia – Engineering Competency Development – Updated 4 December 2018

PRACTICAL TRAINING & EXPERIENCE RECORDS SUMMARY

Annual Summary of Competencies Obtained

Category	Element	Brief Evidences	Mentor's Comments	Date
A Engineering Knowledge Application	A1			
	A2			
	A3			
B Problem Solving	B1			
	B2			
	B3			
C Management	C1			
	C2			
	C3			
	C4			
D Interpersonal Skill	D1			
	D2			
	D3			
E Professional Ethics	E1			
	E2			
	E3			
	E4			
	E5			

Mentor recommendations

Year 1/2/3 Recommendation

Support for PI	
Require more exposure	
Date	

Quarterly Summary of Competencies Obtained

From - To (Month & Year)	Position Held / Name of Employer	Brief description of Duties (Full details to be documented in Section C)	Area of Experience (Design, Site, Management Teaching, Research)	Competency Elements Gained

COMMENTS OF SUPERVISOR/MENTOR

COMPETENCY CATEGORY A (Detailed)

A	**Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology.**
A1	Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology and other relevant developments.
A2	Engage in the creative and innovative development of engineering technology and continuous improvement systems.
A3	Apply engineering knowledge related to local practices, codes, standards, specifications, materials, products, environmental plans and other requirements; and where appropriate, apply engineering knowledge contributed by others including suppliers, consultants, contractors, manufacturers, technologists, researchers and independent experts.

Evidence of your competence in Category A	Element	Date Obtained

Institution of Engineers, Malaysia – Engineering Competency Development – Updated 4 December 2018

COMPETENCY CATEGORY B (Detailed)

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

Evidence of your competence in Category B	Element	Date Obtained

COMPETENCY CATEGORY C (Detailed)

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

Evidence of your competence in Category C	Element	Date Obtained

COMPETENCY CATEGORY D (Detailed)

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

Evidence of your competence in Category D	Element	Date Obtained

COMPETENCY CATEGORY E (Detailed)

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

Evidence of your competence in Category E	Element	Date Obtained

Section C
Practical Training Records - 3-Month Period

PRACTICAL TRAINING RECORD – 3-MONTH PERIOD

Name of Candidate: _____

Effective from: _____ To: _____

Brief description of practical training experience

_____

_____

_____

_____

_____

_____

_____

Details of project(s) participated

_____

_____

_____

_____

_____

_____

_____

_____

Types of skills/competencies obtained:

_____

_____

Name of Mentor / Supervising Engineer: _____ Discipline:_____

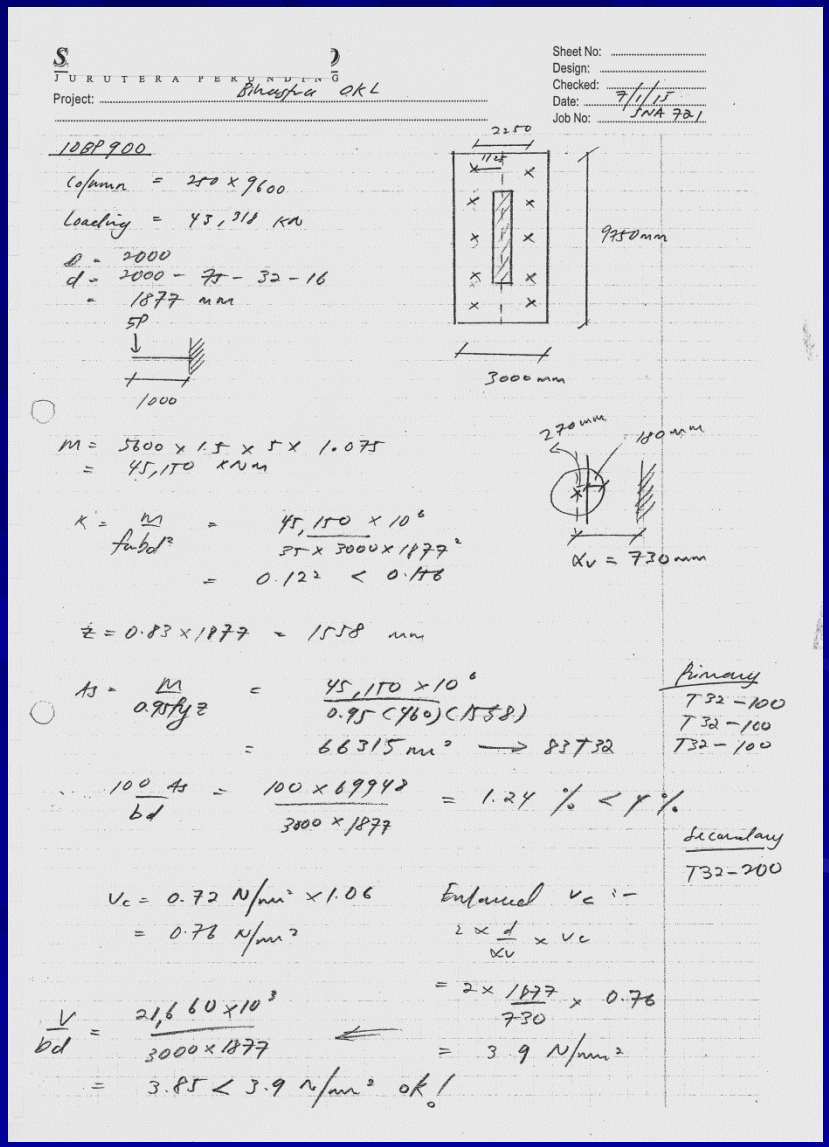
IEM Membership No.: _____ P Eng. No:_____

Signature of Mentor/Supervising Engineer: _____

Institution of Engineers, Malaysia – Engineering Competency Development – Updated 4 December 2018

Section C
Practical Training Records – 3 Month Period

Project :	S3 Land Lot 1345										
		DISHARGE									REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(21)	(22)	(23)	(24)	
[redacted]	[redacted]	Catchment Area (A)	[redacted]	[redacted]	[redacted]	Discharge Q = CIA/360	[redacted]	Drain Depth	Sump Depth	[redacted]	Remark
	(m2)	(Hectares)		(Yrs.)	(mm/hr)	(m3/s)	(m)	(m)	(m)	(m)	
	-	-		-	-	-		0.60		-	
1-2	8934	0.893	0.9	10	196.67	0.44	0.45	0.46	0.46		ok
2-3	8934	0.893	0.9	10	196.67	0.44	0.45	0.47	0.47		ok
3-4	8934	0.893	0.9	10	196.67	0.44	0.45	1.11	1.11		ok
4-5	8934	0.893	0.9	10	196.67	0.44	0.45	1.30	1.30		ok
	-	-		-	-	-		0.60		-	
1-2a	8934	0.893	0.9	10	196.67	0.44	0.45	0.98	0.98		ok
	-	-		-	-	-					
SD	8934	0.893	0.9	10	196.67	0.44	0.45	1.21	1.21		ok
	-	-		-	-	-				-	
5-6	8934	0.893	0.9	10	196.67	0.44	0.45	4.44	4.44		ok
	-	-		-	-	-				-	
6-Ext	8934	0.893	0.9	10	196.67	0.44	0.45	4.95	5.05		ok



Sample Attachments

Section D
Courses Attended (Advisable)

COURSES ATTENDED (ADVISABLE)

Name of Candidate: _____

	DESCRIPTION	DATE ATTENDED	CONDUCTED BY	CERTIFICATION
1	Code of Ethics / Regulations			
2	Engineering Management			
3	Health and Safety			
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
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19				
20				
21				
22				
23				
24				
25				

Institution of Engineers, Malaysia – Engineering Competency Development – Updated 4 December 2018

Section E
Professional Career Development Activities

PROFESSIONAL CAREER DEVELOPMENT ACTIVITIES

Name of Candidate: _____

ACTIVITY	DATE	NO. OF HOURS	CERTIFICATION

Institution of Engineers, Malaysia – Engineering Competency Development – Updated 4 December 2018

BEM Explanatory Notes

EXPLANATORY NOTES ON THE

REMOVAL OF PDP MANDATORY COURSES REQUIREMENT

FOR PROFESSIONAL ENGINEER APPLICATION

This Explanatory Note specifically refers to Circular No. 2/2005 pertaining to Regulation 22 with regard to Professional Development Program (PDP) Units and attendance for compulsory courses for Graduate Engineers applying to become Professional Engineers.

The Circular is no longer applicable ***effective 15th February 2016*** where the Board has agreed to abolish the PDP units required to apply for the registration as a professional engineer. Therefore, the requirement to attend four courses namely:

i) Code of Ethics
ii) Health and Safety at Work
iii) Engineering Management Practice
iv) Related Courses on other branches of engineering

are no longer compulsory. Likewise, the requirement to complete not less than 30 PDP units by attending talks, seminars, society/ association meetings and community services for professional is no longer mandatory from the above mentioned date.

BEM Explanatory Notes

Nevertheless, the requirement for three-year practical experience remains effective as required under the Registration of Engineers Act 1967 (Amendment 2015).

Even though it is no longer mandatory to attend the compulsory courses and fulfil the minimum PDP Units, the applicants for the Professional Engineer status are expected to demonstrate proficiency in matters related to the four mandatory courses mentioned above. The applicant may acquire the relevant knowledge and proficiency through work experience, formal and informal courses, on-the-job training and any other means.

BEM, IEM and other accredited training providers may still provide the relevant courses for the Graduate Engineers. The Board also advises the applicants to keep a record of the trainings attended to facilitate the Professional Engineer application process.

Log Book Details

1. The **Log Book** submitted by the Mentee should include the following:
   - ✓ Brief description of jobs or tasks performed by the Mentee.
   - ✓ Sketches or simple diagram may be used.
   - ✓ Detail investigations, studies & calculations could be submitted as attachments to the Log Book.

2. Record of activities should be in chronological order.

3. Seminars, talks or courses should be recorded in his or her log book & provided with a summary on the topics learned.

Common Mistakes

1. Submission not complying with Professional Interview Guidelines
   - ✓ All submission on site experience only, no design experience

2. Irreverent engineering experiences such as
   - ✓ Mechanical graduate engineer submits civil engineering work experiences
   - ✓ Electronic / biomedical graduate engineer submit electrical engineering work experiences

3. Repeated engineering experiences submissions
4. Insufficient details – one page submission, picture report

Common Mistakes

5. Sub-discipline work experiences such as
   - ✓ Electrical graduate engineer who wish to sit for electrical engineering discipline submits sub-discipline work experience such as electronic, telecommunications or biomedical (Will be permitted to sit for the relevant sub-discipline only)

6. Irrelevant details – MOM, not a record of construction progress but focused on experience & competencies gained

7. Submission of confidential document / information without employer's endorsement

Completing Logbook ***DOES NOT*** Guarantee Passing PI Interview

Logbook assessment purely based on submission and does not assess the candidate's competency on

- ✓ Oral communication skills
- ✓ Presentation skills
- ✓ Personal grasp & application of engineering fundamentals
- ✓ Maturity to understand his own limitations
- ✓ Adherence to professional code of ethics
- ✓ Capacity to accept professional responsibility

6.0
Q&A

Engineering Competency Development: Paving the Path for Future Professional Engineers

Author: Engineering Competency Development Committee
(formerly known as Log Book Training Scheme Sub-Committee)

In 1982, IEM initiated the Log Book Training Scheme (LBTS) programme to assist Graduate Members obtain their professional engineer qualification. The objective was to support graduate members in organisations which did not have a professional engineer with the same engineering discipline to act as mentor or supervising professional engineer.

It is with this very core essence of its establishment and to support the change of professional engineer interview from outcome based to competency-based assessment that IEM has rebranded LBTS to Engineering Competency Development (ECD).

Since its inception, many graduate members have benefitted from this programme. IEM shall continue to provide this service to graduate members with enhancements (the objectives of this rebranding exercise) to cater to changes in the IEM Professional Interview assessment format, the younger generation and advancements in the industry.

In this rebranding exercise, we concentrate on five elements: Database, Survey, Name, Engagement and Appreciation.

Firstly, membership to the ECD programme is not automatic. Neither was the LBTS. However, as the years went by, the programme accumulated a very long list of mentors and mentees, whether they were active or not. The list became meaningless and using manual tracking made it too complex and time consuming to utilise or maintain.

To streamline this issue, database clean-up was required. An invitation email/letter was sent out in December, 2017, to all mentors and mentees listed in the database. The objective was to update and confirm interest of each mentor and mentee to be maintained in the programme. Their replies were tabulated.

Elements of LBTS rebranding

Enrolling in the programme is voluntary since a graduate member can take other routes to become a professional engineer. We believe in concentrating our efforts and energy of our resources on graduate members who are serious about progressing in their professional careers. We volunteer because we believe in nurturing the engineering industry and this should be appreciated by the participants. The database clean-up exercise reduced the list of participants by more than half. The list of mentors and mentees will be listed in the ECD section for the reference of members.

Secondly, we conducted a survey of all the members in the old database with the objective to improve LBTS effectiveness for the candidates pursuing Professional Engineer Certification, to make LBTS more effective for the mentor in helping their mentees and to collect information on areas of improvement that need to be considered during LBTS rebranding. The survey was conducted on the "survey monkey" platform from 5 January to 5 February, 2018. It was divided into 3 categories: Demographic Information, Engineer's Log and Overall Scheme.

The response was not encouraging but those concerned over the well-being of the LBTS programme, managed to voice out their opinions. One of the most important findings was that all respondents thought the programme was beneficial and relevant to their organisations and their career development. This was important to know because, if this programme was deemed irrelevant, it should be scrapped.

Additional Information	Posted on		
IEM's Next Top Mentor Info	25-Jan-2019	Download	Post Comment
IEM ECD Mentorship Program Log File (.docx) Form	10-Jan-2019	Download	Post Comment
IEM ECD Mentorship Program Log Files (.pdf) Form	10-Jan-2019	Download	Post Comment
ECD PARTICIPANTS LIST_Mentee List	23-Nov-2018	Download	Post Comment
ECD PARTICIPANTS LIST_Mentor List	24-Jan-2019	Download	Post Comment
FAQs Info	03-Feb-2017	Download	Post Comment
IEM Log Book Form Form	04-Nov-2015	Download	Post Comment
IEM Log Book Guidelines Info	04-Nov-2015	Download	Post Comment

- Opens to all Mentees in the IEM Mentorship Program
- 1 March to 30 March 2019
- Forms and Rules & Regulation available on IEM website


IEM
The Institution of Engineers, Malaysia
ECD
Engineering Competency Development

Thank you